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</table>
APPENDIX CRDR-15

7 5-minute Series Topographic Maps (Rosso 2016 11-13)
EDR Historical Topo Map Report

Site Name: 601-711 Walsh Avenue  
Client Name: Rosso Environmental, Inc.

601-711 Walsh Avenue  
601-711 Walsh Avenue  
Santa Clara, CA 95050  
EDR Inquiry # 4771017.4

P.O.##  
Project: 16-0062.00

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Rosso Environmental, Inc. were identified for the years listed below. EDR’s Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

<table>
<thead>
<tr>
<th>P.O.#</th>
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<td>Project</td>
<td>16-0062.00</td>
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</table>

**Search Results:**

**Coordinates:**

- Latitude: 37.370924 37° 22' 15" North
- Longitude: -121.947011 -121° 56' 49" West
- UTM Zone: Zone 10 North
- UTM X Meters: 593235.14
- UTM Y Meters: 4136541.52
- Elevation: 43.98' above sea level

**Maps Provided:**

- 2012
- 1889
- 1980
- 1973
- 1968
- 1961
- 1953
- 1899
- 1897

---

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**Topo Sheet Key**

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 2012 Source Sheets

- **San Jose West**
  - 2012
  - 7.5-minute, 24000
  - Milpitas
  - 2012
  - 7.5-minute, 24000

### 1980 Source Sheets

- **San Jose West**
  - 1980
  - 7.5-minute, 24000
  - Photo Revised 1980
  - Aerial Photo Revised 1979
  - Milpitas
  - 1980
  - 7.5-minute, 24000
  - Photo Revised 1980
  - Aerial Photo Revised 1979

### 1973 Source Sheets

- **Milpitas**
  - 1973
  - 7.5-minute, 24000
  - Photo Revised 1973
  - Aerial Photo Revised 1973
  - **San Jose West**
  - 1973
  - 7.5-minute, 24000
  - Photo Revised 1973
  - Aerial Photo Revised 1973

### 1968 Source Sheets

- **Milpitas**
  - 1968
  - 7.5-minute, 24000
  - Photo Revised 1968
  - Aerial Photo Revised 1968
  - **San Jose West**
  - 1968
  - 7.5-minute, 24000
  - Photo Revised 1968
  - Aerial Photo Revised 1968
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1961 Source Sheets
- Milpitas 1961, 7.5-minute, 24000, Aerial Photo Revised 1960
- San Jose West 1961, 7.5-minute, 24000, Aerial Photo Revised 1960

1953 Source Sheets
- Milpitas 1953, 7.5-minute, 24000, Aerial Photo Revised 1948
- San Jose West 1953, 7.5-minute, 24000, Aerial Photo Revised 1948

1899 Source Sheets
- San Jose 1899, 15-minute, 62500

1897 Source Sheets
- San Jose 1897, 15-minute, 62500
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1889 Source Sheets

San Jose
1889
15-minute, 62500
This report includes information from the following map sheet(s).

TP, San Jose West, 2012, 7.5-minute
N, Milpitas, 2012, 7.5-minute
This report includes information from the following map sheet(s).

- TP, San Jose West, 1980, 7.5-minute
- N, Milpitas, 1980, 7.5-minute

SITE NAME: 601-711 Walsh Avenue
ADDRESS: 601-711 Walsh Avenue
Santa Clara, CA 95050
CLIENT: Rosso Environmental, Inc.
This report includes information from the following map sheet(s).

- TP, San Jose West, 1973, 7.5-minute
- N, Milpitas, 1973, 7.5-minute

SITE NAME: 601-711 Walsh Avenue
ADDRESS: 601-711 Walsh Avenue
Santa Clara, CA 95050
CLIENT: Rosso Environmental, Inc.
This report includes information from the following map sheet(s).

TP, San Jose West, 1968, 7.5-minute
N, Milpitas, 1968, 7.5-minute

SITE NAME: 601-711 Walsh Avenue
ADDRESS: 601-711 Walsh Avenue
Santa Clara, CA 95050

CLIENT: Rosso Environmental, Inc.
This report includes information from the following map sheet(s).

TP, San Jose West, 1961, 7.5-minute
N, Milpitas, 1961, 7.5-minute

SITE NAME: 601-711 Walsh Avenue
ADDRESS: 601-711 Walsh Avenue
Santa Clara, CA 95050
CLIENT: Rosso Environmental, Inc.
This report includes information from the following map sheet(s).

TP, San Jose West, 1953, 7.5-minute
N, Milpitas, 1953, 7.5-minute

SITE NAME: 601-711 Walsh Avenue
ADDRESS: 601-711 Walsh Avenue
Santa Clara, CA 95050

CLIENT: Rosso Environmental, Inc.
This report includes information from the following map sheet(s).

TP, San Jose, 1899, 15-minute

0 Miles 0.25 0.5 1 1.5

SITE NAME: 601-711 Walsh Avenue
ADDRESS: 601-711 Walsh Avenue
Santa Clara, CA 95050
CLIENT: Rosso Environmental, Inc.
This report includes information from the following map sheet(s).

SITE NAME: 601-711 Walsh Avenue
ADDRESS: 601-711 Walsh Avenue
Santa Clara, CA 95050
CLIENT: Rosso Environmental, Inc.
This report includes information from the following map sheet(s).

SITE NAME: 601-711 Walsh Avenue
ADDRESS: 601-711 Walsh Avenue
Santa Clara, CA 95050
CLIENT: Rosso Environmental, Inc.
**Refinance Chart**

<table>
<thead>
<tr>
<th>Plant</th>
<th>Function</th>
<th>Calculation</th>
<th>Proposed Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Drought Tolerant Planting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Shade Plants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Ornamental Grasses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Screening and Shaping</td>
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<td></td>
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</tr>
</tbody>
</table>

**Not for Construction**

**LANDAN**

**L-201 - Landscape Plan**

**DLR 651 Walsh Santa Clara Phase 2A - Core & Shell**

**Bldg. No:**

**Project No.:**

**Dwg. Title:**

**No. Date:**

**770656701**

**770656701**

**INuestos:**

**LANDAN**

**Construction Documents**

**NOT FOR CONSTRUCTION**

**LANDAN**

**L-201 - Landscape Plan**

**DLR 651 Walsh Santa Clara Phase 2A - Core & Shell**

**Bldg. No.:**

**Project No.:**

**Dwg. Title:**

**No. Date:**
APPENDIX PDDR-31

SVP Typical Transmission Pole Configurations
FULL LENGTH ANCHOR BOLTS REFER TO NOTE 2

ELEVATION
(Looking toward Interior Bisector)
Str. Par-Ken 1 shown, Str. Mat-Par 4 similar
Refer to Note 3

SECTION
PLAN VIEW, STR. PAR-KEN 1
Bundled 715 KCM
24/7 ACCR "STIL" TO PARKER SUB

SECTION
PLAN VIEW, STR. MAT-PAR 4
Bundled 715 KCM
24/7 ACCR "STIL" TO PARKER SUB

Notes:
1. Distance and direction of rake shall be as shown in the structure table.
2. Refer to drawing PSI-B-T003-1 for foundation details.
3. For both Str. Par-Ken 1 and Mat-Par 4, the lower conductor at each phase level is oriented toward Parker Sub.
APPENDIX PDDR-34

One-Line Diagram of Laurelwood Substation

Which Will Serve The WDC
APPENDIX PDDR-43

SVP Responses Filed in Laurelwood SPPE
have two 115/60kV transformers for redundancy and reliability. This arrangement allows for a high reliability electrical system.

The 60kV loop is designed to maintain power to all customers when any line on the loop is out of service due to either maintenance or an unplanned outage. Each Receiving Station on the loop ends, SRS and KRS, is capable of delivering power to the entire loop. The full redundancy design of the system allows any line segment on the loop to be taken out of service for regular maintenance activities without causing a service interruption to any customers. Additionally, the protection systems on the loop are designed to detect fault conditions and isolate the fault to a single line segment. The isolation of the fault allows for continuous service for all customers during fault conditions.

As discussed above, the Laurelwood substation will have three 30/40/50 MVA transformers. The maximum load being requested by the customer is 100 MVA. With 150MVA of transformers, one transformer can be removed from service for maintenance and the load can be provided by the remaining two transformers.

See attached SVP Network Diagram 8-2-19.

2. Please provide a description of the SVP system in general and the other 60 kV loops that would serve data centers.
   a. Could you provide a one-line diagram and a "*.shp" file of the 60 kV and above lines serving the Silicon Valley Power System? Would you have any concerns with us using either of these in a public document?

   See Attached Diagram SVP CA Energy Map 8-2-19 and the SVP Network Diagram

   b. Are each of the 60 kV loops designed similarly or do some of them have features that make them more or less reliable than the others?

   They are all designed similarly with the same redundancy/reliability philosophy.

3. Please describe any outages or service interruptions on the 60 kV systems that will serve the proposed data centers:
   a. How many 60 kV double looped lines serve data centers in SVP, and how many data centers are on each?

   The City currently has five 60kV Loops. They are as follows:
   - East Loop
   - Northeast Loop
   - Northwest Loop
   - Center Loop
   - South Loop
Customer location per loop is provided in Question 1 d. above.

The City is currently in design phase of expanding the East Loop to shift load from the South Loop to East Loop and expand system capacity. The East Loop and South Loop will continue to maintain double looped lines serving each substation both before and after completion of this project. This project is expected to be completed by January of 2021.

b. What is the frequency of 60 kV double-looped lines having a “double outage” that would require use of backup generators?

Extremely Rare. There was only one outage between years 2009 current 2019 where SVP lost both 60kV feeds into a substation. The total duration of the outage was 7 hours and 23 min for the outage that occurred on May 28th, 2016 at 9:28 PM.

A balloon released by an individual made contact with the 60kV line between the Northwestern Substation (NWN) and the Zeno Substation (ZEN) at pole NWZ4. The balloon contact caused a pole fire and the bottom phase, bottom insulator and guy wire burned. The circuit breaker at ZEN substation tripped properly, isolating the fault from the ZEN substation and keeping the line from the ZEN substation to the Kiefer Receiving Station energized.

However, on the NWN Substation side, the circuit breaker failed to trip due to a faulty direct current (DC) voltage source which is required for the breaker tripping coil.

Once this breaker failed to open, due to the directional nature of the fault, the fault was picked up at the Scott Receiving Station (SRS) which caused the section of the loop from the ZEN to SRS to be without power. This included the NWN Substation and the Fairview (FVR) substation. Since this was an unusual event, SVP spent the required time determining the root cause and inspecting the system prior to re-energization.

c. How long were any outages and what were their causes?

60kV outage data since 2009 is in the below chart (10 years of data). The items highlighted in yellow indicate that there was some kind of fault associated with the outage. The items highlighted in blue is when we had customers out of power as a result. The non-highlighted items are where an outage was taken to correct an observed situation.

From 2009 through current 2019 there have been:
1. 15-60kV impacted outages due to faults.
2. 4-60 kV impacted outages that caused customers to be out of power. Only the 12/2/16 outage and 5/28/16 involved data centers.
3. 31-60kV total outages
4. The average 60kv outage lasts for 2.75 hours

<table>
<thead>
<tr>
<th>Date</th>
<th>Line(s)</th>
<th>Cause</th>
<th>Duration</th>
<th>Customers out of power</th>
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<tbody>
<tr>
<td>3/30/19</td>
<td>URA-WAL</td>
<td>Bird @ UW43</td>
<td>1 Hour 46 Min</td>
<td>0</td>
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<tr>
<td>11/22/18</td>
<td>HOM-SER</td>
<td>Pole Fire HS9 (force out)</td>
<td>1 Hour 27 Min</td>
<td>0</td>
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<tr>
<td>7/5/18</td>
<td>SER-HOM</td>
<td>Force out to remove balloons</td>
<td>9 Min</td>
<td>0</td>
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<tr>
<td>5/5/18</td>
<td>SER-HOM</td>
<td>Force out to remove balloons</td>
<td>11 Min</td>
<td>0</td>
</tr>
<tr>
<td>9/1/17</td>
<td>AGN-NAJ</td>
<td>Force out to cut trees</td>
<td>1 hour 5 min</td>
<td>0</td>
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<td>8/8/17</td>
<td>URA-ZEN</td>
<td>Force out to remove balloons</td>
<td>20 Min</td>
<td>0</td>
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<tr>
<td>5/25/17</td>
<td>SRS-FRV</td>
<td>Tripped during SCADA commissioning</td>
<td>1 Min</td>
<td>0</td>
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<tr>
<td>5/8/17</td>
<td>NWN-ZEN</td>
<td>Force out to remove bird</td>
<td>50 Min</td>
<td>0</td>
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<td>4/29/17</td>
<td>SRS-HOM</td>
<td>Force out to remove balloons</td>
<td>2 hours 22 min</td>
<td>0</td>
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<tr>
<td>03/20/17</td>
<td>JUL-CEN</td>
<td>Third Party got into 60kV</td>
<td>9 hours 55 min</td>
<td>0</td>
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<tr>
<td>01/22/17</td>
<td>SER-BRO</td>
<td>Tree in wires</td>
<td>3 hours 31 min</td>
<td>0</td>
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<tr>
<td>01/22/17</td>
<td>NAJ-PLM</td>
<td>A phase contact guy wire when winds pick up</td>
<td>1 hour 47 min</td>
<td>0</td>
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<tr>
<td>01/19/17</td>
<td>KRS-PLM</td>
<td>Palm frond between phases</td>
<td>41 min</td>
<td>0</td>
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<td>01/18/17</td>
<td>NAJ-PLM</td>
<td>A phase contact guy wire when winds pick up</td>
<td>1 Hour 44 min</td>
<td>0</td>
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<tr>
<td>12/02/16</td>
<td>RAY TI &amp; T2</td>
<td>Dropped both transformers during restoration switching due to relay not reset</td>
<td>12 minutes</td>
<td>257</td>
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<tr>
<td>09/06/16</td>
<td>SRS-CEN</td>
<td>Bird Contact</td>
<td>40 Min</td>
<td>0</td>
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<tr>
<td>06/30/16</td>
<td>WAL-FIB</td>
<td>Bird nest contact</td>
<td>12 hours and 4 min</td>
<td>0</td>
</tr>
<tr>
<td>5/28/16</td>
<td>SRS-FRV-NWN</td>
<td>Balloons in line and</td>
<td>7 hours 23 min</td>
<td>28</td>
</tr>
<tr>
<td>Date</td>
<td>Location</td>
<td>Cause</td>
<td>Duration</td>
<td>Impact</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>--------------------------------------------</td>
<td>------------</td>
<td>--------</td>
</tr>
<tr>
<td>02/17/16</td>
<td>SRS-FRV</td>
<td>Palm tree with fire</td>
<td>7 hours</td>
<td>0</td>
</tr>
<tr>
<td>11/18/15</td>
<td>SER-BRO</td>
<td>Arcing wires forced</td>
<td>2 hours 59 min</td>
<td>0</td>
</tr>
<tr>
<td>11/16/15</td>
<td>SER-BRO</td>
<td>Rotten Pole forced</td>
<td>22 hours 32 min</td>
<td>0</td>
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<tr>
<td>11/09/15</td>
<td>JUL CB32</td>
<td>Possible lightning</td>
<td>53 min</td>
<td>0</td>
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<tr>
<td>10/29/15</td>
<td>SER-BRO</td>
<td>Roller arcing-forced</td>
<td>3 hours 33 min</td>
<td>0</td>
</tr>
<tr>
<td>08/12/15</td>
<td>BRO-DCJ, BRO T1</td>
<td>Squirrel on CB100</td>
<td>3 hours 55 min</td>
<td>2155</td>
</tr>
<tr>
<td>06/24/15</td>
<td>CCA CB22</td>
<td>Bad MUX card</td>
<td>3 hours 23 min</td>
<td>0</td>
</tr>
<tr>
<td>05/30/15</td>
<td>SER-BRO</td>
<td>No cause found</td>
<td>3 hours 12 min</td>
<td>0</td>
</tr>
<tr>
<td>03/31/15</td>
<td>BRO-DCJ 12KV BUS 1 &amp; 2</td>
<td>Squirrel across 12kv bus tie</td>
<td>3 hours 26 min</td>
<td>2927</td>
</tr>
<tr>
<td>01/28/15</td>
<td>Mission CB12</td>
<td>Shorted control cable</td>
<td>6 hours 29 min</td>
<td>0</td>
</tr>
<tr>
<td>04/24/14</td>
<td>DCJ CB42</td>
<td>Tripped during relay work. BF wired as TT</td>
<td>1 Hour 30 Min</td>
<td>0</td>
</tr>
<tr>
<td>10/14/13</td>
<td>URA_WAL</td>
<td>Sheared Hydrant hit 60kV above</td>
<td>2 hours 26 min</td>
<td>0</td>
</tr>
<tr>
<td>12/06/12</td>
<td>Jul CB 32</td>
<td>Tripped due to cabinet vibration</td>
<td>2 min</td>
<td>0</td>
</tr>
</tbody>
</table>

d. Have there been any changes to the SVP system that would prevent these types of outages from occurring in the future?

Every outage is analyzed for root cause. Most of the outages that occur on the 60kV system are outside SVP's control, e.g. Mylar balloon, squirrels or animals, car accidents, and similar events. If the outage is suspected to be caused by a failure of the intended protection scheme or equipment, then further analysis is performed and appropriate changes are implemented to minimize impact of future outages. After the outage in May, 2016, SVP performed additional circuit breaker testing and DC wire checks to maintain the reliability of its system.

e. Given the large number of data centers with backup generators being developed in the SVP service area, would future outages likely affect more than one data center or are there elements of the SVP system design that might limit the impact of transmission outages?

Adding more data centers on the 60kV looped system would not make it more or less likely that an outage will occur. A “double outage,” which has occurred only once in the last ten years, has the potential to cause multiple data centers to go to back up generators depending on the locations of both line segments that are out of service.
August 2, 2019-City of Santa Clara/Silicon Valley Power

f. Are there data center customers served by SVP (ie, legacy data centers) that are not on the 60kV loops? How are they served and what are the expected service outage types and rates?

No, ALL data center customers are inherently part of our 60kV loop. The voltage level these data center customers are on our 12kV distribution system, which power is provided from our 60kV substations.

4. During the proceeding for the McClaren Backup Generating Facility, the project owner described a 5/29/2016 outage at their Vantage Santa Clara Campus. The project owner provided information that six backup generators operated during that outage; of those, two operated for 7 hours while four others operated approximately 19 hours.
   a. What was the reason for the outage?

   Balloons made contact with the NWN-ZEN 60kV Line at Pole NWZ4. Original fault was A Phase and GRD due to contact with the Guy wire. NWN CB 32 failed to trip due to a bad DC power source to the breaker trip coil. FRV CB12 tripped as a result of NWN CB32 not tripping. FRV CB42 and SRS CB572 also tripped due to 3 phase differential fault that occurred which is believed to have been caused by the amount of time the A phase and ground fault lasted.

   b. How long did it last for the Vantage customer? For other customers on that loop?

   The outage occurred on 5/28/2019 at 2128. On 5/29/19 @ 0429- Fairview was restored, @ 0434 NWN 60kV bus restored. The system outage was 7 hours and 23 minutes. We are not privileged to the information as to why the data center may have chosen to continue to operate on their back-up generators.

   c. Is the anything about the location or interconnection of the proposed data centers that protect against a similar outage?

   No difference with this location.

   d. Does this description of one recent outage at the MECP1 Santa Clara 1, LLC seem to be a reasonable description of the event and applicable for the Laurelwood Data Center?

   The description of the Vantage event is reasonable, however cannot be directly applied to the Laurelwood Data Center. The Vantage event had a unique combination of contributing factors for which the resulting outcome cannot be reasonably assumed to be the expected outcome for line faults on the SVP 60kV network.
5. Pacific Gas and Electric Company and other utilities have developed Public Safety Power Shutoff protocols that could disconnect electrical services during periods of concern in order to prevent their equipment from starting wildfires. These potential shutoffs could last hours or even days. How would these new protocols potentially affect SVP’s service territory or access to bulk transmission assets?

The City of Santa Clara’s SVP is not located in a California Public Utilities Commission/Cal Fire Tier 2 or Tier 3 high fire risk zone. Therefore, SVP does not have a Public Safety Power Shutoff as part of their Wildfire Mitigation Plan. However, we do receive power from PG&E through six interconnection points. Based on our discussion with PG&E, Santa Clara may be requested by PG&E or the California Independent System Operator (CAISO) to curtail load. This request may be because of the reduced capacity somewhere within the system which will require overall system load reduction. This experience may be similar to the energy crisis of the early 2000’s when rolling blackouts were require to maintain electric grid reliability. SVP has the capability to provide 200 MW of generation in the City with its Donald Von Raesfeld Combined Cycle Power Plant (147 MW) and the Gianera Peaker Plant (49 MW) and Cogen Facility (6 MW), we may be requested to curtail load.

SVP is working with PG&E and the CAISO as to how this situation may occur.
<table>
<thead>
<tr>
<th>Substation</th>
<th>Loop</th>
<th>Customer/Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairview</td>
<td>Center</td>
<td>Mfg1</td>
</tr>
<tr>
<td>Fairview</td>
<td></td>
<td>Datacenter1</td>
</tr>
<tr>
<td>Fairview</td>
<td></td>
<td>Datacenter2</td>
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<td>Fairview</td>
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### Center 141MW
- **East Loop**: 1SMW 65MW
- **North Loop**: 28MW 112MW
- **South Loop**: 65MW

### Datacenter
- **16**: Security
- **Government**: 3
- **Datacenter**: 1
- **Property Management**: 3
- **Education**: 1
- **Gaming/AI/Semiconductors**: 4
- **Real Estate**: 3
- **Entertainment**: 1
- **NFL**: 2
- **Mfg**: 2
- **Design**: 1
- **Cyber Security**: 1
- **Real Estate**: 6
- **Education**: 19
- **Medical**: 12
- **Healthcare equipment**: Mfg12
- **Datacenter**: 24
- **R&D**: 2
- **Medical**: 3
- **Medicare**: Datacenter36
- **Datacenter**: 37
- **Semiconductor/Telecommunications**: Education10
- **Gaming/AI/Semiconductors**: Education12
- **Computer hardware/software**: Education23
- **Government**: 1
- **Government**: 2
- **Semiconductor**: 2
- **Datacenter**: 31
- **Mfg**: 9
- **Telecommunications**: 3
- **Datacenter**: 33
- **Datacenter**: 13
- **Datacenter**: 14
- **Education**: 7
- **Software**: 1
- **Bio Tech**: 1
- **Semiconductor/Telecommunications**: 3
- **Semiconductor/R&D/Mfg**: 5
- **Mfg**: 7
- **Network hardware**: Medical4
- **Conventions**: 1
- **Gaming/AI/Semiconductors**: Conventions1
- **Education**: 10
- **Biotech**: Computer hardware/software
- **Education**: 1
- **Education**: 2
- **Education**: 3
- **Datacenter**: 27
- **Datacenter**: 26
- **Education**: 21
- **Education**: 20
- **Entertainment**: 3
- **Healthcare**: Medical
- **Datacenter**: 25
- **Datacenter**: 2
- **Real Estate**: 1
- **Medical**: 4
- **Datacenter**: 5
- **Datacenter**: 15
- **Education**: 18
- **Datacenter**: 16
- **Datacenter**: 3
- **Education**: 17
- **Mfg**: 10
- **Datacenter**: 19
- **Semiconductor**: Telecommunications2
- **Datacenter**: NFL1
- **Datacenter**: 34
- **Datacenter**: 35
- **Datacenter**: 20
- **Datacenter**: 21
- **Education**: 16
- **Education**: 15
- **Education**: 14
- **Entertainment**: R&D1
- **Mfg**: 3
- **Datacenter**: 18
- **Datacenter**: 17
- **Property Management**: 7
- **Education**: 22
- **Mfg**: 4
- **Mfg**: 5
- **Datacenter**: 23
- **Datacenter**: 11
- **Datacenter**: 12
- **Medical**: 5
- **Property Management**: 6
- **Software**: Education26
- **Cyber Security**: 2
- **Real Estate**: 7
- **Education**: NFL2
- **Computer hardware/software**: NFL3
- **Computer hardware/software**: NFL4
- **Education**: 2
- **Education**: 9
- **Cyber Security**: 3
- **Datacenter**: 38
- **Computers**
Mark, outlined below are the responses to your Monday, August 5th questions.

Please let us know if you have additional questions.
Thank you,
Kevin Kolnowski
Electric Utility Chief Operating Officer

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1. The Aug 2 response talks about the May 28/29, 2016 outage and the 28 customers that lost power. The table of outages in their response seems to list outages that affected 60kV customers, and these customers appear to be data centers customers and other, non-data center customers. Does SVP know how many of the 28 customers referred to on the May 28, 2016 entry were data centers? Two Data Centers were affected.

2. The Aug 2 response talks about a Dec 2, 2016 outage and the 257 customers that lost power. The table of outages in their response seems to list outage that affected 60kV customers, and these customers appear to be data centers customers and other, non-data center customers. Does SVP know how many of the 257 referred to on the Dec 2, 2016 entry were data centers? Four Data Centers were affected.

3. The Aug 2 response talks about a Dec 2, 2016 outage and the 257 customers that lost power. Can we get more information about this outage? Was it also an N-1-1 cascade like the series of faults that caused the May 28/29, 2016 outage? Why did we not hear about this outage earlier - was it different that the May 2016 outage (eg, internal faults versus an external fault like a balloon or squirrel)? This outage was caused during maintenance work with the Relay Technician. During the testing, the relay was required to be reset prior to returning to service. Since the relay was not reset, when put back into service the device tripped. The Standard Operating Procedure was revised to include the step of resetting the relay prior to placing back into service. This was not a N-1-1 cascading type outage. The outage lasted 12 minutes.
4. The Aug 2 response has a table of 60kV outages. Just to confirm, only the Dec 2 and May 28, 2016 outages affected data centers. So, for example, none of the 2927 customers affected by Mar 31, 2015 outage were data centers - is that correct? Correct, no data centers were affected during March 31, 2015 outage.

5. Also, it sounds like some data center customers are connected to 12kV feeds, but these feeds are connected to the dual feed 60kV loops that are highly reliable. Is this correct, and how many customers might be on a 12kV line that comes off a 60kV loop? And how is reliability maintained on the 12kV line - looping, breakers and redundant equipment - like the 60kV loops? Yes, this is correct. The electric services that supply power to our 12kV data center customers are from our general 60kV distribution substations, which is inherently connected to our 60kV looped system. The number of customers that are off a 12kV feeder (line) is limited to SVP's operational loading philosophy, which is 4.5MVA or 50% of the maximum 9MVA. Said in another way, we can have as few as one customer or as many as one-hundred on a feeder, as long as the entire load is less than 4.5MVA. To address reliability, by operating our 12kV feeders at half-loaded, SVP has operational flexibility to completely transfer loads to other 12kV feeders in the event of an outage. SVP may make an operational determination to limit a feeder to one data center customer, but at this time is not contractually obligated to provide as such.

6. The Aug 2 response has a 4.d. response regarding how the Vantage MECP1 data center responded to the May 28/29, 2016 SVP outage that said "[t]he description of the Vantage event is reasonable, however cannot be directly applied to the Laurelwood Data Center. The Vantage event had a unique combination of contributing factors for which the resulting outcome cannot be reasonably assumed to be the expected outcome for line faults on the SVP 60kV network." Do you have more information on what were the "contributing factors", and why should we not assume that other data centers would have similar "expected outcomes"? As discussed in the 8/2/19 document, had the DC voltage supply cable not had an issue, a similar event would have been contained. Our anticipation, an outage in the future the protection system would operate as expected.

7. Regarding the Aug 2 response to PG&E’s PSPS plans, could SVP curtailments ever allow a data center to operate under emergency conditions? To date this has not happened, the decision to operate during this situation would be by the data center. Our understanding is during emergency situation, individuals can operate their emergency generators.

Are SVP curtailments to PSPS conditions voluntary or emergency conditions? We understand that diesel emergency gensets cannot operate for economic reasons, only in response to an unplanned emergency or upset on their supply grid. We will be instructed to reduce load to respond to emergency conditions somewhere within the CAISO controlled grid, we have to follow what the CAISO directs us to do. The CAISO instructions are not voluntary. We would request customers to reduce load to satisfy the emergency condition and if that is not sufficient we will begin shutdown of our customers to meet the emergency situation. We would be operating at the direction of the CAISO.

8. Are there any plans that part of the PSPS program might include payments to some loads to curtail or shed? SVP does not have a plan to pay a data center to shed or curtail load.
9. Would the 6 interconnection points with the PG&E system allow SVP/PG&E to wheel bulk deliveries around potential shutdowns on the PG&E system? In other words, is the current understanding of the PSPS program that most shutdown will be in specific areas and not across the greater PG&E system, and that would allow PG&E to work around an area that would be fully shutdown? The understanding is if the conditions are such where transmission has to be curtailed, the CAISO will require load reductions of the CAISO controlled grid, similar to the energy crisis from the early 2000's. SVP will request voluntary reductions to meet the CAISO demand or will make switching changes which to remove blocks of customers load. It will depend how much reductions the CAISO will be instructing us to reduce, voluntary load shedding and customer shutoff.

Matt

Mark Hesters
California Energy Commission
(916)654-5049