SUMMER 2020 MEETING: REGION 9 TRIBAL CAUCUS

Public Safety Power Shutoffs
August 13, 2020
What is a PSPS?

• Public Safety Power Shutoff
  • A Confluence of:
    • High Temperatures
    • Extreme Dryness (Air and Fuels)
    • Record-high winds

• Resulted from 2017, 18 Wildfires
• 2019
  • A total of more than 3 million people across California were without power on day in October
  • Largest recorded voluntary power shutdown recorded
Why is this Important?

• PSPS Events will Happen for the Foreseeable Future!
  • Expect Annually

• Possible Questions
  • How will Tribes be Affected?
  • Who was Affected by 2019 PSPS Events?
  • What Can you do as a Water Utility
Introduction

• Jim Wollbrinck, Director of Emergency Management and Business Resiliency

• San Jose Water (SJW) System Overview
  • 140 Mi²
  • 230,000 Service Connections
  • 100 Pressure Zones
  • 300 Pumps, 115 Tanks/Reservoirs

• 38 Permanent (Standby) Generators
• 21 Portable Generators
• 3 Portable Pumps
Preparing for the Outage

- Blue Sky Scenario
- Inspections & PM’s
- Generator Inventory
- Generator Matrix

<table>
<thead>
<tr>
<th>Station</th>
<th>PG&amp;E Rate Sched.</th>
<th>Main Breaker/Well Units</th>
<th>Selected Booster/Mfg.</th>
<th>Motor Information</th>
<th>Automatic Transfer Switch Information</th>
<th>Portable Generator Storage Location</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>B-1</td>
<td>US(SE)</td>
<td></td>
<td>Estimate Number</td>
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sjwater.com
Preparation Continued…

PG&E 48 Hour Notice
• Internal and Customer Notifications
• GIS Mapping
• Documentation & Planning
  • Deployment of Emergency Equipment
  • Fuel Delivery Schedule
  • Staffing Needs
  • Backup Battery Solution
  • All-Hands Meeting with Field Staff
<table>
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<tr>
<th>Station</th>
<th>Type</th>
<th>PG&amp;E Power</th>
<th>Tank Level (ft)</th>
<th>Time</th>
<th>Date</th>
<th>Time Window (hr)</th>
<th>Source</th>
<th>PG&amp;E Power</th>
<th>Standby Gen</th>
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## PSPS Master Spreadsheet

<table>
<thead>
<tr>
<th>Generator Number</th>
<th>License Req.</th>
<th>Deployed?</th>
<th>Location</th>
<th>Fuel Level</th>
<th>Time</th>
<th>Date</th>
<th>Comments</th>
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<tbody>
<tr>
<td>10</td>
<td>A</td>
<td>N</td>
<td>Three Mile</td>
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<tr>
<td>41</td>
<td>A</td>
<td>Y</td>
<td>Pavilion</td>
<td>93%</td>
<td>10:00 AM</td>
<td>10/8/19</td>
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<tr>
<td>42</td>
<td>C</td>
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<td>Locust</td>
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<td>10/8/19</td>
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<tr>
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<td>A</td>
<td>N</td>
<td>Will Wool</td>
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<td>10/8/19</td>
<td>brakes don't work</td>
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<td>Congress Junction</td>
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<tr>
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<td>Bascom</td>
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<td>10/8/19</td>
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<tr>
<td>59</td>
<td>C</td>
<td>N</td>
<td>Mercedes</td>
<td>72%</td>
<td>10:00 AM</td>
<td>10/8/19</td>
<td></td>
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<td>60</td>
<td>C</td>
<td>Y</td>
<td>Holy City</td>
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<td>10/8/19</td>
<td>boot keys are in generator</td>
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<td>Mountain Springs</td>
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<td>5:00 PM</td>
<td>10/8/19</td>
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<td>62</td>
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<td>Miguelito</td>
<td>85%</td>
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<td>10/8/19</td>
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<tr>
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<td>C</td>
<td>Y</td>
<td>Hill</td>
<td>72%</td>
<td>5:00 PM</td>
<td>10/8/19</td>
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<tr>
<td>64</td>
<td>C</td>
<td>Y</td>
<td>Overlook</td>
<td></td>
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</tr>
<tr>
<td>65</td>
<td>C</td>
<td>N</td>
<td>Cox</td>
<td>85%</td>
<td>10:00 AM</td>
<td>10/8/19</td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>C</td>
<td>Y</td>
<td>Saratoga Hills</td>
<td></td>
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<tr>
<td>67</td>
<td>C</td>
<td>Y</td>
<td>Almaden Valley</td>
<td>76%</td>
<td>5:00 PM</td>
<td>10/8/19</td>
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<td>C</td>
<td>Y</td>
<td>Oakmont</td>
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<td>10/8/19</td>
<td>need spare wiring</td>
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<td>C</td>
<td>Y</td>
<td>Glenview</td>
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</table>
Field Photos – Generator Deployment

![Generator Deployment Image 1](image1)
![Generator Deployment Image 2](image2)
![Generator Deployment Image 3](image3)
Field Photos – Equipment Standardization
Backup Battery Solution

9Ah 12V battery provides hours of backup battery power for PLC

55Ah 12V battery provides days of backup battery power for PLC
ALARM status indicating that PLC has lost power (Utility power is lost)

Still able to maintain level for days on 55Ah car battery power (vs. hours on 9Ah UPS backup battery)
During the Outage

71 Critical Facilities Without Power (10/9/19 – 10/11/19)

• Collaboration
  • Meetings with Executive and Field Staff
• Communication
  • Digital Logbook (Slack)
• System Operation
  • Tank and Fuel Level Checks
  • Cloud-Based Monitoring (Samsara)

Tinh Bui 10:54 AM
Alum Rock 1054-station OOC since 0820, RES level at 28.7'

Daniel Bertron 11:00 AM
Summit 11:00am
Generator: 71% fuel
Ps1 system operating normally.

Edmund Heldebrant 11:07 AM
Generator #43 from Elwood transporting to View oak station

Tinh Bui 11:14 AM
Crothers 1113-station OOC since 0820 RES level: 17'

Daniel Bertron 11:35 AM
Locust 11:30am
B1 off, generator off (69% fuel)
Doosan #67 Williams
TRAILER

San José, CA
Oct 11, 2019 11:58 PM

Live Share

Asset Stats
- Cable Status: Tethered (Secondary)
- AG Status: Live
- Battery: Ok

Diagnostics
- Power State: Fully Charged
After the Outage

• Return to Normal Operation
  • Transfer Back to Utility Power
  • Return Generators

• Outcomes
  • Staff Meeting Discussions
  • Corrective Actions (LeanKit)
  • Lessons Learned
SJW Lessons Learned

• Improve Generator PM’s
  ◦ Tow and Exercise
  ◦ Load Bank Testing
  ◦ Flow Test Portable Pumps

• Staff Training
  ◦ Generator Deployment
  ◦ Generator Transfer Switches
  ◦ Correct Equipment

• Leverage Technology
  ◦ Fulcrum
  ◦ Slack
  ◦ Samsara

• Planning and Communication
  ◦ Better to Over-Prepare
  ◦ Continuous Meetings/Updates
Generator Resource Typing: US-EPA and Water Sector at It’s Best!
PSPS: Generators

• Updated EPA Power Resiliency PDF: https://www.epa.gov/communitywaterresilience/power-resilience-guide-water-and-wastewater-utilities

• Updated EPA Power Resiliency PDF Checklist: https://www.epa.gov/waterutilityresponse/incident-action-checklists-water-utilities
PSPS SOP

Public Safety Power Shutoff
Standard Operating Procedure
Template

[Utility Name]
PSPS SOP
PSPS SOP

Introduction

The U.S. Environmental Protection Agency (EPA) developed this Standard Operating Procedure (SOP) template to assist California drinking water and wastewater utilities to better plan, prepare, respond, and recover from a Public Safety Power Shutoff (PSPS) event triggered by weather and environmental conditions that may lead to wildfire. The template covers the following phases of a PSPS event:

- Blue Sky Planning
- 48-Hour PSPS Notification
- Zero Hour Power Out
- 24 Hours Without Power
- Continued Power Outage
- PSPS Recovery

Each phase covers the following topics: generators and backup power, fuel, communication, partnerships, SCADA, staffing, access, and safety. Communication has been further divided into the subtopics of internal (water utility staff), partner (agencies and organizations that provide support to a water utility during a PSPS event), and external (customers and media) communications.
Connect with Your Electric Utility

• PG&E:
tow and Exercise

• SoCal Edison
  • https://www.sce.com/safety/wildfire/psp

• SDG&E
Contact Information

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San Jose Water Company
408-279-7804
Jim.Wollbrinck@sjwater.com