

SUMMER 2020 MEETING: REGION 9 TRIBAL CAUCUS

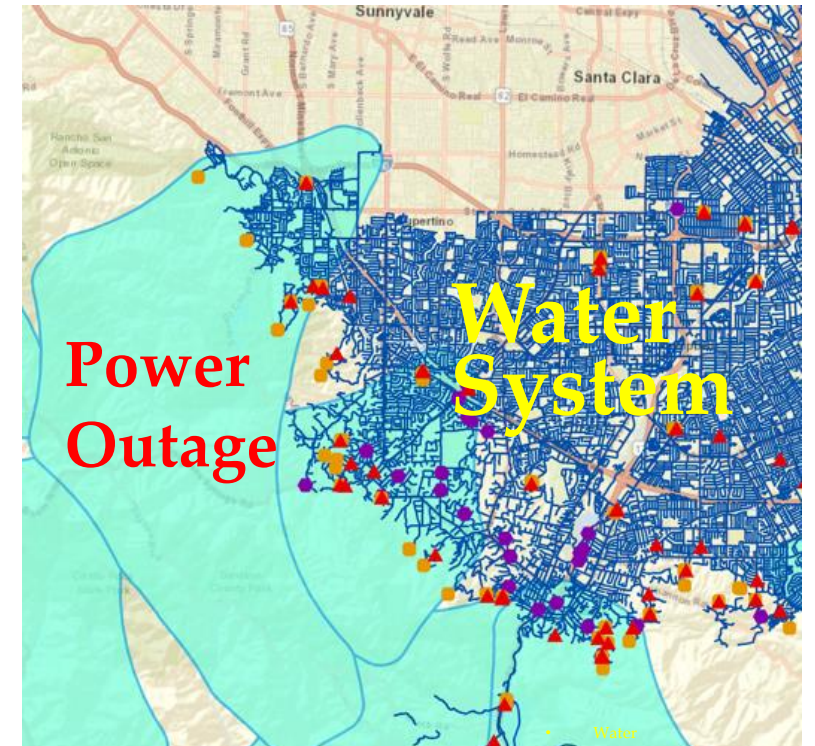
Public Safety Power Shutoffs

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



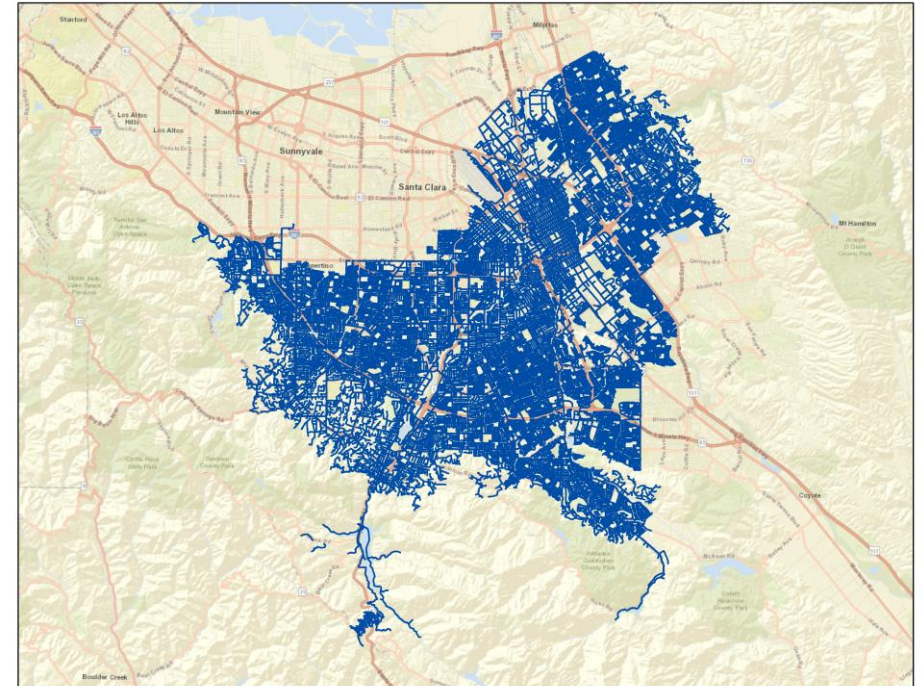
Why is this Important?

- 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



Station	PG&E Rate Sched.	Main Breaker (Amps)	Selected Booster/ Well Units	Motor Information						Automatic Transfer Switch Information						Portable Generator Storage Location			
				Motor Mgf.	HP	Type	Volts	FLA	NEMA Code	Estimate Number	Year Unit Installed	Mgf.	Amps	Pole	Volts	3-Mile #10	3-Mile #70	Will Wool #11	Pavilion #41
Almaden Valley	A6P	225	B-1	US(HE)	75	VHS	460	87	G	E5-070	1995	Generac	400	3	480	ALL	ALL	ALL	ALL
		400	B-2	US	125	VHS	460	145	G										
Alum Rock	A1P	200	B-1	US(HE)	20	VHS	460	23.7	G	E4-070	1994	Generac	200	3	480	ALL	ALL	ALL	ALL
			B-2	US(HE)	20	VHS	460	25.8	G										
Anne Way	A6	200	B-1	Pleuger	75	SUB	460	104		G7-098	2011	Generac	200	3	480	NO	ONE	NO	NO
Azores	A1X	400	B-1	US(HE)	40	VHS	460	45		G3-431	2003	Tesco	400	3	480	ALL	ALL	ALL	ALL
			B-2	US(HE)	40	VHS	460	45											
			B-3	US(HE)	40	VHS	460	45											

Portable Generator?

Standby Generator Name
Bascom

Fuel Level (%)
75




Hour Meter Read i
5235

Battery Inspection i

Top of Fuel Tank Clean i

Fill Box Clean and Empty i

Spill Kit Stocked and Labeled i

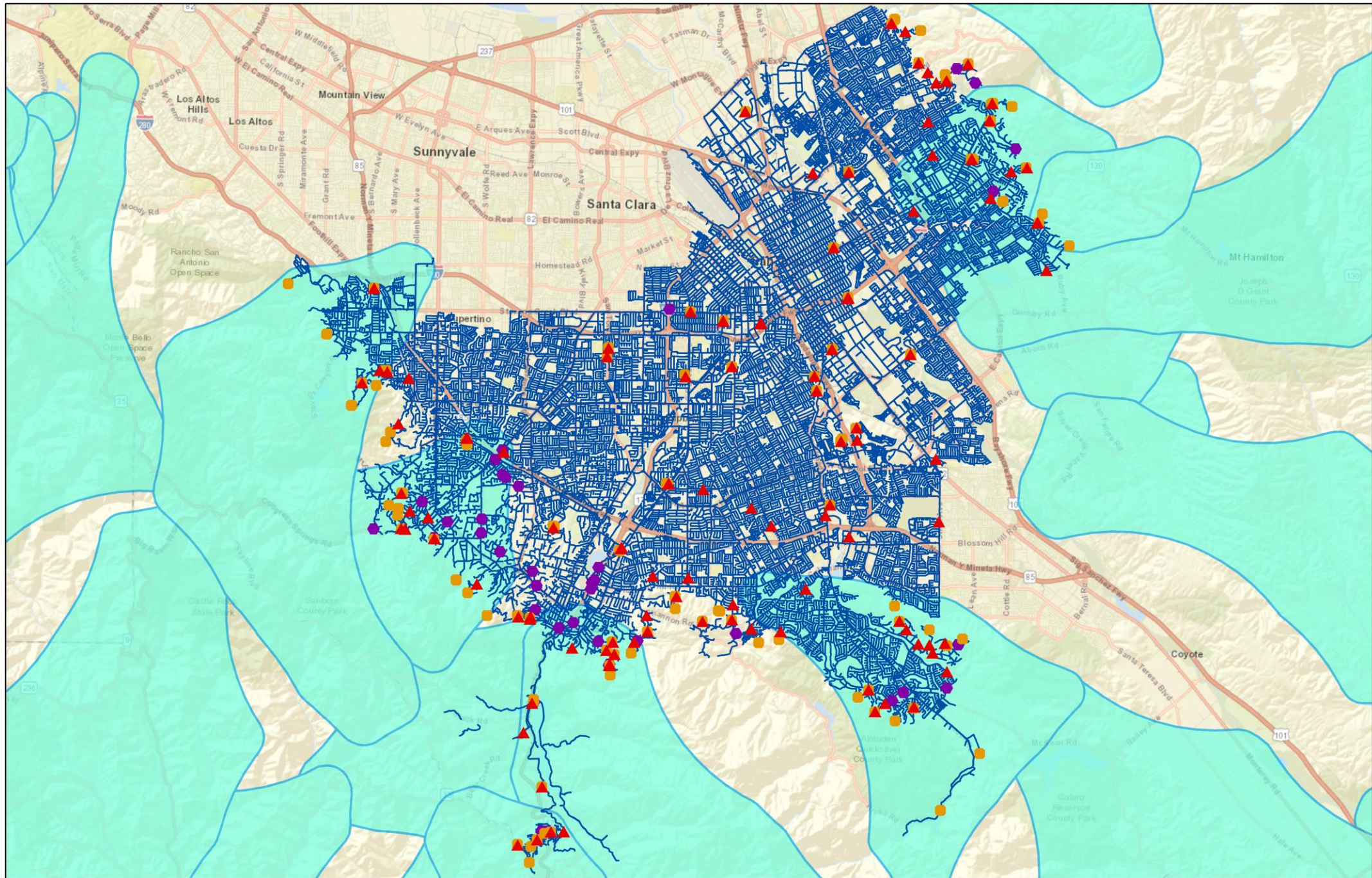
  

Preparation Continued...

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





PSPS Master Spreadsheet

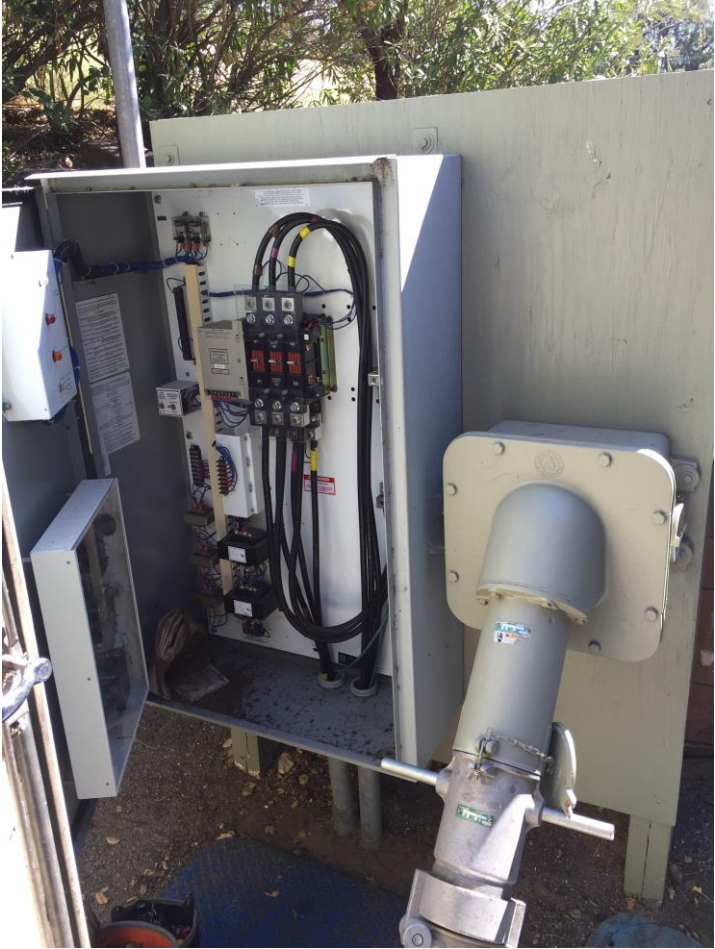
Tank-Only Stations

Station	Tank Information						Source of Supply Information			
	Type	PG&E Power?	Tank Level (ft)	Time	Date	Time Window (hr)	Source	PG&E Power?	Standby Gen?	Fuel Level
Redhill Rd Reservoir	Tank	Y				1.94	Vickery	Y	Y	
Mercedes Road Reservoir	Tank	Y				2.48	Mann	Y	Y	
Pike Road Reservoir	Tank	Y				3.20	Saratoga Hills	Y	N	
Tank Farm Reservoir	Tank	Y				4.17	Summit (Zone)	NA	NA	
Webb Canyon Dr Tank	Tank	Y				7.14	Elwood	Y	N	
Beckwith Road Reservoir	Tank	Y				8.56	Overlook	Y	N	
McKean Reservoir Site	Tank	Y				11.44	Almaden Valley	Y	N	
Pleasant Vista Dr Reservoir	Tank	Y				11.74	Reno	Y	N	
Ravinia Wy Reservoir	Tank	Y				11.90	Teresita	Y	N	
Hickerson Reservoir	Tank	Y				15.22	Columbine (Zone)	NA	NA	
Rainbows End Reservoir	Tank	Y				20.45	Rainbow Pumps	Y	N	
Clayton Rd Reservoir	Tank	Y				25.53	Columbine	Y	Y	
Regnart Heights Reservoir	Tank	Y				25.76	Regnart Canyon	Y	N	
Graystone Heights Reservoir	Tank	Y				27.27	Graystone Pumps	Y	N	
Aztec Ridge Dr Reservoir	Tank	Y				31.11	Cypress	Y	N	
Beatrice Cir Reservoir	Tank	Y				31.33	Locust (Zone)	NA	NA	
Scenic Vista Dr Reservoir	Tank	Y				35.05	View Oaks	Y	N	
Cahalan Reservoir	Tank	Y				36.00	Belgatos (Zone)	NA	NA	
Lumbertown Ln Reservoir	Tank	Y				45.00	Tollgate	Y	N	
Crothers Rd Reservoir	Tank	Y				80.95	Alum Rock	Y	N	

PSPS Master Spreadsheet

Generator Number	License Req.	Initial Status					Comments
		Deployed?	Location	Fuel Level	Time	Date	
10	A	N	Three Mile				
41	A	Y	Pavilion	93%	10:00 AM	10/8/19	
42	C	Y	Locust	102%	10:00 AM	10/8/19	
11	A	N	Will Wool	100%	10:00 AM	10/8/19	brakes don't work
43	C	Y	Elwood	36%	5:00 PM	10/8/19	
53	A	Y	Congress Junction				
58	C	N	Bascom	72%	10:00 AM	10/8/19	
59	C	N	Mercedes	72%	10:00 AM	10/8/19	
60	C	Y	Holy City	59%	5:00 PM	10/8/19	boot keys are in generator
61	C	Y	Mountain Springs	75%	5:00 PM	10/8/19	
62	C	Y	Miguelito	85%	5:00 PM	10/8/19	
63	C	Y	Hill	72%	5:00 PM	10/8/19	
64	C	Y	Overlook				
65	C	N	Cox	85%	10:00 AM	10/8/19	
66	C	Y	Saratoga Hills				
67	C	Y	Almaden Valley	76%	5:00 PM	10/8/19	
68	C	Y	Oakmont	60%	10:00 AM	10/8/19	
69	C	Y	Glenview				need spare wiring

Field Photos – Generator Deployment



Field Photos – Equipment Standardization



Backup Battery Solution

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



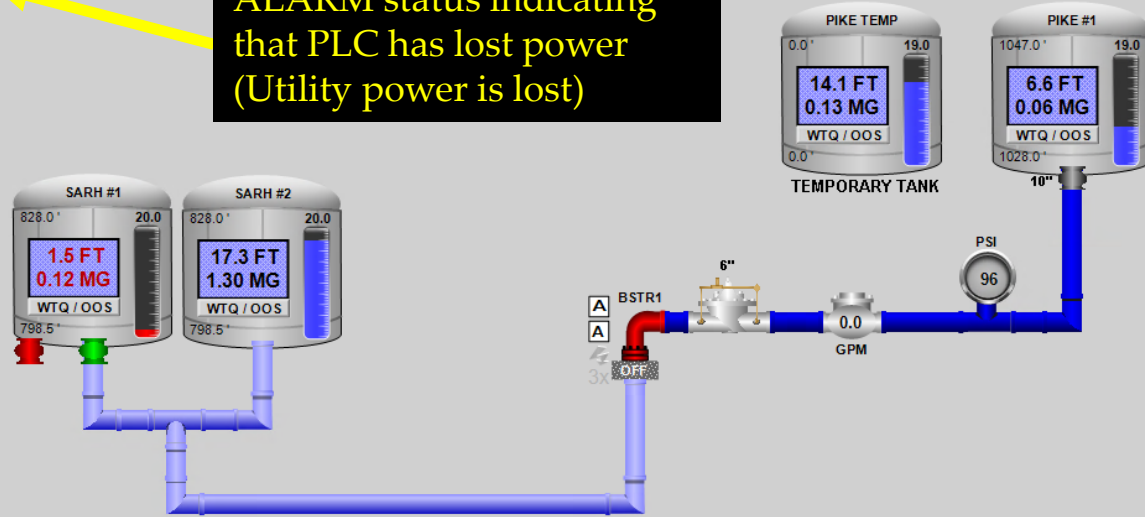
55Ah 12V battery
provides days of backup battery
power for PLC



PIKE STATION

PLC Power Fail: **ALARM**

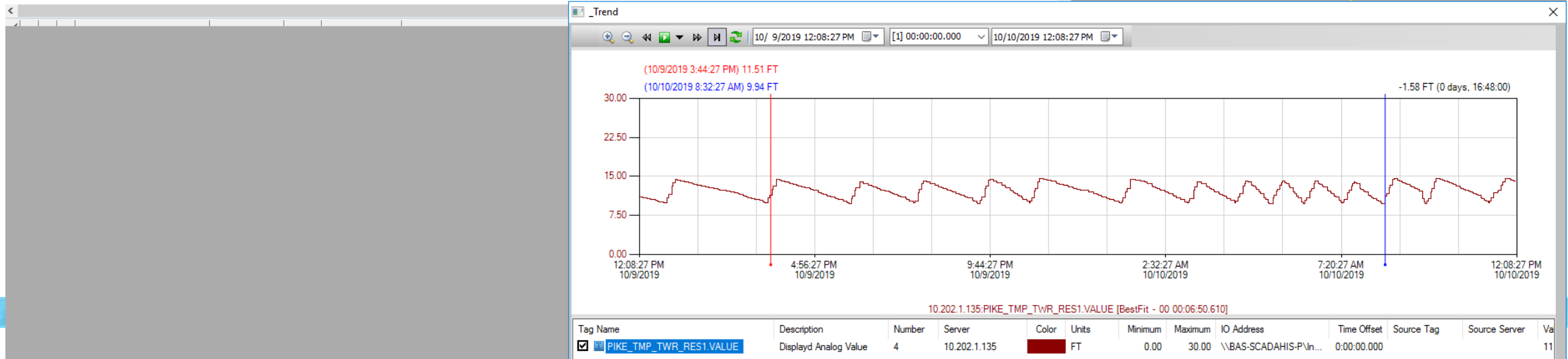
ALARM status indicating that PLC has lost power (Utility power is lost)



PIKE_TWR_SECURE
 ALARM STATUS NORMAL
 SYSTEM STATUS **DISABLED**

Time	AlarmComment	Value	Limit	Operator	Name
10/9/2019 10:43:41 PM	Std ACK -	Failure...	Failure...	faller	PIKE_TWR_STATION.RPF
9/6/2019 1:29:44 PM	Std ACK -	true	true	harris	PIKE_TWR_SS_LFAIL.Active

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

Psi 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)



Back

Graph data

6.0 Days

OCT 6 - OCT 11

Live

Doosan #67 Williams



TRAILER

San José, CA

Oct 11, 2019 11:55 PM

Live Share

Asset Stats

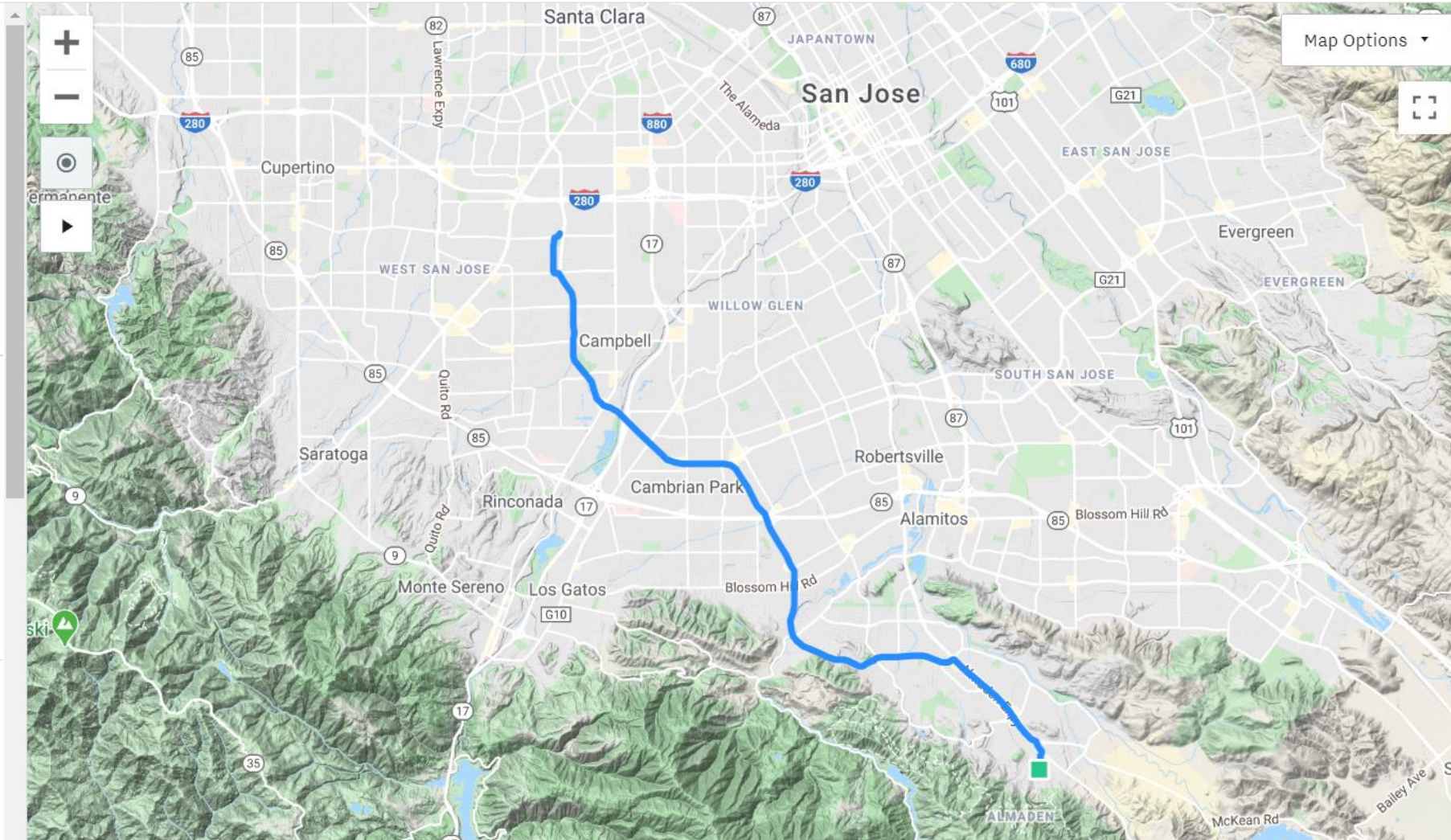
Cable Status: Tethered (Secondary)

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

The screenshot displays a Kanban board titled "PSPS Follow-up Activities" within the Planview Leankit interface. The board is divided into two main sections: "DOING NOW" and "FUTURE WORK".

DOING NOW Section:

- Task 1: "Need plan for scenario where majority of electrical group is unavailable due to call out / rest" (Assignee: CR)
- Task 2: "Some Ops Crews were unsure of whether they were allowed to unplug generator cable" (Assignee: RT)
- Task 3: "Appletons need to be labeled based on voltage rating." (Assignee: CR)
- Task 4: "Need to review portable generator procedure with Operators that covers all" (Assignees: TJ, RT)
- Task 5: "Why such a large generator stationed at Locust? Wouldn't a small (quieter and more fuel efficient)" (Assignees: CR, BC)
- Task 6: "Back up to cellular signal in case cellular network goes down. Jim mentioned Wireless" (Assignee: JW)
- Task 7: "Car battery backup power for PLCs to maintain level at critical sites." (Assignees: CR, BC)
- Task 8: "Samsara generator data accuracy verification." (Assignee: BC)

FUTURE WORK Section:

- Task 9: "Improve on Ops ERP master spreadsheet." (Assignee: BC)
- Task 10: "Station quick reference guide." (Assignee: BC)

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!



Incident Action Checklist – Power Outages

For on-the-go convenience, the actions in this checklist are divided into three "rip & run" sections and are examples of activities that drinking water and wastewater utilities can take to prepare for, respond to and recover from power outages. You can also populate the "My Contacts" sections with critical information that your utility may need during a power outage.

Power Outages and Water Utilities

The loss of electric power can have profound impacts on drinking water and wastewater utilities. Sometimes the loss of power can be caused by events that can be predicted in advance such as hurricanes or ice storms. Other power outages, such as those caused by earthquakes, cyber incidents or space weather may occur with little or no notice. In California, the Public Safety Power Shutoff program allows electric companies to proactively shut off grid power to customers, including water utilities, to reduce fire ignition potential in high fire risk areas when extreme fire risk conditions present a clear and imminent danger to public safety.

The impacts of losing grid power at drinking water and wastewater utilities could result in pressure losses and boil water advisories, a reduction or cessation of water treatment, sewage back up and the discharge of untreated sewage into public right of ways, rivers and streams. The impacts on the community could be devastating:

- The loss of water pressure or service means firefighters cannot access water from hydrants.
- The loss of drinking water and wastewater services could cause local health care facilities and hospitals to evacuate patients or close.
- The loss of water services may cause restaurants and businesses to close, resulting in economic losses.
- The loss of wastewater services could create unsanitary conditions, rendering homes, businesses and healthcare facilities uninhabitable.
- Critical manufacturing and industrial plants and businesses may be forced to shut their doors, creating additional cascading impacts and economic hardships during a prolonged outage.
- There could be significant public health concerns and environmental damages.



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:
 - https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/public-safety-power-shutoff-faq.page Tow and Exercise
- SoCal Edison
 - <https://www.sce.com/safety/wildfire/psps>
- SDG&E
 - <https://www.sdge.com/wildfire-safety/public-safety-power-shutoffs>

Contact Information

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