## **PG&E Emergency Plan Review**

**Electric Operations Emergency Management** 





## Life Safety

- Sign in Sheet
- Evacuation Plan and Assembly Point
- 911 Notification
- CPR Certified
- Earthquake Response



## Objectives

To provide an overview of PG&E's Electric Emergency Response plans and to provide an opportunity for questions and feedback in compliance with Public Utility Code (PUC) 768.6



## Agenda

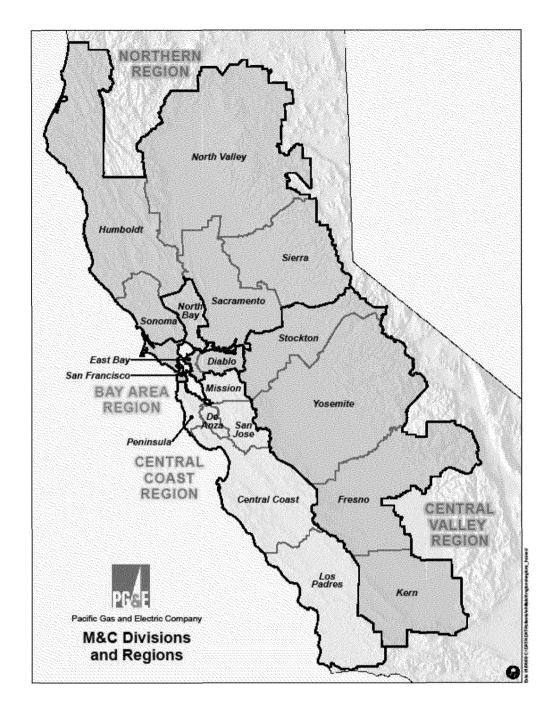
- Welcome and Introductions
- Overview of requirements of PUC 768.6
- PG&E's Electric Emergency Operations Plan
- 2013 Fire Prevention Plan
- Questions



Emergency Preparedness

### PG&E

- 4 Regions, 19 Divisions, 70,000 square miles, 113,000 miles of overhead line
- Electric system is very sensitive to weather
  - 30,000 unplanned power outages per year wind, rain, snow, lightning, heat are primary concerns
  - each division has a unique outage climatology



## Overview of PUC 768.6







**Requires PG&E to:** 

PR&F

- Solicit counties and cities within the service territory for ۲ points of contact (POC) to review all electric emergency plans
- **Provide these POCs with copies of electric emergency** ۲ plans to review
- Hold public meetings with the POCs to obtain feedback ۲ and answer questions about the plans
- Notify the CPUC of the schedule of meetings ۲
- File a report confirming the completion of the scheduled ۲ meetings by April 1<sup>st</sup>
- Complete this process every 2 years ۲
- Requires the CPUC to update General Order (GO) 166 ۲



- Initiated request for the POC's from all city and counties within the service territory
- Sent electronic copies of EEOP and Fire Prevention Plans (with minor redactions)
- Scheduled 8 public meetings to be held throughout the service territory:

Date	Place	Hotel	Hotel Street	City	Time
Thursday, 2/28	San Ramon	San Ramon Marriott	2600 Bishop Ranch Dr	San Ramon	0900-1200
Tuesday, 3/5	Santa Rosa	Santa Rosa Courtyard	175 Railroad Street	Santa Rosa	0900-1200
Thursday, 3/7	Salinas	Holiday Inn Express	195 Kern Street	Salinas	0900-1200
Tuesday, 3/12	Fresno	LM-Holiday Inn	1055 Van Ness Ave	Fresno	0900-1200
Thursday, 3/14	Bakersfield	Hilton Garden Inn	3625 Marriott Dr	Bakersfield	0900-1200
Thursday, 3/14	Sacramento	Red Lion Woodlake	500 Leisure Lane	Sacramento	0900-1200
Tuesday, 3/19	SLO	Courtyard SLO	1605 Calle Joaquin	San Luis Obispo	0900-1200
Tuesday, 3/19	Redding	Red Lion	1830 Hilltop Dr	Redding	0900-1200

- Meetings are held in public venues to facilitate access
- Meeting schedule and confirmation of the completion must be communicated to the CPUC by 4/1/2013

# **Operation Plan**





## **Electric Emergency Operations Plan**

- **1 Emergency Operations Plan Overview**
- **2 Emergency Plan Activation**
- **3 Emergency Management Organization (EMO)**
- **4 Emergency Response Process** 
  - 4.1 Readiness
  - 4.2 Pre-Event
  - 4.3 Assessment, Restoration and 911 Emergency Response
  - 4.4 Resource Management Process
- **5** Communications
- 6 Performance Indicators
- 7 Training and Exercises
- 8 After-Action Reports, Event Logs and Records
- 9 OIS/OMT Workaround Process



- Protect health and welfare of the public, PG&E responders and other response personnel
- Protect property (both the public and utility)
- Safely restore gas and electricity
- Keep customers, local/state agencies, government reps, news media, and others informed
- Re-establish critical business functions and move towards business as usual.



## **PG&E's Emergency Levels**

		Activation Matrix	
	Level 1	Level 2	Level 3
Description	Local Incident Day to Day	OEC/REC Activation	EOC Activation
Incident	Local Incidents	Division/Region Wide Incident	Multiple Divisions/Region wide Incidents and High Profile Events
		Requires resources beyond routine 24/7 operations	Major storms, wildfire, flooding, earthquake, pandemic, DCPP incident, terrorist attack, major media event
DSO SOPP MODEL	CAT 1	CAT 2 & 3	Cat 4 & 5
FORECAST	Assume normal outage and crew	Triggers weather advisories, watches or warnings, crew and Tman estimates are forecast	Triggers weather advisories, watches or warnings, crew and Tman estimates are forecas
Outage Conditions	expectations		
Work Resources	Local Resources Resources moved within the Division	Resources moved within the Region Resources may move between Divisions within the Region <sup>1</sup>	Resources moved between Regions Significant need for outside resources such as; IBEW contractors, Mutual Aid (CUEA/WEI)
Electric System I	ncident		
Sustained Outages	N/A	SEE OEC Activation Guidelines	Multiple Divisions and Regions Impacted
Customers Out	N/A	>30,000 customers out at one time	>100,000 customers out at one time
Outage Restoration Duration Expected	1 Day	1-3 Days	>3 Days
Load Shed-EEP	N/A	Localized EEP	Localized EEP/System-wide EEP Event
Materials Inventory	Existing inventory adequate	Forecasted storm inventory may or may not be adequate. May need escalated support to procure material	Storm inventory monitoring requires escalating support to procure and deliver materials
News Media Incic	lent		
Customer Experience	Normal	Increased attention with a Division or several Regions with potential national news attention	Increased attention local or Company-wide with national news exposure (e.g. manhole explosion Super Bowl, Election Day)

<sup>1</sup> Resource requests across Divisions within a Region will be managed by the Logistics Chiefs within each Division or Region. Once resources arrive they will be tracked by the respective Resource Unit within the Planning Section. In the event the Resource Unit has not been activated, resource tracking would become the responsibility of the Plans Section Chief or the Incident Commander.



#### Emergency Preparedness

### **Emergency Preparedness**

- Storm Outage Prediction Project (SOPP)
- 10 Day Weather Forecast
- Severe Weather Notifications
- Storm briefings
- Drill scenario preparation
- Historical analysis







## Adverse Weather at PG&E

- PG&E is exposed to risk during adverse weather
  - Power Outages / Customer Satisfaction / Performance Metrics
  - Risk of safety incidents
  - Financial risk (cost of restoration can be significant, cost of over preparing can also be significant)
  - Liability risk increases
- What are the main adverse weather factors at PG&E?

wind, rain, snow, lightning, heat

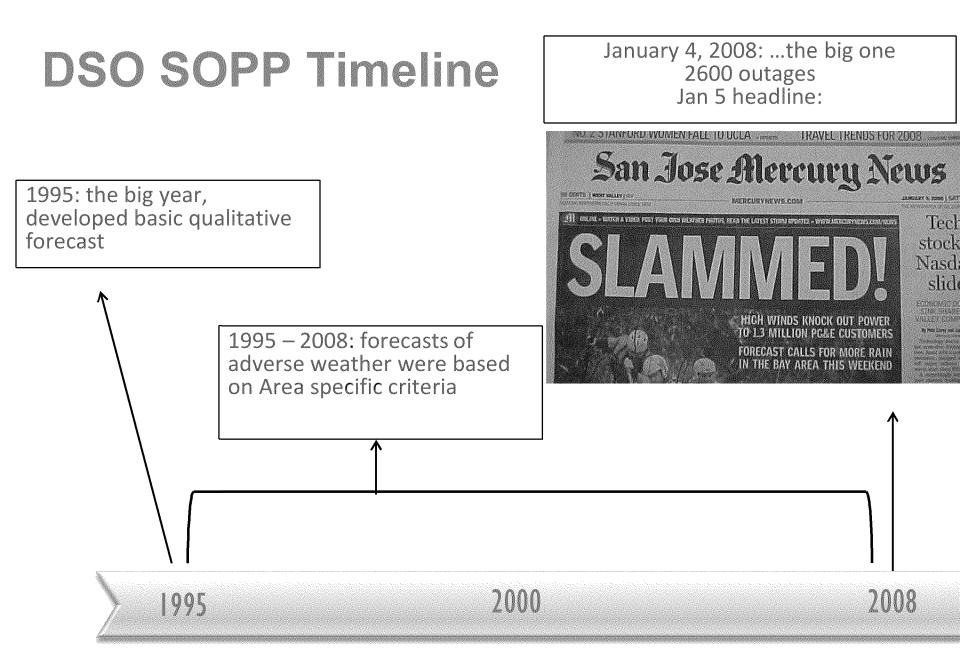
(Each has its own characteristics/impacts)

• What is the seasonal climatology of adverse weather risk? Where?

Winter storm activity in the Santa Cruz mountains versus wildland fire risk in the Chico Area

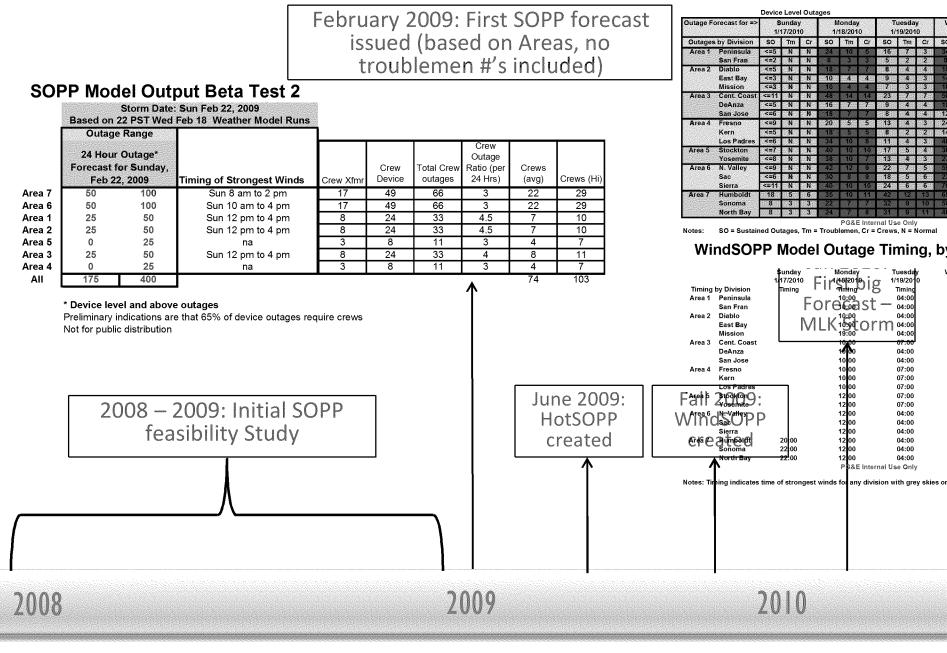
## Storm Outage Prediction Project (SOPP)







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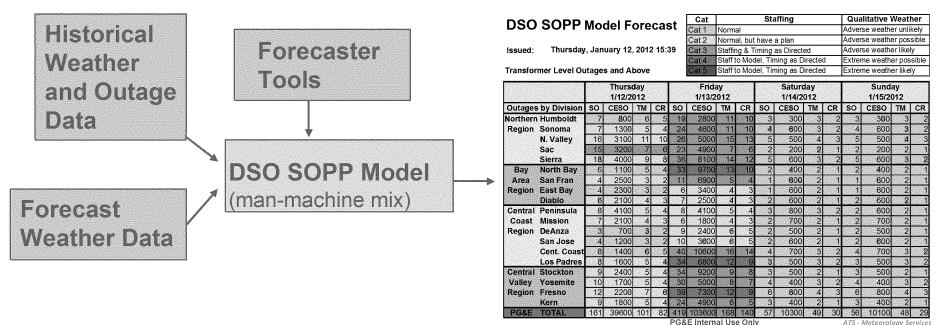




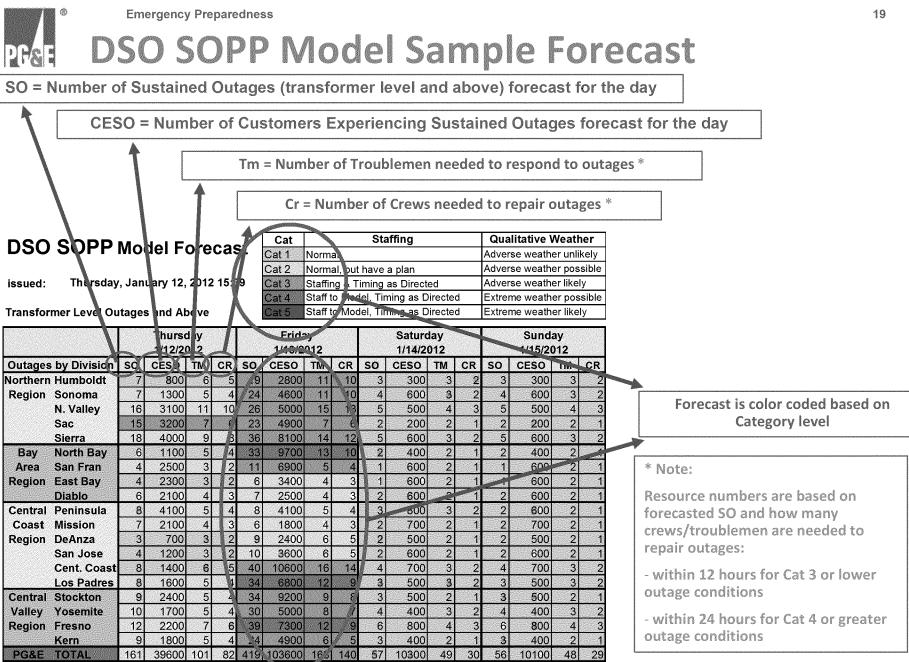
## DSO SOPP Model

#### Distribution System Operations - Storm Outage Prediction Project - Model

Developed to predict sustained outage counts, customer outage counts, timing of outages, and resource requirements necessary for restoration in order to better prepare for and mitigate total risk from storms



stes: SO = Sustained Outages, CESO = Customers Experiencing Sustained Outages, TM = Troublemen, CR = Crew



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ATS - Meteorology Services

Notes: SO = Sustained Outages, CESO = Customers Experiencing Sustained Outages, TM = Troublemen, CR = Crev



### **DSO SOPP Model Sample Forecast**

Timing indicates forecasted timing of most intense outage producing weather (rain, wind, snow, etc) for any division at Cat 2 or above

#### **Colors correspond to the Category forecast**

#### **DSO SOPP Model Forecast Timing, by Division** Thursday Friday Saturday Sunday 1/12/2012 1/13/2012 1/14/2012 1/15/2012 **Timing by Division** Timing Timing Timing Timing Northern Humboldt 0:00 - 6:00 14:00 - 24:00 0:00 - 6:00 **Region Sonoma** 14:00 - 24:00 0:00 - 6:00 N. Valley 14:00 - 24:00 0:00 - 6:00 Sac Sierra 14:00 - 24:00 0:00 - 6:00 Bay North Bay 0:00 - 8:00 16:00 - 24:00 0:00 - 8:00 San Fran Area Region East Bay 0:00 - 8:00 0:00 - 8:00 16:00 - 24:00 Diablo 16:00 - 24:00 Central Peninsula 0:00 - 8:00 16:00 - 24:00 0:00 - 8:00 Coast Mission 0:00 - 8:00 **Region DeAnza** 0:00 - 8:00 San Jose 0:00 - 10:00 Cent. Coast 20:00 - 24:00 0:00 - 10:00 Los Padres 20:00 - 24:00 0:00 - 12:00 **Central Stockton** Valley Yosemite 20:00 - 24:00 0:00 - 12:00 **Region Fresno** 20:00 - 24:00 0:00 - 12:00 Kern 20:00 - 24:00 0:00 - 12:00

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Note: Timing reflects the most intense period of outage producing weather for any division at Cat 2 or above



### **DSO SOPP Model Sample Forecast**

#### DSO SOPP Dissemination

PRSE

- The DSO SOPP forecast is delivered each morning via email
- >3500 recipients
- Also posted to the PG&E intranet
- If adverse weather is imminent, afternoon and evening forecasts are produced

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Northern Region, Sr 4000' south by Satu		ou III - L	tribution Sv	sten Operatio	ne Wieather F	overact: Frid	ay to 3000' north in re not expected a	and
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morning. A weak sy dry conditions return		ugh on Tuesday (	or Wednesday n	lext week with a ch	ance of light shi	wers continuing th	rough the week and (	possible
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Region Sonoma N. Valley	4 600 3 2	10 790 10 10 21 4000 16 13	8 900 5 5 500 4	4 4 600 3				
Sec.	4 400 3 2 7 800 4 3	1700 5 4	3 300 2 5 600 3	400 3	2			
Bay North Bay Area San Fran	4 800 3 2 3 600 2 3	10 2300 7 6 3 1700 3 2	5 1000 4 1 600 2	2 3 600 2 1 1 600 2	2			
Region East Bay Diable	1 600 2 1 3 900 2 1	6 3400 4 3 8 2800 5 4	3 1/00 3	2 1 600 2 3 900 2				
Central Peninsula Coast Mission	2 600 2	9 4600 6 5 5 1500 3 2	1 800 2 2 700 2	2 2 600 2				
Region DeAnze Sen Jose	2 800 2 100	2307	3 700 3	2 2 500 2	1			
Cert, Coast		2903 8 7	7 1200 5	4 6 1000 5	4			

## DSO SOPP Model Performance

- The DSO SOPP Model helps PG&E more efficiently prepare for adverse weather ...but only if outage forecasts are accurate
- How has the model performed in recent events?





## DSO SOPP Model Performance

### 3/30/2012 forecast for 3/31/2012

1400 Update: Distribution System Operations Weather Forecast: Friday March 30 – Sunday April 8, 2012

1400 Update Highlights:

- No significant changes to forecast
- A vigorous frontal system will sweep across the northern half of the Service Area Saturday morning bringing rain and south winds 30 to 40 mph, with higher gusts likely over elevated terrain
- Winds will shift to westerly and remain gusty throughout the day Saturday
- Main impacts still appear to be focused on Northern Region, with less certain impacts for areas south of a Bay Area to
  Tahoe line
- Snow levels will be initially high then lower to 3000 north and 4000 feet south by Saturday afternoon, however little snow accumulation is expected at the lower elevations and low snow outage conditions are not anticipated
- Chance of thunderstorms Saturday, most likely during the afternoon in Northern Region
- Breezy northwest winds 25 to 35 mph are possible Sunday along the coast, through the Bay Area, and down the San Joaquin Valley
- · Fair weather with lighter winds expected Monday

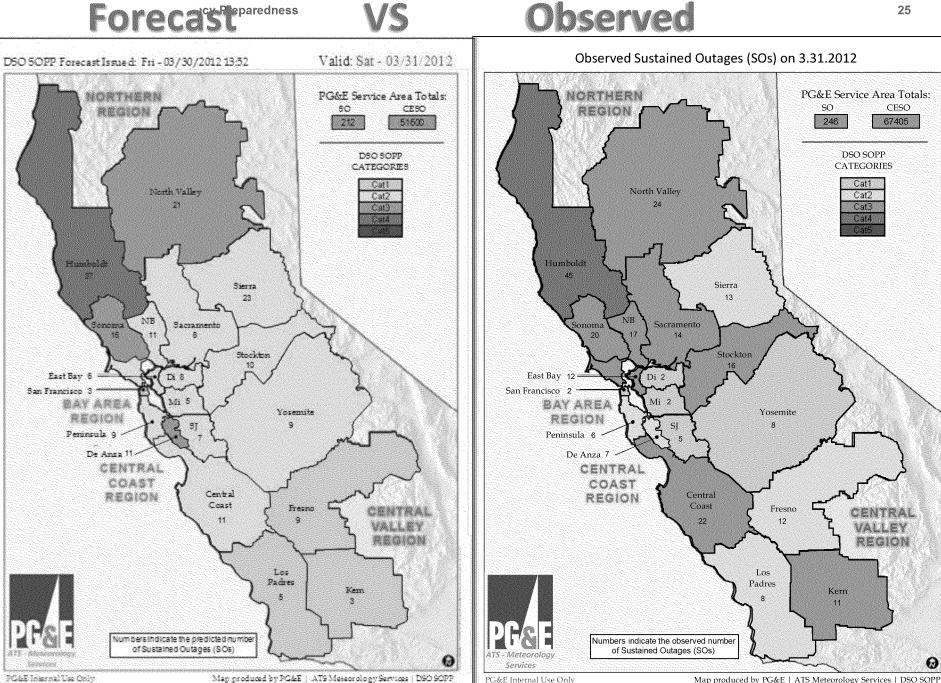
ATS – Meteorology Services



## Emergency Preparedness DSO SOPP Model Performance

### 3/30/2012 forecast for 3/31/2012

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	Sonoma	4	600	3	$\frac{1}{2}$	16	3100	10	q	6	1	5	4	4	600	3	$\tilde{2}$		14		96 <b>7</b>	þ
	N. Valley	6	500	5		21	4000	15	13	5		4	3	6	500	5						
	Sac	4	400	3		8	1700	5	4	3		2	1	4	400	3				7		
	Sierra	7	800	4	3	23	5200	13	11	5		3	2	6	700	4				/		
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Area	San Fran	1	600	2	1	3	1700	3	2	1	600	2	1	1	600	2	1	ct Tim	ha hu ivi	cion		
egion	East Bay	1	600	2	1	6	3400	4	3	3	1700	3	2	1	600	2	1	SUIII	ing, by Divi	.51011	-	
	Diablo	3	900	2	1	8	2800	5	4	3	900	2	1	3	900	2	1	1	Saturday		Sunday	Monday
entral	Peninsula	2	600	2		9	4600	6	5	3		3	2	2	600	2			3/31/2012	V	4/1/2012	4/2/2012
bast	Mission	2	700	2		5	1500	3	2	2		2	1	2	700	2			Timing		Timing	Timing
egion	DeAnza	2	500	2		11	2900	7	6	3		3		2	500	2			04:00 - 16:00			
	San Jose	2	600	2		7	2500	4	3	3		2	A STREET STREET	2	600	2			06:00 - 20:00 08:00 - 16:00			
	Cent, Coast	6	1000	5		11	2900	8	7	7	1200	5	4	6	1000	5			08:00 - 16:00			
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	Stockton	5	800	3		10	2700	5	4	6		4	3	5	800	3	1		08:00 - 20:00			-
	Yosemite	6	700	3		9	1500	5	4	8		4	3	6	700	3			00.00 - 20.00	+		
egion	Fresno	8	1100	5		9	1200	5	4	10		6	5	8	1100	5			08:00 - 20:00			
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Map produced by PG&E | ATS Meteorology Services | DSO SOPP

#### Actual Outages Observed from 03/26/2012 - 04/01/2012

ATS - Meteorology Services	Mon - 3	/26/12	Tue - 3,	/27/12	Wed - 3,	/28/12	Thu - 3/	/29/12	Fri - 3/:	30/12	Sat - 3/	31/12	Sun - 4/	/1/12	
	SO	CESO	SO	CESO	SO	CESO	SO	CESO	so	CESO	SO	CESO	SO	CESO	
Humboldt	9	2042	37	4049	9	72	8	675	6	89	45	5333	10	176	Humboldt
Sonoma	2	16	18	632	6	134	1	1	7	301	20	4686	5	985	Sonoma
North Valley	6	643	5	319	18	1354	1	61	4	2068	24	4452	3	157	North Valley
Sacramento	8	314	7	591	17	717	2	225	8	1800	14	2049	6	65	Sacramento
Sierra	2	59	3	1234	7	205	3	216	3	39	13	2736	5	251	Sierra
North Bay	2	159	18	1628	2	186	1	149	1	1	17	8719	3	211	North Bay
San Francisco	1	7	3	450	0	0	0	0	1	50	2	1280	1	And and a state of the state of	San Francisco
East Bay	2	92	2	613	2	87	0	0	2	2553	12	7053	4	255	East Bay
Diablo	1	8	5	2898	4	376	3	725	2	219	2	1782	1	18	Diablo
Peninsula	5	804	5	337	3	17	- 7	3227	1	4598	6	1814	3	62	Peninsula
Mission	1	2769	5	757	3	79	0	0	4	282	2	4451	1	10	Mission
DeAnza	3	38	5	491	5	1856	1	145	1	8	7	1694	2	2428	DeAnza
San Jose	1	6	3	3690	2	667	5	167	2	19	5	4304	3	57	San Jose
Central Coast	3	95	6	165	9	217	8	5312	2	51	22	10725	3	912	Central Coast
Los Padres	3	219	5	29	4	262	4	50	3	13	8	1107	8	218	Los Padres
Stockton	6	255	4	247	4	658	4	483	5	276	16	3859	2	143	Stockton
Yosemite	6	136	4	99	9	119	8	660	5	9	8	442	11	2556	Yosemite
Fresno	6	274	5	69	5	207	9	93	3	23	12	526	8	4463	Fresno
Kern	7	15	7	19	1	1	4	4	2	2	11	385	7	4682	Kern
TOTAL	74	7951	147	18317	110	7214	69	12193	62	12401	246	67397	86	17693	TOTAL

#### DSO SOPP FORECAST

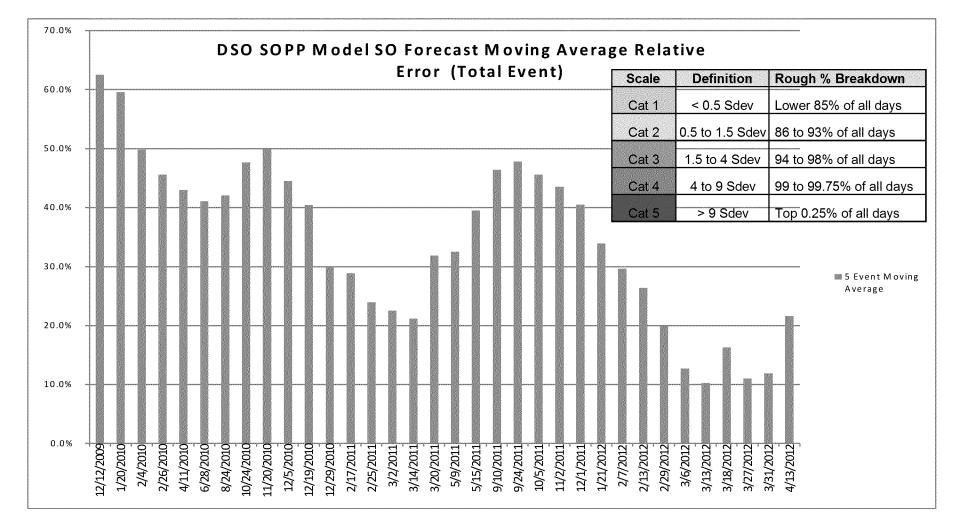
(Forecast numbers extracted from the previous day's forecast)

ATS - Meteorology Services	Mon - 3	3/26/12	Tue - 3	/27/12	Wed - 3	/28/12	Thu - 3	/29/12	Fri - 3/;	30/12	Sat - 3/	31/12	Sun -	4/1/12	
	SO	CESO	SO	CESO	SO	CESO	SO	CESO	SO	CESO	SO	CESO	SO	CESO	
Humboldt	10	1500	23	3400	7	800	8	1200	12	1800	37	5500	4	500	Humboldt
Sonoma	4	600	15	2900	5	800	4	600	4	600	16	3100	5	800	Sonoma
N. Valley	6	500	15	2900	7	600	6	500	6	500	21	4000	5	500	N. Valley
Sac	4	400	8	1700	5	500	4	400	4	400	8	1700	3	300	Sac
Sierra	6	700	15	3400	8	1000	6	700	7	800	23	5200	5	600	Sierra
North Bay	4	800	11	3200	4	800	4	800	4	800	11	3200	3	600	North Bay
San Fran	1	600	2	1100	1	600	1	600	1	600	3	1700	1	600	San Fran
East Bay	1	600	5	2800	2	1100	1	600	1	600	6	3400	1	600	East Bay
Diablo	3	900	8	2800	3	900	3	900	3	900	8	2800	3	900	Diablo
Peninsula	2	600	6	3100	3	800	2	600	2	600	9	4600	3	800	Peninsula
Mission	2	700	3	1100	3	1100	2	700	2	700	5	1500	2	700	Mission
DeAnza	2	500	3	700	3	700	2	500	2	500	11	2900	3	700	DeAnza
San Jose	2	600	4	1200	3	900	2	600	2	600	7	2500	3	900	San Jose
Cent. Coast	5	900	8	1400	8	1400	6	1000	6	1000	11	2900	6	1000	Cent. Coast
Los Padres	4	600	4	600	4	600	4	600	4	600	5	800	5	800	Los Padres
Stockton	5	800	5	800	5	800	5	800	5	800	10	2700	6	1000	Stockton
Yosemite	6	700	6	700	6	700	6	700	6	700	9	1500	8	900	Yosemite
Fresno	8	1100	8	1100	8	1100	8	1100	8	1100	9	1200	10	1300	Fresno
Kern	3	400	3	400	3	400	3	400	3	400	3	400	4	600	Kern
TOTAL	78	13500	152	35300	88	15600	77	13300	82	14000	212	51600	80	14100	TOTAL



### **DSO SOPP Model Error History**

- New categories were defined in Fall 2011, adjusted January 2012
- Increased sensitivity in DSO SOPP Model to smaller storms
- Drop in the relative error in recent months





### **DSO SOPP Intangibles**

The indirect and less quantifiable benefits besides more efficient restoration

## The SOPP methodology, databases, and expertise has enabled:

- Better situational awareness prior to and during weather events meteorologist takes on valuable role in the Plans Section in the Technical Specialist role
- Vastly improved understanding of weather risk to the system
- What is really causing outages and where
- Better understanding of cost drivers for different kinds of storms
- New understanding of the relationships between weather (trends) and reliability (trends) scores (much more than just the obvious fact that weather negatively impacts reliability)

## **Pre-Event**





Issued: Sunday January 17 2010 07:49

Outage Fo	precast for =>		unday 17/201			onday 18/201		'uesday '19/2010				
Outages	by Division	so	Tm	Cr	so	Tm	Cr	SO	Tm	C		
Area 1	Peninsula	<=5	N	N	24	36	5	16	7	3		
	San Fran	<=2	N	N	8	3	3	5	2			
Area 2	Diablo	<=5	N	N			1. Star	8	4	1		
	East Bay	<=3	N	N	10	4	4	9	4			
	Mission	<=3	N	N			2005	7	3			
Area 3	Cent Coast	<=11	N	N	48	1616	14	23	7			
	DeAnza	<=5	N	N	16	7	7	9	4	1		
	San Jose	<=6	N	N		200		8	4	. 1		
Area 4	Fresno	<≔9	N	N	20	6	5	13	4			
	Kem	<=6	N	N	16	5	6	8	2	3		
	Los Padres	<≓6	N	N.	86 B	16	3	11	4			
Area 5	Stockton	<=7	N	N	40	90	(ii)	17	5	14		
	Yosemite	<≕8	N	N	38	510	70.5	13	4			
Area 6	N. Valley	<=9	Ņ	N	49	12	200	22	7	1		
	Sac	<=6	N	N	30	8	21	18	5	1		
	Sierra	<=11	N	N	40		500	24	6	3		
Area 7	Humboldt	18	5	6	()  3i5)	30	. (S)	42	12			
	Sonoma	8	3	3	22		- F	37	9			
	North Bay	<b></b>	3	3	100/2-000		28	1997 B 201	1000	<b>3</b>		

#### WindSOPP Model Outage Timing



Wednesday 1/20/2010 Timing

Thursday 1/21/2010

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Safety Message - August 9, 2012

#### Pre-Planning Available Resources NOTE: provide the a Concepturisation between of an and every and antipervises and approximately and approximately for a source of the second statements and approximately and approximately and the second statements and approximately approximately and approximately approx Sulfunctional Area Pre-artanged or held Remember in . Ship the sid it register, welch out for one another and remind one arighter of the work purpose, these and allocations excises in patient on 212 Cali-out 212 Ca8 212 Cali-oùt 212 Cas ews or shift ews on shift ews on shift them (NR) Sonome North Valley Sacramento tay Area (BA) over vlavenoge / kanshas lyee Sabery San Pranc Eart Bay den Samme-offici Statenist Susses Disble Intral Coast (Cl нали нали и стран жало в рока жало корали Саранара, сали стран Саранара, сали с сали стран Саранара, сали с сали с саранат с саранат с саранат (a) New pressure in the stated or in the conditional conducts determined for supervised with the state of Desig Vapriong on Lagarta-Volkastyred vors sankada Prov Restantar, Rogistion Services Tensionery os Fedres ntral Valley (CV 0 0 12



## **Pre-Event Checklist**

#### Based on supporting execution of the Electric Operations Emergency Operations Plan

- 96 hour- is to be used when the SOPP model is forecasting escalated outage levels in approximately 96 hours out. The overall objective is to begin raising awareness with the Emergency Management Organization (EMO) and to begin the necessary planning activities.
- **48-72 hour-** Similar to the 96+ hours checklist, this checklist begins the transition from initial planning activities to tactical readiness. The objective of this checklist is to begin finalizing key strategies, messages, and readiness.
- 24 hour- This checklist is generally focused on tactical readiness. The objective of this checklist is to validate that the line item approvals are still appropriate based on the latest SOPP output. It is also set up to begin tactical activities such as messaging, where possible.



## **Pre Staging Resources**

#### Pre staging is done based on SOPP model outputs

- Field resource movements across the service territory
- Standby awaiting outage activity

#### Resources are staggered based on response role

- Troublemen and Operators on shift with additional resources reporting just prior to peak weather activity
- 911 Standby resources
- Crew and estimating resources staggered to capture efficiency

#### Contractor resources included in pre-staging based on forecasted weather impact



## Resource Staffing Plan

- Command and General Staff positions filled at all emergency room levels
- Staffing plans are updated weekly and used to populate the Incident Action Plan
- Incident Management Teams utilized to support headquarters with large outage volume
- Field Resources staffed to SOPP model outputs

			EMO Northern Region			
REC	Humboldt	North Valley	Sacramento	Sierra	Sonoma	Incident Managemen
Incident Command	Incident Command	Incident Command	Incident Command	Incident Command	Incident Command	
Anthony Mar 530-326-0190	Contria King-Rela. 20528642174	Deb Hemgen 830-806-4275	. Eps. Psipio 530-006-3304	Marty Sunday 707.815.9244	Alter Thurston 707.202.6965	
Tom Elder 530-410-5059	Richard Trimble 707-799-3861	Brock Boyes 530-736-3647	Trever Hammans 209-479-4176	Emie Matiock 415-517-6541	Ron Richardson 415-342-9160	
Customer Strategy	Customer Strategy	Customer Strategy	Customer Strategy	Customer Strategy	1	
Glay Schmidt 530-406-6115 Kris Matulich 916-955-3476	Hobert Shern 307-398-1981 isen Mercuffo 707-498-4626	Gerios Les 530.639.3080 Dorsen Moratan 530.701.2062	Eans Source 533-613-9158 Keth Smith \$15-296-2985	Caus Bans 530-813-9156 Kaiti Smith 916-296-2965	Customer Strategy	
	anna ann an ann ann an ann ann an ann an a		a determined and the second of the second of the second se	animumente di della persona presenta della persona della pers	line and an and a second second	
P&I 500-520-7492 Brian Streeney 916-505-8047	P&I Collean Hollean 707-637-0359 David Wylle 707-466-1536 -	P&I Lorette Histor 520,520 2175 Bran Agnen: 520,513-7055	P8J Denise Asystems 320-857-1573 Onteno Johnson 915-912-4419	P&I Dense Leppe 970-616-1167	<b>P&amp;I</b> Laura Mor 107-320-1263	
Logistics				Logistics	-	
Josejok Marino 530-407 (1851) Lyns Ponette 916-402-0327	Logistics Sharin Norant 707-496-0118	Logistics Let Bierrice Set 410 6472	Logistics Dery Stillaria Still and 1027	Joseph Abivardi 030-320-7077 Marty Nepper 530-226-4032	Logistics Conner Alendoza 707-261-6082	

Pre-Planning Available Resources

					Rep	air Crews	(T-200 & T-	300)				
		Thurs			Fri		1	Sat			Sun	
	Crews on shift	Pre- arranged or held over	212 Ca8- out	Crews on shift	Pre- arranged or heid over	212 Ca8- out	Crews on shift	Pre- arranged or held over	212 Cas- out	Crews on shift	Pre- arranged or held over	212 Call- Dut
Northern (NR)	3	0	15	3	0	5	0	0	5	0	0	5
Humboldt Sonoma North Valley Sacramento Sierra	9	•	12 3	0	1	5	0	0	5	a	0	5
Bay Area (BA)	22	4	H	22	4	12	3	5	9	2	4	<b>y</b> 9
North Bay San Francisco East Bay Diatric	10 7 3 2	0	4	10 7 3	0	4 2 1 2	1 0 0 2	1 0 0	1 2 1 5	0	0	2 2 1
Central Coast (CC)	22	GINERALDARS	8	19	5	n	1		10	1	2	19
Peringuia Mission De Anza Samiose	6/3man 3	1/4max late O		5/3men 3	1/3man late O		1 0	1	3/3man 5	1	1 0	3/3man 5
Central Coast												
Los Padres	14	4	2	11	4	2	0	2	15	0	1	2
Central Valleg (CV) Stockton	24	11	20	23	18	18		16		0		17
Yosemite	0	3	-	0	4	5	0	2	5	0		5
Fresso	13		8	13	8	2	2	e e	5	0	2	8
Kern	1	· ·	ŝ		,	ê				1		2
Total	71	14	54	67	17	46	9	25	34	i i	20	11

## During Event





## **Overall Strategy**

- Make Safe: Field personnel act to address hazardous conditions to ensure public and employee safety.
- **Assess:** Field personnel assess the outage location to:
  - identify the outage cause
  - determine the necessary (material, equipment, personnel)
  - estimate the time necessary to make repairs.
- **Communicate:** Field personnel and system operators work together to provide customers and public agencies with information: such as the cause of an outage and estimated time of restoration.
- **Restore:** After making the condition safe, assessing the situation and beginning the communication process, field personnel and system operators work together to restore service



#### **Electric System**

- Control area interconnections
- Generation
- Transmission
- Substation
- Distribution
- Customer level

#### **Special Considerations**

- Essential and Critical Customers (e. g., life support, hospitals, water, sewage, schools)
- Make Safe and Wire Down Situations
- Extended Duration Outages

## Close coordination is required with local and state governments



### Audience: Emergency Management Organization

EOC Command and General Staff, Region Directors, Division Superintendents and their respective command and general staff support

**Objective:** Organization leaders to set preliminary expectations for emergency centers, Incident Action Plan forms, and pre-staging requirements

### **Facilitated by the Planning Section Chief**

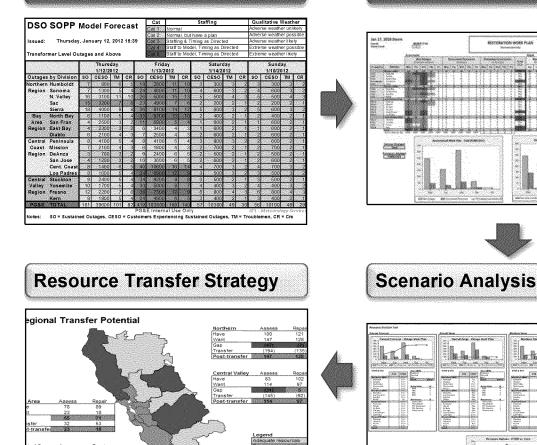
#### Agenda:

- Safety -- Key Safety Topics and Safety Incident Report Out (Safety Officer)
- Weather -- (Meteorology)
- Operations Update
- Restoration Update
- Resourcing Plan
- Closing Comments



### **Emergency Preparedness Resource and ETOR Strategy**

#### SOPP model

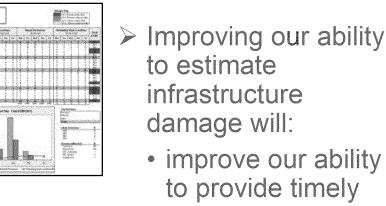


#### **Restoration Work Plan**

Like

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Supervegan Newcellectro MC Regracies Rif-Second Regracies

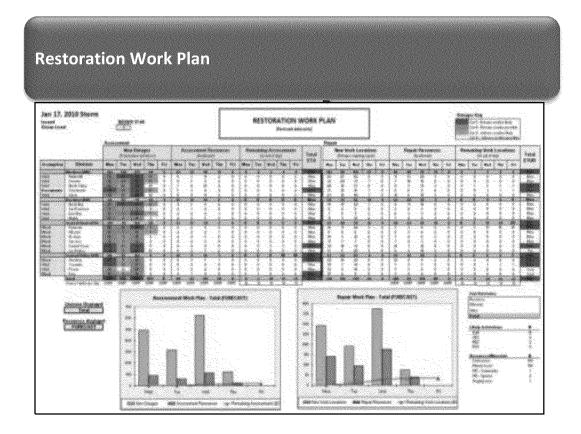


- to provide timely and accurate outage information
- expedite the outage restoration effort



Emergency Preparedness

### **Resource and ETOR Strategy**



#### Inputs

- > Weather
- Outage forecasts and real time outages
- Available resources
- Assessment and Restoration Rates

#### Outputs

- Assessment Times
- Restoration Times
- C Event ETOR

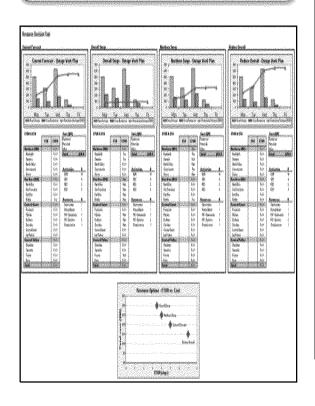




### Resource and Estimated Time of Restoration (ETOR) Strategy

#### **Resource Transfer Strategy** egional Transfer Potential Northerr Assess Repa 100 121 Want 187 128 (194 Transfer Post-transfer 147 **Central Valley** Assess Have 83 Wani 114 Transfer (145) Post-transfer 114 89 18 71 53 Legend Adequate resources esources available al Coas Assess Repair 105 126 45 60

#### **Scenario Analysis**



#### **Scenario Analysis**

 Allows us to determine resource movement strategy to meet operational objectives

#### Resource Transfer Strategy

- Takes input from scenario analysis and visually represents resource picture
- Identifies gaps in staffing levels.



### **Mutual Aid**

**Triggers for Mutual Assistance** 

Prior to and continuously through out an event, the EOC Director shall begin the process of evaluating and documenting the need for mutual assistance. The EOC Director will recommend the need for mutual assistance to the SVP of EDO when existing resources are determined to be inadequate. Conditions triggering this determination include, but are not limited to:

- All PG&E resources have or will be committed.
- Service restoration cannot be completed within 48 hours.
- It is the opinion of the EOC Director that additional resources will significantly reduce the time needed to complete restoration.
- Mobilization and travel time of Mutual Assistance Crews.

# Mutual Aid requests are prioritized to the closest available utilities



### **Smart Meter**

### **Restoration Validation**

 Restoration Validation enables users to ping the SmartMeters of Single Customer outages to determine if power has been restored

### **Manual Scoping**

• Operators have the ability to ping meters to determine if additional customers are also out.

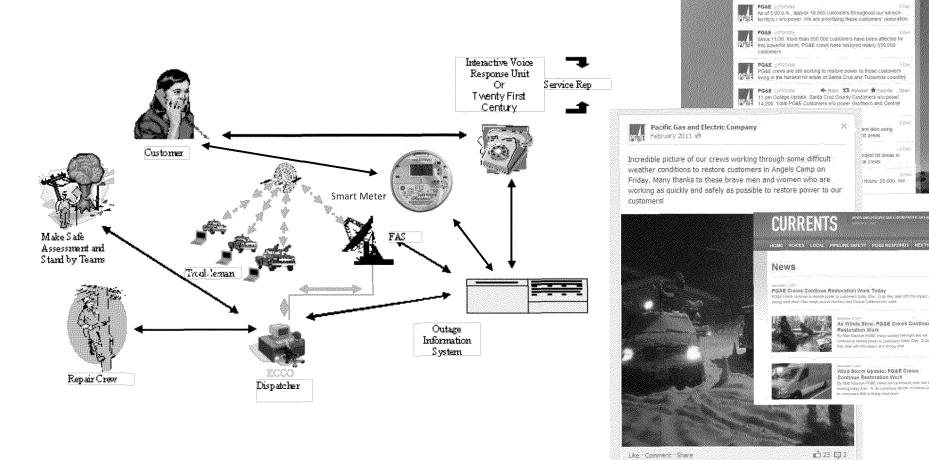
### **Probable Inferred Location**

 Identification of potential nested outages using the analysis of customer calls and the AMI (Advanced Metering Infrastructure) outage alarms



#### Other Outreach Tactics:

- Door to Door
- Town Hall Meetings
- Extended Outage Outbound Calls
- Government and State Interactions
- Social Media
  - Twitter
  - Facebook
  - Currents



PGRE If you a Provide your ou

PGAE We ha

3 If you are currently wio power, please call 1, 500-743-5002 to report your outside. Our crews are working as safely and quickly as possible.

WAE Scottered than 242 PCAE contract and mutual assistance crews

poyed across our service area working to restore service

# 911 Standby Process

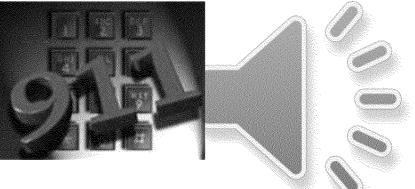








- High profile events
- Coordination and prompt response supports public safety
- Public agencies can then respond to other public safety concerns





# Emergency Preparedness Improving Performance





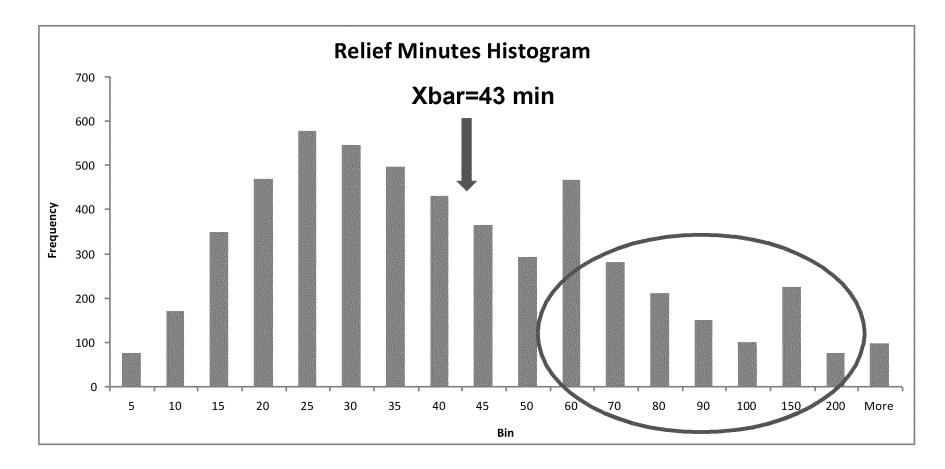
- > Organizational focus has driven improved performance
- > Daily metric on Daily Reliability Scorecard
- > Weekly reviews on daily status calls and with local teams



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PP&F

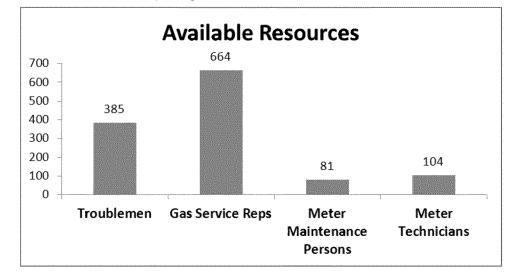
### **Process Capability**



2012 end of year performance 84.09%



#### **Resource Deployment**







- SOPP Forecast represents expected number of calls for each division
- Use of non-traditional resources (e.g., meter techs, GSRs) is critical during significant events\

#### Storm Response Performance within 1 hour

2011 **40%** 2012 **80%** 



Emergency Preparedness

### **Public Agencies As Partners**



- ➤ Training
- Pre-event Process Coordination
- > Joint Exercises
- Joint Stakeholder
   911 Committee
- Participation in PG&E exercises





## Joint Response Plans and Exercises

### PG&E has dedicated Public Safety Personnel to support training and exercise development

- Development of joint response plans based on identification of joint risk
- Utilization of Unified Command
- Joint exercise of developed response plans





### Adoption of Public Sector Best Practices

- ICS and NIMS
  - Command and General Staff ICS 100-400
  - Utilization of a written Incident Action Plan (IAP) including prioritization of goals and establishment of objectives
- Homeland Security Exercise and Evaluation Program (HSEEP)
  - All Emergency Preparedness personnel HSEEP certified
  - Application of the building block approach for training and exercises
  - Utilization of capabilities to drive development of exercise scenarios, supporting documents (Sit Mans, Ex Plans), and Exercise Evaluation Guides

### Formalized corrective action and improvement program

# Fire Prevention Plan



\* Emergency Preparedness Fire Prevention Plan

- Pre-planning Activities
  - Public Outreach
  - Fire and Weather Intelligence
- Threat Mitigation
  - Vegetation Management
  - Patrols and Inspections
  - Operational Precautions during high risk periods
- Proactive Responses to Fire Incidents
  - Fire suppression support
  - Pole treatment and ground cover mastication
- Post Incident Recovery
  - Thorough event critiques
  - Joint agency debrief sessions
- An addendum which identifies the specific CPUC requirements for Santa Barbara County with which PG&E should comply.





# **Fire Weather Forecasts**

- Daily fire weather
   forecasts (8 AM DSO call)
- Weekly fire weather summary forecast
- Alert organization of current and future fire weather conditions, and provide awareness of critical fire weather conditions
- Spot forecasts for active wildfires which threaten PG&E assets



#### Weekly Fire Weather Forecast 8/10/2012 - 8/17/2012

A strong ridge of high pressure is extending westward from the four corner regions over the Service Area and will dominate weather conditions through the weekend into early next week. Very hot temperatures are forecast across the interior valleys today and through the weekend with the warmest locations likely to exceed 105 degrees. During the afternoon hours today and through the weekend, relative humidities will drop to critical single digit values across the north creating conditions conducive for fire ignitions, extreme fire behavior and growth. Winds are expected to be light to moderate during this time frame with maximum gusts near 25 mph.



# **Distribution Maintenance**

- Performed additional annual enhanced patrols
  - Focus on facilities that can be a source of ignition and are near flammable vegetation- Completed by March 31<sup>st</sup>
- Maintenance identified by enhanced patrols rated as high priority and must be replaced or repaired by 7/31
- Performed overhead infrared inspections on all overhead line segments in the Urban Wildfire Areas by 6/30
- Vegetation contractor clears all Local Responsibility Area (LRA) locations in the Urban Wildfire (UWF) that have non-exempt equipment
- Proactive on non-exempt equipment in UWF area begins in 2012



### Routine T&D Vegetation Management Program Scope

- Annual ground inspection of every mile (100%) of overhead line. Address through trim or removal, any tree that will encroach within minimum clearance distances and any hazard tree to maintain regulatory compliance.
- 113,000 miles of distribution line
- 19,500 miles of transmission line
- 70,000 square mile service territory
- Prune or remove ~2,000,000 trees annually
- 5M trees in inventory with potential to "grow into" powerline

50M trees with potential to "fall into" powerline

Maintain fire breaks on 120,000 subject poles/towers

Maintain transmission right of way

**625 contract tree crews and 350 utility arborists/foresters** 

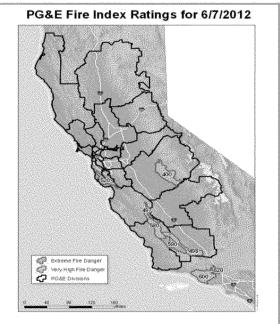


# **Fire Season Preparedness**

# Reinforced S-1464, Fire Danger Precautions in Hazardous Fire Areas with organization

- Prohibits or limits certain maintenance activities (i. e., blasting, welding, open burning) in "very high" or "extreme" areas
- Limits electric operations circuit testing
- Daily tailboard of fire weather forecast and fire index

Fire Adjective Index for: Friday, June 15, 2	minimum Fire Seasos (Max 18 to November 30) 2 2012 Updated by LMG8 on 6/15/12 @ 0007
Stabeth Aibde Five Index by Zondex Area Made (FCE)     Cite Issue of Five Index by Annual State Area     (Sin Made of Five Indexes, And Lettering     Gis Made States     (Sin State States     (Sin States)     (Sin States)	Scholds Area Techoetafure Findecaal     Itidaa Caatom Ina Vietathat Itaa     Coatom Ina Vietathat Itaa     Coatom Index polya Interfaces     CatorCounts Lackas Letter (Enterfaces)
y High Fire Index Areas (Cities and Counties)	Extreme Fire Index Areas (Cities and Counties)
BARC CLAVITY         COTINE'S M THIS FREE AWAG           WADERA         Calution, Indian Broging, Linovies, Knowles, Juntidier, Raymond           MARPORA         Bein Aur, Ghante Springs, Hayward, Hermitos, Intara Guith           MARPORA         Bein Aur, Ghante Springs, Hayward, Hermitos, Intara Guith           MARPORA         Bein Aur, Ghante Springs, Hayward, Hermitos, Intara Guith           Big Turbul, Lubitos         Bianchara           Bianchara         Bianchara	Break Bockwith         Bothons & Small Rev. Megal           262         COLUMA         Stonyburg           263         GLENH         Chrome, Elk Creak, Newvite           264         SHATA         Beegun, Chro           265         SHATA         Beegun, Chro           264         SHATA         Beegun, Chro           265         SHATA         Beegun, Chro           266         SHATA         Beegun, Chro           267         SHABBA         Litermore, Transport, Small           268         SHABBA         Litermore, Transport, Small           269         Auben, Arno Gar, Clayfon, Concord, Cowell, Darwille, Diablo, Four Comers, Mult           260         COSTA         Facheo, Taxagina

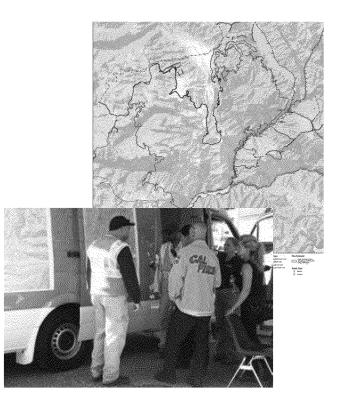


- Conducting spring table top exercises for gas and electric
  - ICS response structures and scenarios
  - Table top Exercises focused on ICS coordination, heat events and wildland fire response



# Wildland Fire Lessons Learned

- PG&E's proactive initial response support has been invaluable in supporting responder and public safety and effective response strategy
- PG&E presence at the ICP has provided enhanced information and intelligence to the Command Team and other Cooperating Agencies and supports the execution of the incident objectives
- GIS maps and MCV support has been identified by responders as proof of PG&E's commitment to public safety and community recovery
- PG&E's implementation of ICS has provided a more coordinated response across the enterprise and has resulted in the development of sustainable relationships within PG&E and with the agencies.
- Cell communications not reliable in all areas resulting in the addition of satellite communications to the Sprinter fleet- Sept 2012
- Multiple technology issues including: router and network
- Increase of 2 additional Emergency Communications Trailers (ECT) units Q1 2013





### Questions



# In Summary

- We want you to be informed on PG&E Capabilities We want to strengthen working relationship and continentations!
  - PG&E is here to support you!
- You will be receiving a Survey from PG&E within 10 days – for your Comments and Input



# If you have additional question or comments:

Redacted

### Manager, Electric Operations Emergency Preparedness and Public Partnerships

Redacted



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