The January 2008 Storm was the biggest storm in 20 years to impact the entire service territory. In the four-day period of January 3rd thru the 6th, the measured outages generated by the storm's impact were double the total monthly outage volume for a typical January. The impact also caused significant damage to the distribution infrastructure resulting in the equivalent of two-months' of steady state work to restore customers during this period. In addition, the storm's intensity, with sustained winds over a long period, presented significant restoration challenges that delayed the use of modern restoration technologies due to the safety risks posed by the conditions.

Based on these factors and unique challenges associated with this measureable event, PG&E's response was reasonable.

Provided below is a summary of the January 2008 Storm including a summary of the observed weather and correlating damage to the distribution infrastructure, a historic explanation of PG&E's Wind Warning Criteria, and a summary of PG&E's restoration actions and response performance.

A. Damage to PG&E's Electric Distribution System

In 2008, a series of Pacific winter storms, from January 3 through January 6, 2008, brought extreme wind conditions, unusually heavy rains, and high snow levels that affected the entire PG&E service territory. The heaviest damage was the result of the "Super Storm" that hit on January 4, 2008[1]. The average recorded wind gusts on this date were in the 32 to 68 mph range in a widespread area with peak gusts in excess of 80 mph in Shasta County, 83 mph in Marin County, 105 mph in Santa Clara County, and110 mph in Contra Costa County. Storm rainfall totals ranged from 2 to 13 inches throughout most of PG&E's service territory.

These storms presented a significant restoration challenge because PG&E experienced sustained winds greater than 35 mph for an extended duration. When the Utility experiences winds this high, it greatly reduces our ability to utilize bucket trucks and helicopters to assess damage and restore service. In many cases, these sustained winds required manual climbing or crews hiking

---

[1] See: Wikipedia article titled January 2008 Western North American Super Storm. http://en.wikipedia.org/wiki/January_2008_Western_North_American_super_storm.

into remote locations for restoration. This additional variable created a challenge around resource logistics as we may have multiple crews ready to restore, yet the conditions did not allow for immediate and safe deployment. These were all obstacles experienced during the January 2008 Storm and factors which limited PG&E's ability to safely utilize modern tools to support rapid, efficient restoration until the weather stabilized.

Restoration in these conditions also presented additional safety risks due to the aforementioned challenges which must be considered as restoration activities were planned and executed. Table 1 provides a detail of recorded wind speed by division[2].

TABLE 1
PACIFIC GAS AND ELECTRIC COMPANY
RECORDED WIND SPEED BY DIVISION
JANUARY 2008 STORMS

Line No.	Location	Wind Gusts (mph)
1	Central Coast	46-56
2	De Anza	29-105
3	Diablo	47-110
4	East Bay	55-83
5	Fresno	25-38
6	Humboldt	37-54
7	Kern	36-41
8	Los Padres	44-66
9	Mission	38-69
10	North Bay	52-83
11	North Coast	47-55
12	North Valley	58-70
13	Peninsula	40-68
14	Sacramento	41-66
15	San Francisco	64-65
16	San Jose	35-51
17	Sierra	49-62
18	Stockton	55-60
19	Yosemite	37-48

PG&E uses a weather warning system to alert personnel to the threat of pending weather. Table 2 provides the original list of the thresholds by category of weather risk and Area within PG&E's service territory.

[2] PG&E's divisions contain several RAWS (Remote Access Weather Station). The ranges provided in Table 1 represent the maximum range recorded by the stations located in each Division.

TABLE 2
PACIFIC GAS AND ELECTRIC COMPANY
WEATHER WARNING CRITERIA LEVELS

PG&E					
Severe Weather Notification Criteria					
PG&E Area (North to South)	**Wind Gust**	**Rain ***	**Snow***	**Heat Waves (Two or More Consecutive Days)**	**Miscellaneous**
Coast/Coastal Valley					
7	>=50 mph	>2.0 Inches	Below 2000 ft	95/105 *	Thunderstorms Tornadoes River Flooding
1	>=45 mph	>2.0 Inches	Below 2000 ft	95/105 *	
2	>=45 mph	>2.0 Inches	Below 2000 ft	95/105 *	
3	>=45 mph	>2.0 Inches	Below 3000 ft	95/105 *	
4*	>=40 mph	>2.0 Inches	Below 3000 ft	95/105*	
Interior					
6	>=45 mph	>2.0 Inches	Below 2000 ft	110	Thunderstorms Tornadoes River Flooding
5	>=40 mph	>2.0 Inches	Below 3000 ft	110	
4**	>=40 mph	>2.0 Inches	Below 3000 ft	110	
* Los Padres Division ** Fresno and Kern Divisions	Add 15 mph for coastal ridgelines and elevations >3000 ft.	* in 24 hours	* >2 inches accumulation	* Coast / Coastal Valley	
					Rev 12/07
Note: Warning e-pages are issued 0 - 24 hours in advance; Watch e-pages are issued 24 - 72 hours in advance					

The historical background for the criteria listed above goes back to 1995. After the storms of January and March 1995, a task force comprised of representatives from Meteorology, Operations Coordination Center (OCC), now known as the Emergency Operations Center (EOC) and Distribution developed a set of weather criteria that, if met or exceeded, would result in large customer outage events. PG&E implemented a warning system to provide pager and email notifications if such severe weather events were forecast. The primary components of the warning system included:

- Dividing the service area into six geographic zones
- Establishing severe weather thresholds for each zone
- Defining watch and warning time criteria
- Classification of storms as slight, moderate and severe based expected outage numbers.

Originally, wind criteria were developed for sustained winds and wind gusts. The speed thresholds for each zone were based on a combination of objective

criteria and the field experiences of meteorologists and electric distribution personnel. Between 1995 and 2007, the wind thresholds were further refined and simplified[3].

Table 3 below provides the 2008 Wind Warning Criteria by division and the duration that the wind exceeded the criteria level.

TABLE 3
PACIFIC GAS AND ELECTRIC COMPANY
DURATION OF WIND SPEED ABOVE THE WARNING CRITERIA BY DIVISION
JANUARY 2008 STORMS

Line No.	Location	Wind Warning Criteria (mph)	Duration above Criteria (hrs)
1	Central Coast	45	8
2	De Anza	45	15
3	Diablo	45	9
4	East Bay	45	11
5	Fresno	40	0
6	Humboldt	50	1
7	Kern	40	3
8	Los Padres	40	18
9	Mission	45	10
10	North Bay	50	10
11	North Coast	50	2
12	North Valley	45	12
13	Peninsula	45	8
14	Sacramento	45	11
15	San Francisco	45	10
16	San Jose	45	6
17	Sierra	45	9
18	Stockton	40	13
19	Yosemite	49	5

All but one of PG&E's 19 divisions experienced above criteria winds for more than one hour, with 68% of the territory (13 of 19 divisions), which includes 70% of PG&E's electric customers, affected by above criteria winds for eight hours or more. The severity of these series of storms was exacerbated by the duration of time the service territory experienced above

[3] PG&E has since made significant changes to the process of weather monitoring and notifications with the creation of the Storm Outage Prediction Project (SOPP) and pre-event preparedness processes.

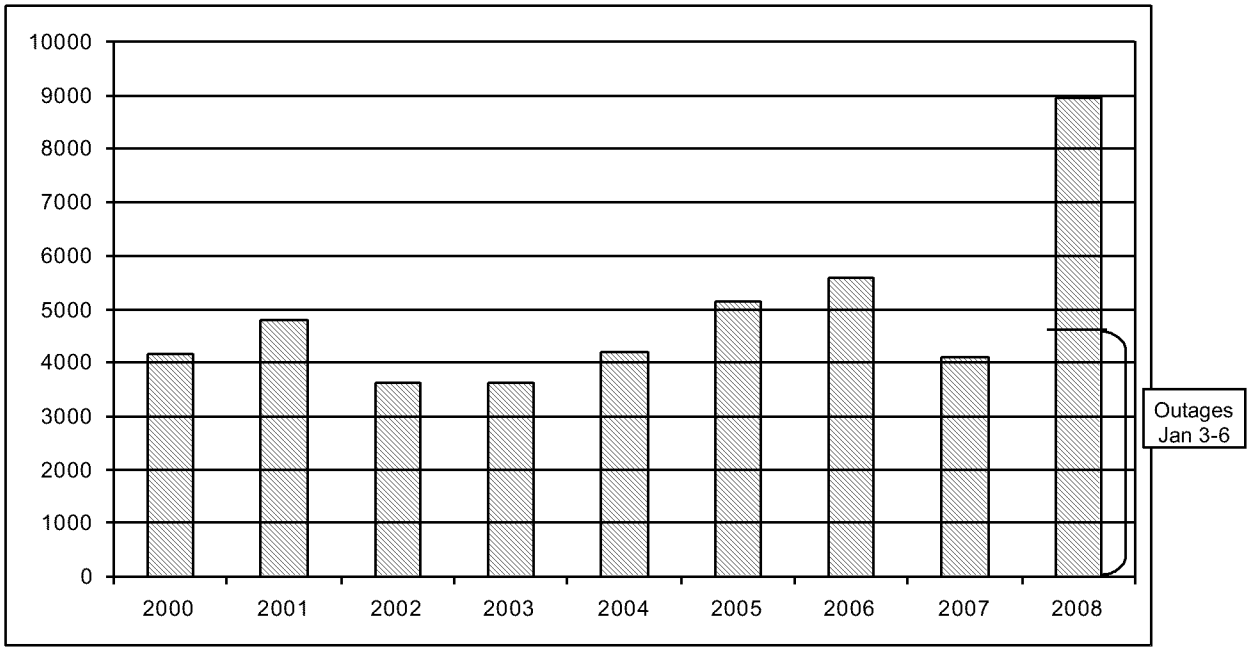
criteria wind speeds. While PG&E cannot directly quantify the relationship between the relative duration of wind speed in excess of the criteria and the damage the system sustained, the Company believes the duration of wind speed in excess of the criteria was a significant contributor to the level of damage and restoration challenges which delayed the use of modern restoration technologies such as PG&E bucket trucks and helicopters.

The wind and rain volume accompanying the January 2008 Storms caused approximately 4,439 outages and widespread damage to the electric distribution system throughout the service territory. (An outage is classified as an unplanned interruption of greater than or equal to 5 minutes, at the distribution circuit breaker, devise, or transformer level often affecting one or more customers.) The damage inflicted on the overhead distribution facilities included whole trees and large limbs falling through overhead lines and onto poles and pole-mounted equipment. Hurricane force winds snapped poles off near ground level. Pictures of the damage sustained to PG&E facilities and PG&E crews responding can be seen in Appendix A.

Over the course of the January 2008 Storms, PG&E replaced 1,050 poles, 907 cross arms, and 873 transformers, and repaired or replaced 4,641 spans of wire. This was the most significant event to hit the electric distribution system since the December 1995 and December 2002 Storms.

The wind, snow and heavy rain caused outage volume for January 2008 to increase dramatically. Table 4 shows the outage volume by year for the month of January from 2000 through 2008.

TABLE 4
PACIFIC GAS AND ELECTRIC COMPANY
SYSTEM OUTAGE VOLUME JANUARY 2000-2008



During the four days of the January 2008 Storms (January 3-6) PG&E experienced 4,439 sustained outages, which represents 49.6% of the total outages recorded for the month January 2008. As illustrated in the figure above, the outages recorded during this one event is greater than the total number of outages recorded for the entire month of January in five of the eight the preceding years. PG&E experienced more outages during January 2008 than it has in each of the past eight years for this same period.

B. Electric Distribution System Restoration and Contact Center Activities

As set forth in the Electric Emergency Plan, the initial step in PG&E's storm damage restoration efforts was to assess the level of damage and eliminate any unsafe conditions. In much of the service territory, downed trees and debris blocked roadways and prevented access to personnel attempting to perform a damage assessment. These areas required work from tree crews first to remove trees and debris from roadways in order to

allow PG&E personnel to perform the damage assessment and begin service restoration.

Because of the high volume of outages throughout the service territory, PG&E escalated its emergency posture to a Level 3 emergency. Local emergency centers and the centralized Operations Coordination Center were activated to coordinate overall restoration efforts and the movement of resources to hardest hit areas.

In order to maximize PG&E's ability to communicate with customers and utilize available technology, gas service representatives and meter technicians with Field Automation System (FAS) units where paired up with qualified line workers to create two-man assessment teams. PG&E was then able to dispatch outage orders to these additional teams utilizing the FAS technology, to provide responsive communication with customers, and allow for quick assessment of work locations by eliminating the manual phone communication and re-entry of outage causes and assessment information by clerical support in the District Storm Rooms.

The information gathered during the assessment phase was used to determine the number of crew resources needed and materials required to quickly restore service to customers. During the damage assessment phase, information was also gathered to help determine ways to temporarily reconfigure the system to restore service to the greatest number of customers possible prior to completion of major repairs. The system was reconfigured by opening and closing field switches to isolate damaged sections and re-energize intact sections via alternate routes where possible.

PG&E Operations Emergency Centers and District Storm Rooms worked around the clock ensuring that outage assessment information was entered into the Outage Information System in order to provide customers with timely, accurate information regarding outage status and projected restoration.

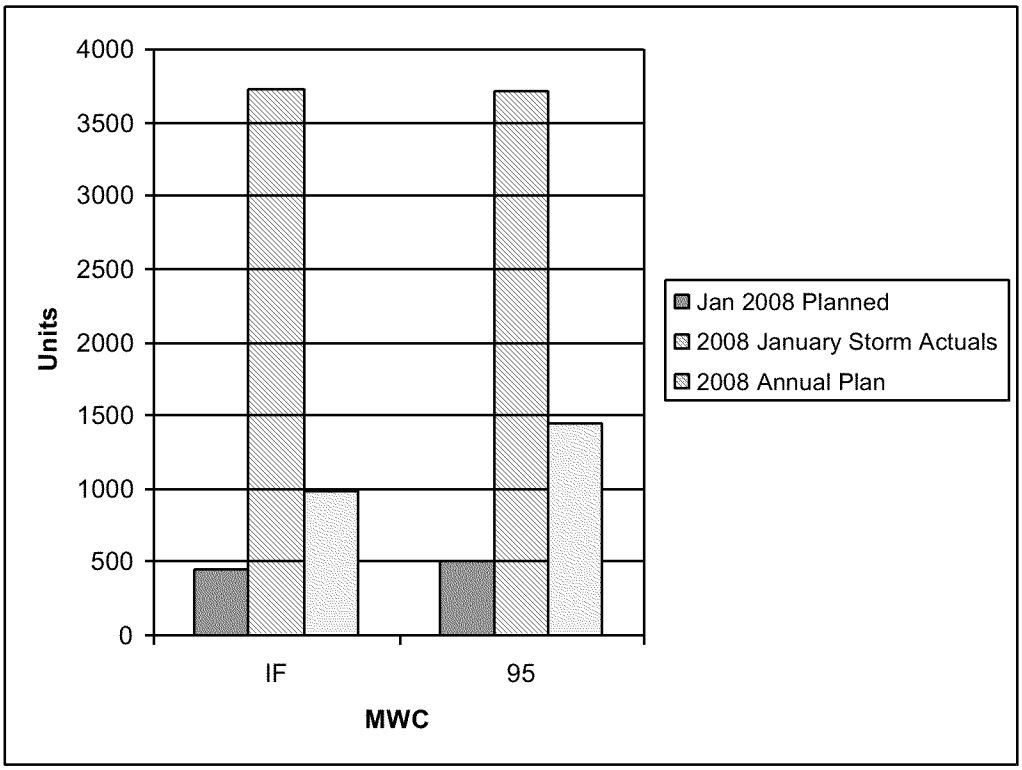
Once damage sites were accessible, repair crews cleared debris, removing excess soil and vegetation where necessary, prior to repairs. Overhead line damage repair included repairing or replacing damaged

poles, pole hardware and pole-mounted equipment, removing foreign objects from overhead lines and splicing or replacing conductor.

Temporary repairs were made in certain situations to eliminate unsafe conditions and to help restore service more quickly. Permanent repairs were made and normal operating system configuration was restored via field switching as soon as resources were available and could be efficiently utilized to do so.

All emergency repairs performed on the distribution system are captured in the form of "units." A unit of work recorded on an Electric Corrective (EC) tag. Units of work involve both capital and expense. Major Emergency expense work is captured in Major Work Category (MWC) IF and can involve, but is not limited to, splicing conductor, replacing insulators, re-sagging conductor, or basically any work that involves a repair. MWC 95 captures major emergency capital work and involves the replacement of a capital plant asset such as a pole, cross arm or piece of line equipment. Table 5 below shows the comparison of work units planned for the month of January 2008, actuals for the January 2008 Storms, and work planned for the full 2008 year.

TABLE 5
PACIFIC GAS AND ELECTRIC COMPANY
PLANNED AND ACTUAL WORK UNITS FOR MWC IF AND 95
JANUARY 2008 STORMS



Before the storms, the forecasted the 2008 unit volume of electric maintenance expense work (MWC IF) based on historic average workloads for January was 450 units. However, actual units completed in response to the January 2008 Storms were 3,731 units – an 829% increase above the forecast. Similarly, the forecasted unit volume for electric capital work (MWC 95) for January 2008 was 502 units; however, the actual units required and completed during the January 2008 Storms were 3,717 units – a 740% increase above the forecast.

The unit volume that PG&E crews recorded to restore customers during the January Storms was more than seven times the total volume of all work planned for the entire month of January. To say that PG&E crews along with vegetation management contractors and mutual aid crews worked tirelessly to restore service to PG&E's customers as quickly as possible is a gross understatement – for both capital and expense, these crews worked

in this single set of 2008 Storms more than double the total unit work volume forecasted for the entire year of 2008.

But even this does not tell the whole story of the impact of the 2008 Storm and the effort that PG&E made to restore customers. PG&E creates customer service work schedules and plans resources on a five-week rolling basis. For January 2008, PG&E had scheduled crews to work 407,000 hours of work in various MWCs for gas and electric construction and maintenance. When a major event impacts the service territory, this normal or "scheduled" work is put on hold and the crew resources are re-deployed to the higher priority work of replacing storm damaged equipment and restoring customers. In January 2008, PG&E construction crews did not work 407,000 hours as scheduled – they worked 595,000 hours – 188,000 hours over the hours scheduled for the month.

The hours worked in response to the January 2008 Storms was 284,000 hours. All these thousands of hours represent crew work that was not scheduled or included in the original work plan. This represents 48% of the hours worked and 70% of the hours planned in January.

During the course of the January 2008 Storms approximately 6,000 PG&E Operations, Maintenance and Construction (OM&C) employees responded. These dedicated employees included electric and gas construction crews, troublemen, gas service representatives, meter technicians, clerical staff, gas and electric estimators and meter readers. The broad impact of the damage required PG&E to mobilize resources from within the service territory. Resources were dispatched and moved from lesser impacted areas such as Kern and Los Padres divisions to the more heavily impacted areas including the Bay Area and the northern part of the service territory. In addition to PG&E personnel, 300-350 vegetation crews (approximately 700 individuals), 70 contract crews (approximately 450 individuals) and 28 mutual assistance crews (approximately 170 individuals) from Southern California Edison (SCE), San Diego Gas and Electric (SDG&E), City of Gridley, City of Redding, and Sierra Pacific Power were utilized to supplement existing PG&E resources.

The restoration activities of the field resources were also supported by other lines of business, including PG&E's materials facilities in Emeryville, Marysville, Fremont and Fresno through the activation of the Materials Transportation Coordination Center (MTCC). The MTCC provided 24-hour coverage to ensure availability and rapid delivery of the materials throughout the service territory.

Call Center Operations also increased staffing and hours in support of PG&E's response to this event. In response to the increased customer call activity for information and service, the Contact Centers administered the following actions to meet the additional demand:

1. Extended the operating hours of the Fresno, San Jose and Stockton centers for additional coverage
2. Used overtime staffing augmentation in all Contact Centers
3. Deployed Credit and Records Center staff to assist in call handling for emergency and outage calls
4. Used Outage Status and Reporting automated applications extensively
5. Offered the callback request automated application
6. Used call messaging-call routing applications to provide customized outage status messages to customers
7. Performed outbound automated and live agent call-outs to affected customers.

The January 2008 Storms call volume for the seven-day period from January 4 to January 10 was 2,017,080 calls, compared to 325,811 calls for the same one-week period in 2007, when there were was a normal volume of calls. Table 6 shows the daily volume and the daily percentage amounts over the 2007 level of calls, resulting in a total call volume for this period in 2008 that was 519 percent higher than the same one-week period in 2007. Note that although the January 2008 Storms began on January 3, 2008, the ramp-up in call volume occurred the next day, as many customers waited until service had been out for several hours before they called the Contact Centers.

TABLE 6
PACIFIC GAS AND ELECTRIC COMPANY
CONTACT CENTERS' CALL VOLUME DURING JANUARY 2008 STORMS

Day of Week	Date	Call Volume	% Above Normal
Friday	1/04/08	975,928	1,570%
Saturday	1/05/08	469,059	1,844%
Sunday	1/06/08	182,250	1,215%
Monday	1/07/08	144,132	99%
Tuesday	1/08/08	98,654	78%
Wednesday	1/09/08	72,924	41%
Thursday	1/10/08	74,133	49%
Total		2,017,080	519%

During this period of exceptional call volume PG&E recorded a total of 4 occurrences where a customer received a busy signal. This represents less than 1% of the total call volume received.

The PG&E employees, contract crews and mutual assistance crews worked extended hours to restore service in a safe and timely manner. Many customers acknowledged PG&E's heroic efforts in restoring service. This was exemplified in letters to media groups and company officers praising PG&E and its employees for their hard work restoring service.

C. Conclusion

The January 2008 Storms were one of the single most significant catastrophic events to affect the electric distribution system since the December 1995 and December 2002 Storms. The impacts were felt across the entire service territory causing significant incremental costs in almost every division. In response to the January 2008 Storms, PG&E implemented its Emergency Operations Plan and activated to a Level 3 emergency status to respond to all areas and customers affected by the storms. Area Emergency Centers (AECs), Operations Emergency Centers (OECs) and the centralized Operations Coordination Center (OCC) worked together to coordinate overall restoration efforts and the movement of resources and materials to hardest hit areas. PG&E augmented its construction resources by requesting mutual assistance from neighboring

utilities and hiring additional contract labor resources. PG&E's actions in response to this disaster were necessary and reasonable given the extensive damage caused by the storms and the number of customers affected by service interruptions. PG&E acted responsibly and reasonably to ensure the safety of the public and to restore service to the large number of customers as quickly and efficiently as possible.