



California Public Utilities Commission Committee on Finance and Administration



Report on Strategic Directive 03 – Reliability and Resiliency
Directors, Edward Randolph, Raminder Kahlon, & Cynthia Walker



Strategic Directive 03 – Reliability and Resiliency

1) Assure an adequate supply of regulated services and adequate infrastructure to deliver the services.

2) Assure the quality of products and services provided by regulated entities.

3) Assure that the utility systems are resilient and capable of recovering from adverse events—such as accidents, natural disasters, and those related to cyber and physical security.

4) Assure regulated entities have proactive maintenance programs that are adequate verifiable, and auditable.





Long Term Planning and Procurement

Since 2012, the CPUC has **identified and approved 18,000 MW of new resources** needed in California by 2022.

- 6,895 from renewable resources.
- 900 – 1,300 MW of preferred and/or storage, including up to 300 MW for SDG&E and 600 or up to 1,000 MW for SCE.
- Approximately 5,000 MWs of gas plants.

Of that the following is online:

- 10,791 MW of renewable resources.
- 200 MW of preferred resources (most Preferred Resources are contracted for online dates after 2018).
- 3,131 MWs of gas plants have become operational, with an additional 1,882 MW expected by 2020,

Between 2012 and 2022 approximately **13,000 MWs of natural gas capacity will be retired** due to once-through cooling requirements.





Natural Gas Planning

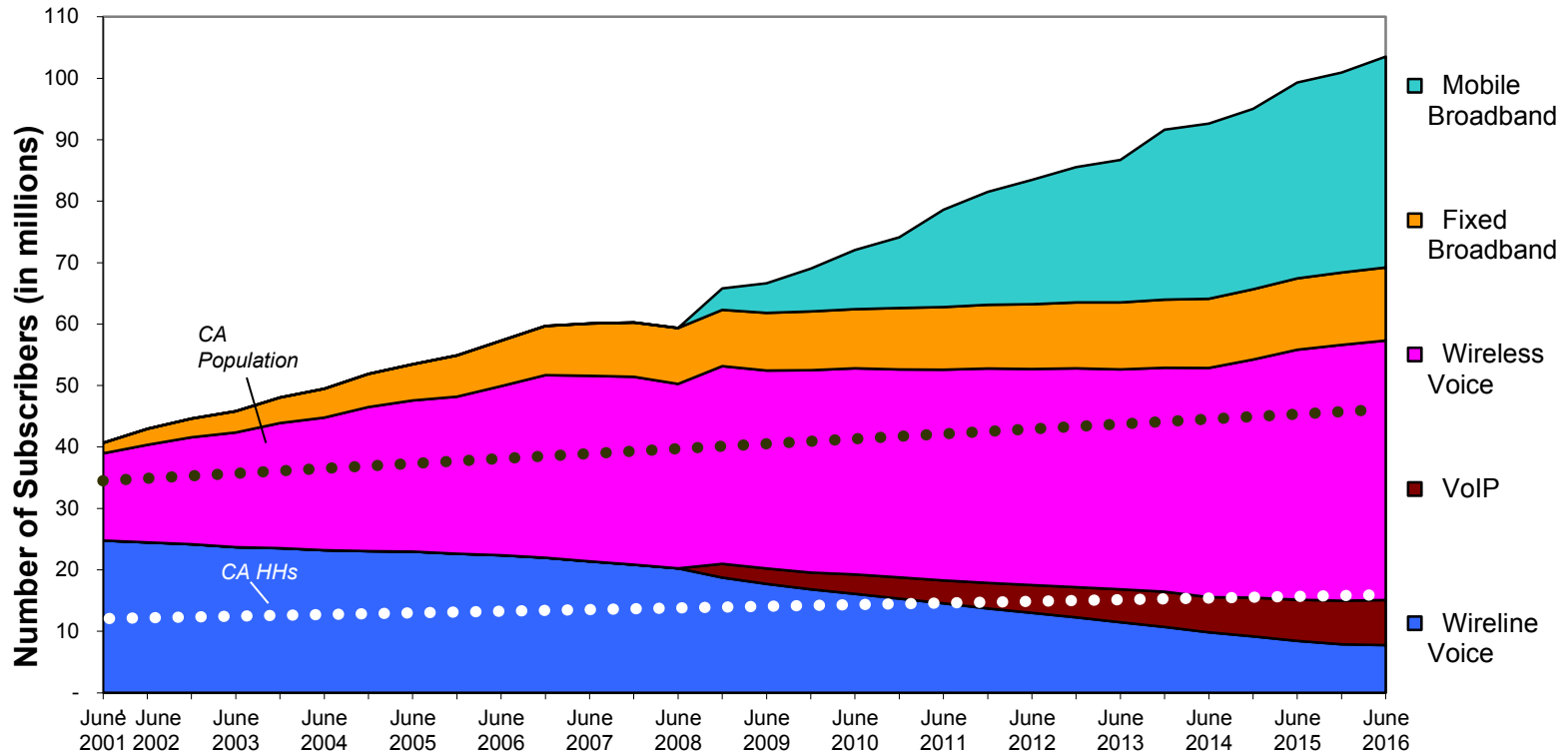
	PG&E	SoCalGas	SDG&E
Miles of pipeline reliability projects since 2012	Number not available at this time	480	6.55
Number of Curtailment events and number of noncore customers impacted in 2017	Number not available at this time	28 events with 64 impacted noncore customers	1 curtailment impacting 4 customers





Connections in California

Subscribership Trend of All Communications Services In California by Technology June 2001 - June 2016 (in Millions of Subscriptions)



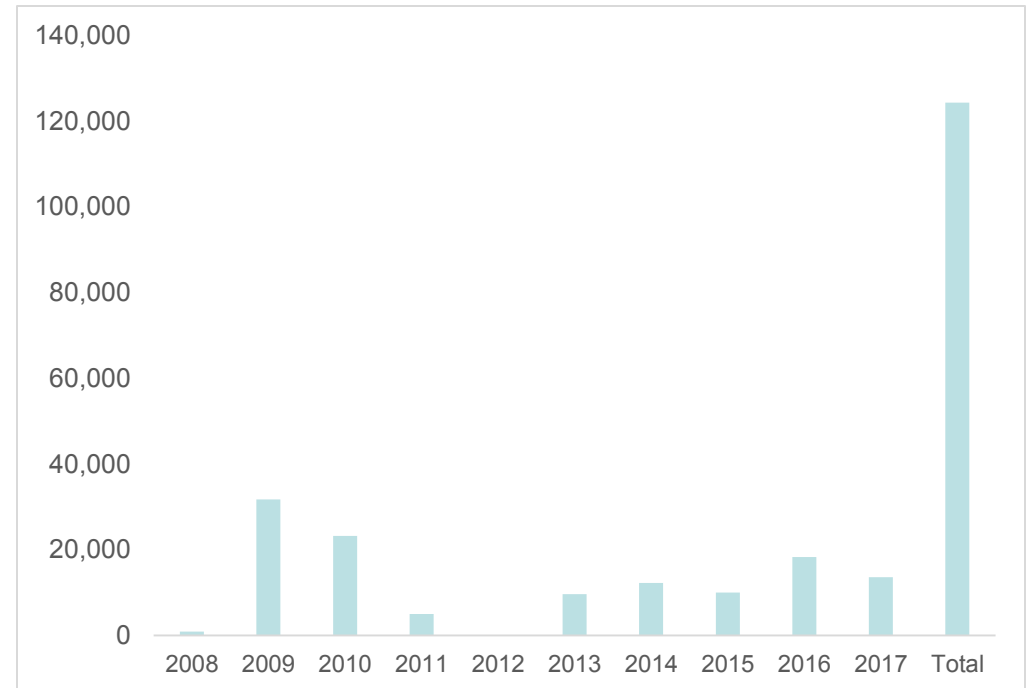
sources: FCC Form 477 filings, June 2001 - June 2016; US Census Bureau





CASF Infrastructure Grant & Loan Account Connections

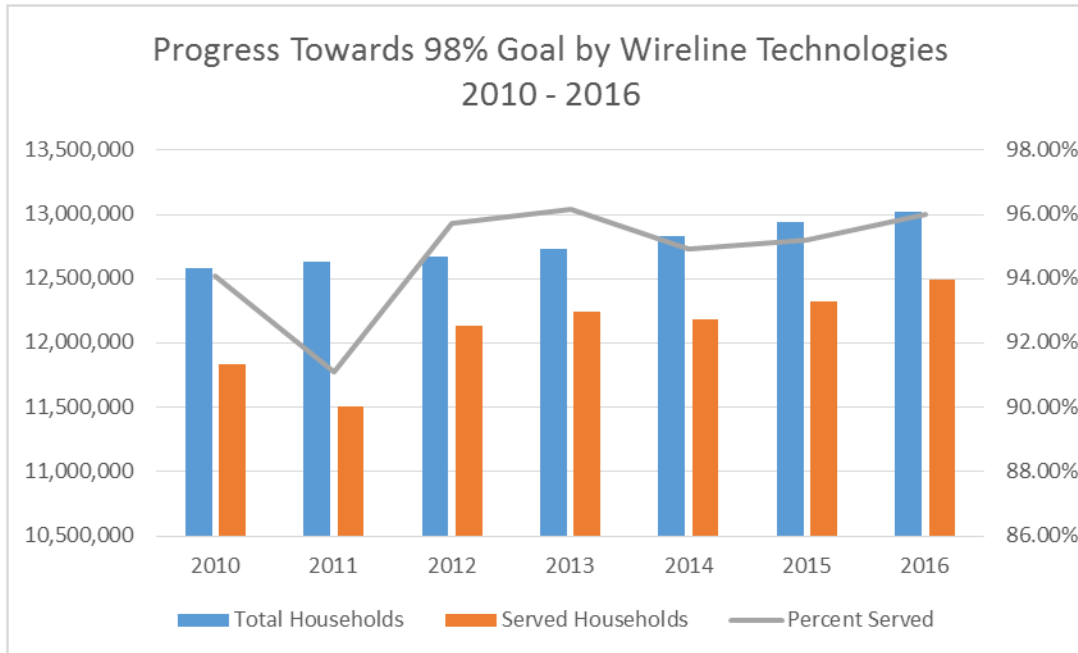
Year	Potential and Direct Connections (Households)
2008	912
2009	31,695
2010	23,173
2011	5,000
2012	
2013	9,595
2014	12,199
2015	9,966
2016	18,249
2017	13,543
Total	124,332





Progress Toward the 98% Goal (Wireline)

Year	Total Households	Served Households	Percent Served				
2010	12,577,498	11,832,885	94.08%				
2011	12,633,402	11,509,109	91.10%				
2012	12,675,875	12,134,058	95.73%				
2013	12,731,222	12,241,235	96.15%				
2014	12,830,035	12,180,932	94.94%				
2015	12,941,948	12,323,230	95.22%				
2016	13,020,413	12,494,995	96.00%	Speeds are at least 6 Mbps down AND 1 Mbps up)			





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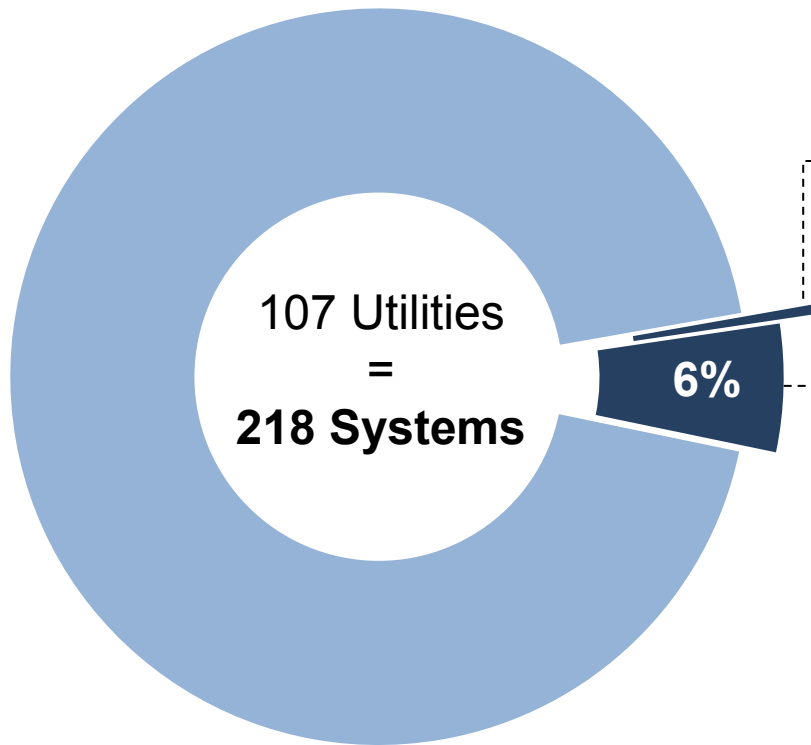
4) Assure regulated entities have proactive maintenance programs that are adequate verifiable, and auditable.





Water Utilities

Primary Max Contaminant Level (MCL) Violations



14 Water Systems above MCL

- 1 Continuous
- 13 Intermittent

Contaminants:

- a) Bacteriological/Coliform (6)
- b) Radioactivity/Gross Alpha (3)
- c) Lead (2)
- d) Copper (2)
- e) Arsenic (1)
- f) Nitrate (1)
- g) Aluminum (1)

2015 & 2016





Water Utilities

School Lead Testing as of September 2017

Assembly Bill 746

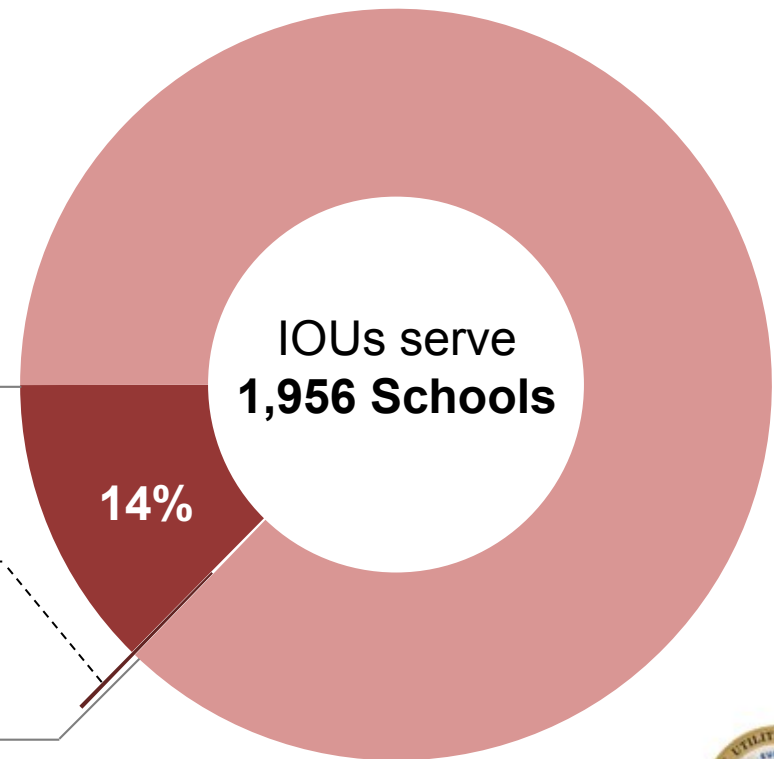
(Approved Oct 13, 2017; Effective Jan 1, 2018)

- All Community Water Systems must test for lead in every school served and built before 2010 by **July 1, 2019**
- Lead level limit < **15 ppb**

282 Schools Tested

- **4** over limit
- Corrective actions taken

- **423 Total Requests**





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Electric System Reliability

2016 Statistics

- **SAIDI** - Total Minutes Every Customer was Without Power due to sustained outages
 - PG&E = 106.6 minutes per customer
 - SCE = 134.48 minutes per customer
 - SDG&E = 86.01 minutes per customer
- **SAIFI** – Number of sustained customer outages experienced by customers
 - PG&E = 1.021
 - SCE = 1.10
 - SDG&E = 0.677





Pacific Gas & Electric (PG&E) System Indices (2007-2016)

Year	Major Events Included		Major Events Excluded	
	SAIDI	SAIFI	SAIDI	SAIFI
2007	162.4	1.254	144.8	1.204
2008	424.0	1.575	156.9	1.208
2009	211.8	1.316	134.3	1.119
2010	249.5	1.394	130.2	1.106
2011	278.8	1.267	109.7	0.966
2012	141.4	1.125	111.2	1.031
2013	117.8	1.065	96.4	0.964
2014	133.8	1.044	92.8	0.879
2015	131.8	0.967	80.7	0.787
2016	106.6	1.021	93.7	0.940





Southern California Edison (SCE) System Indices for (2007-2016)

YEAR	Total System Indices (All Interruptions Included)		Total System Indices (Major Event Days Excluded)	
	SAIDI	SAIFI	SAIDI	SAIFI
2007	151.32	1.10	85.34	0.88
2008	118.91	1.06	99.35	0.95
2009	105.80	0.90	88.77	0.83
2010	140.91	1.05	98.69	0.82
2011	232.39	1.04	108.15	0.91
2012	108.13	0.89	100.70	0.86
2013	102.61	0.91	94.48	0.88
2014	112.10	0.97	92.30	0.86
2015	114.83	0.92	100.15	0.86
2016	134.48	1.10	109.98	0.99





San Diego Gas & Electrical (SDG&E) System Indices for (2007-2016)

SDG&E Electric System Reliability Data 2007-2016					
	MED Included			MED Excluded	
Year	SAIDI	SAIFI		SAIDI	SAIFI
2007	180.99	0.539		54.89	0.477
2008	59.17	0.517		59.17	0.517
2009	67.06	0.542		49.71	0.466
2010	85.37	0.652		63.36	0.520
2011	567.59	1.472		53.43	0.471
2012	64.36	0.533		64.36	0.533
2013	75.03	0.561		59.96	0.472
2014	75.81	0.632		64.60	0.603
2015	58.11	0.530		57.92	0.526
2016	86.01	0.677		72.75	0.620





Emergency Response Plans – Water Utilities



- California Water Service
- California-American Water Company
- Golden State Water Company
- Great Oaks Water Company
- Liberty Utilities
 - Apple Valley Ranchos
 - Park
- San Gabriel Valley Water Company
- San Jose Water Company
- Suburban Water Systems





Emergency Response Plans – Electric and Gas Utilities



- Filed Under General Order 166
- All Electric and Gas Emergency Plans Received and Reviewed by SED.





General Order 133D

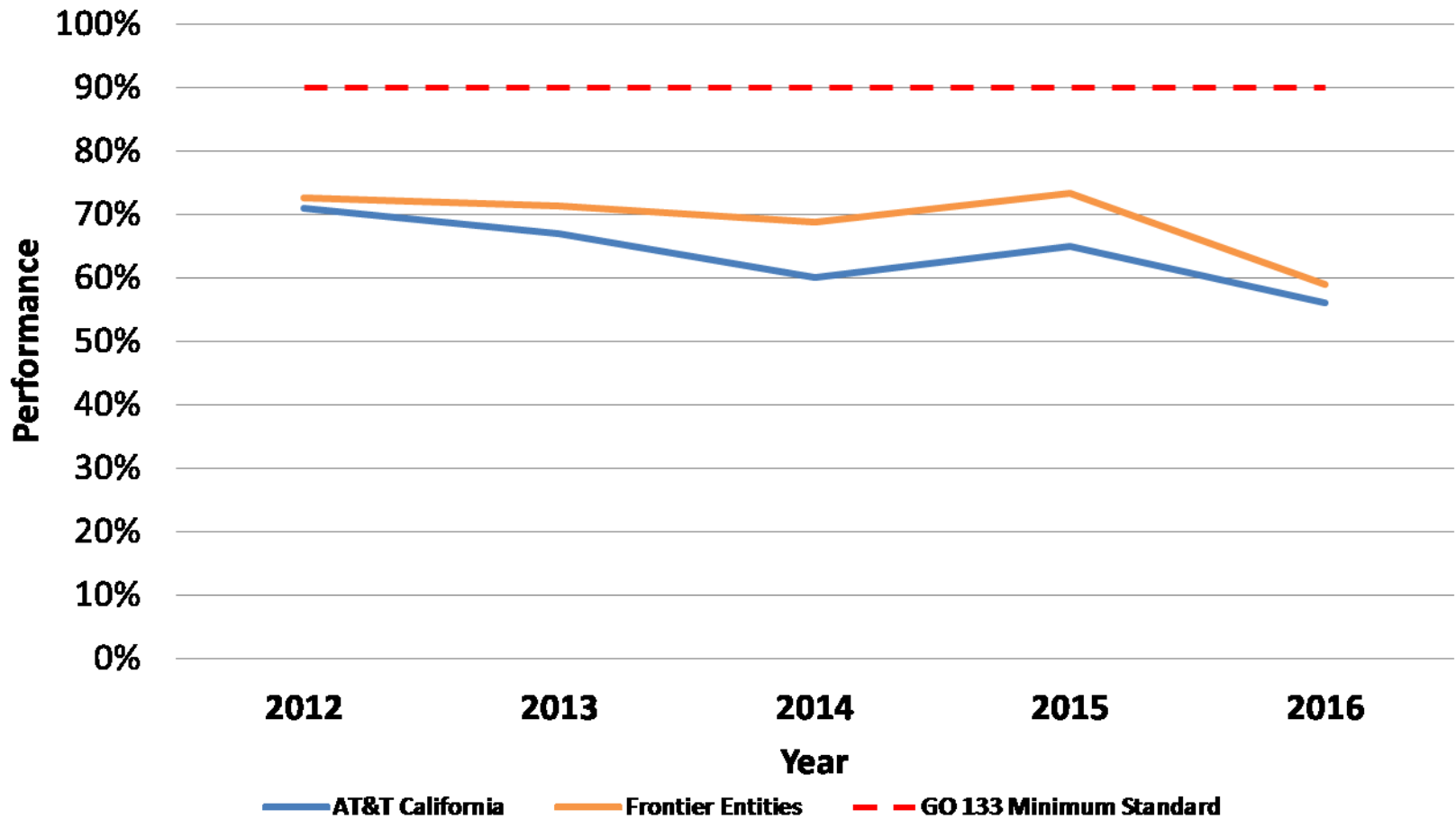
- 5 measures:
 - 1. Installation Interval**
 - 2. Installation Commitments**
 - 3. Customer Trouble Reports**
 - 4. Out of Service Repair Interval**
 - 5. Answer Time**
- Major Service Outage Reporting
- Fines for Missed Measures
 - Annual, beginning 2017
 - Option to re-invest double the fine amount in service quality improvements





Out of Service Measure

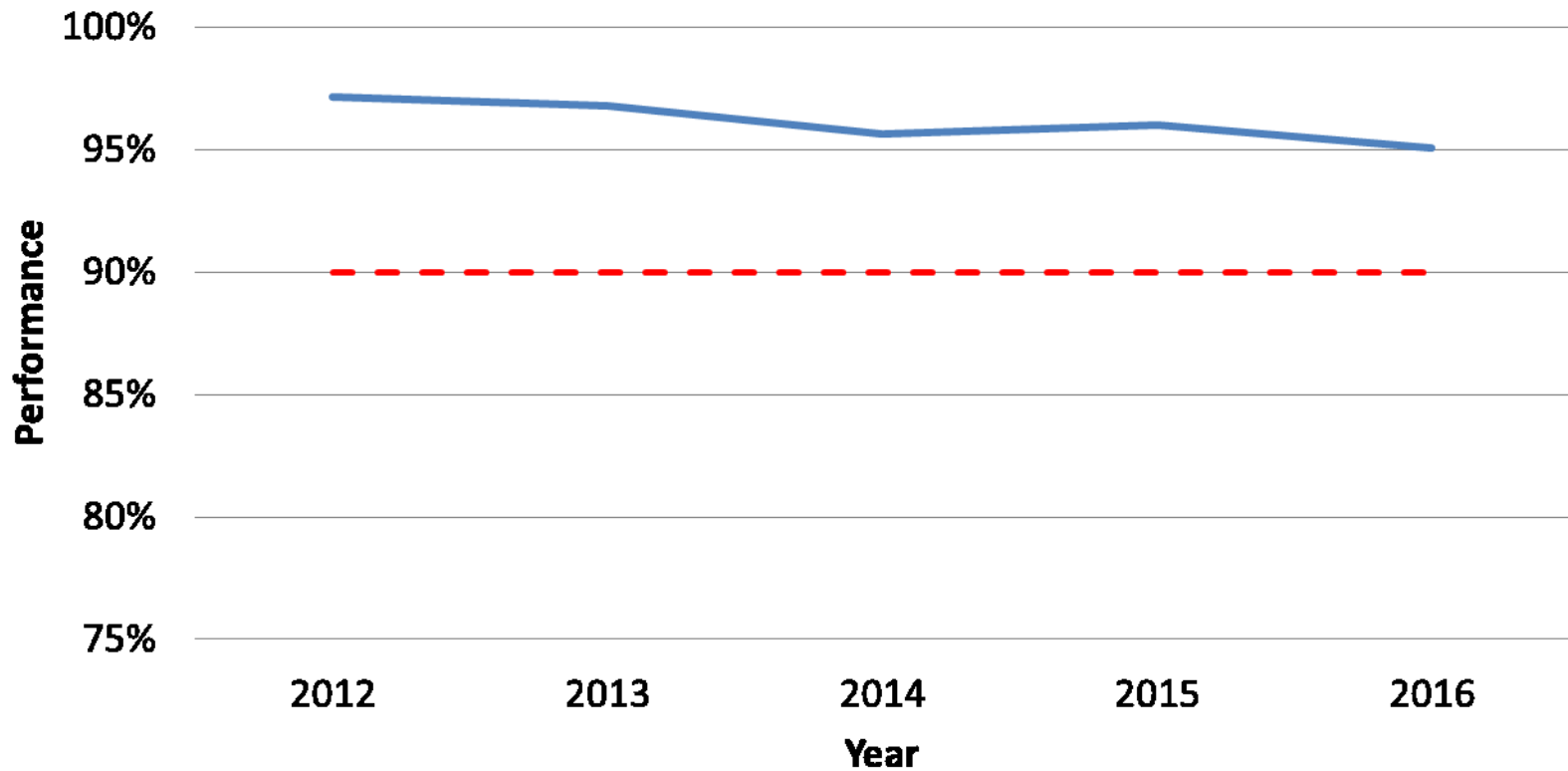
Out of Service Repair Interval - AT&T and Frontier





Out of Service Measure

Out of Service Repair Interval - GRC ILECs



— GRC ILECs Average Performance - - GO 133 Minimum Standard





Major Service Outages

- Reports submitted by all carriers in California for Major Service Outages
- Reporting threshold at 30 minutes for
 - 900,000 user minutes
 - 1350 DS3 Minutes (transport outages)
 - 911 special facility or Public Safety Answering Point
 - DS3 Simplex condition (5 days, pre-outage condition)





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Assure regulated entities have proactive maintenance programs that are adequate verifiable, and auditable

Safety And Enforcement Division performs a variety of assurance activities to validate that the regulated entities maintain programs that are adequate and in compliance with Commission's General Orders.

Safety and Reliability assurance activities include:

- Conducting more than 80 gas and electric utility and power plant safety inspections/audits and 11 electric inspections/audits and conducting
- Monitoring more than 120 forced and 170 planned outages that were reported by natural gas and renewable power plant
- Investigation of more than 500 incidents and customer complaints
- Taking enforcement actions for violations of applicable laws and regulations, resulting in more than \$20 million of fines and penalties of electric and gas utilities in 2017

CPUC staff also review variety of reports and metrics submitted by eclectic and gas utilities that indicate the effectiveness of their maintenance programs. Specific questions should be directed to Safety and Enforcement Division.





Lessons Learned From Recent Events

Wildfires have shown that reliability and resilience needs to focus not just on system wide numbers but on ability of individual customers to have service and their lives restored.

- Need to develop permanent protocols to help individual customer restore service and no costs.
- Need to develop metrics to measure utility's interactions with customers and their ability to restore service and avoid disruptions in service.





Compliance with Strategic Directive 03

- CPUC staff believe the organization is substantially in compliance with SD-03





Questions?

