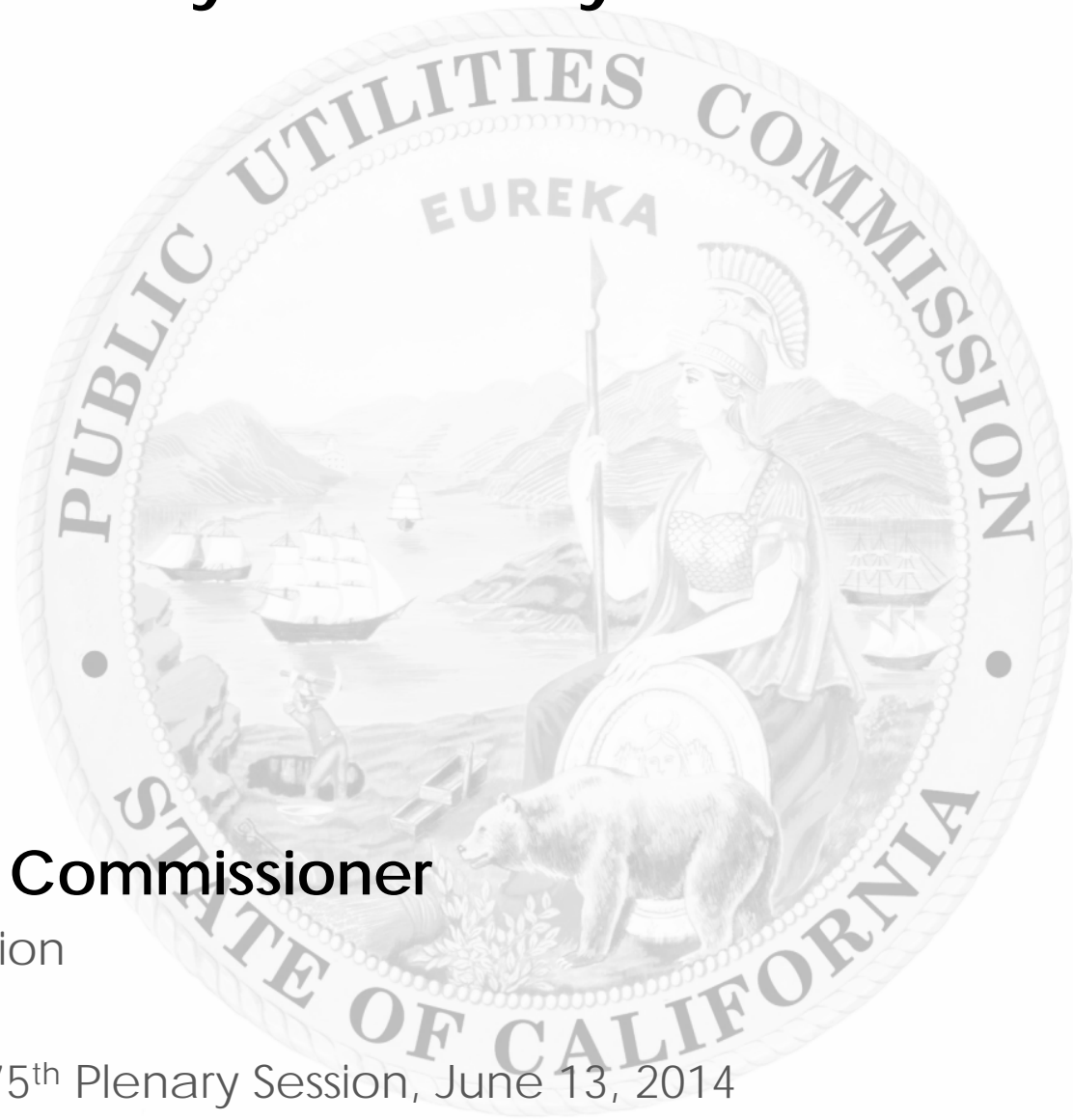




Addressing Physical and Cybersecurity Threats to the Electric Grid



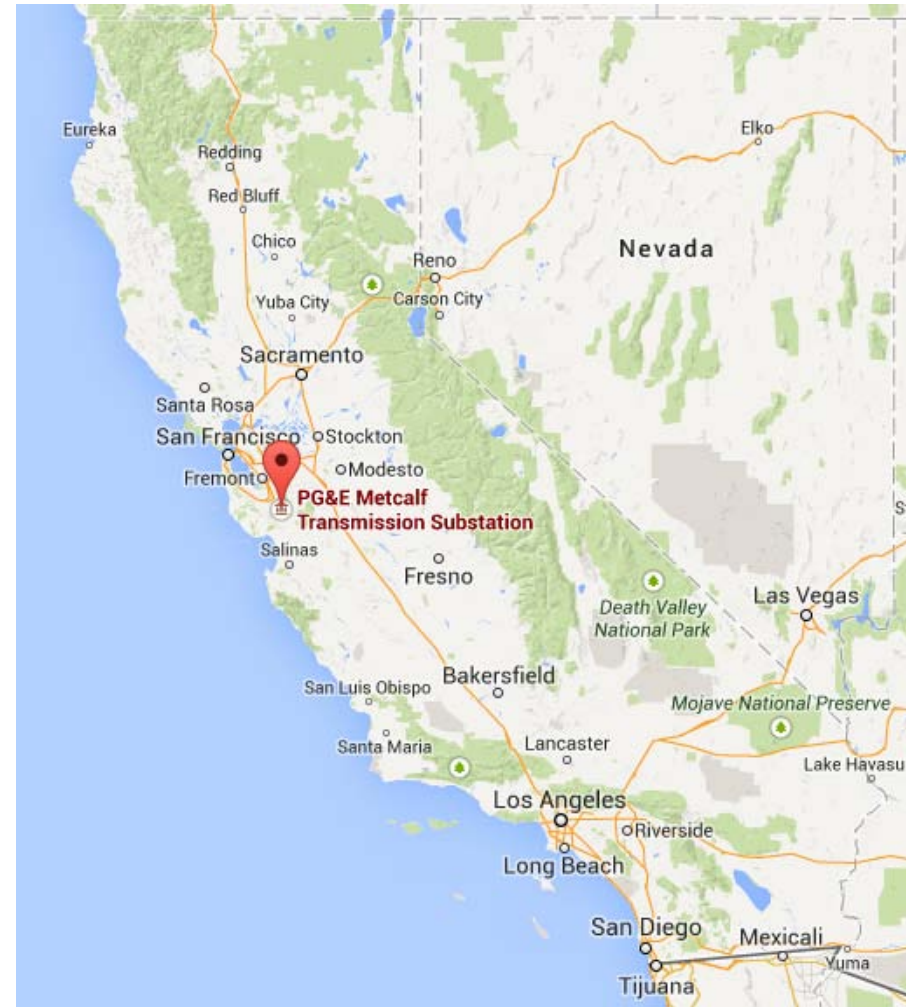
Catherine J.K. Sandoval, Commissioner

California Public Utilities Commission

Harvard Electricity Policy Group 75th Plenary Session, June 13, 2014



Metcalf Substation Incident – April 16, 2013, San Jose, California





Metcalf Incident Summary and Damage

Summary of Events

- 0058 Hours: AT&T Fiber Cut
- 0107 Hours: Level 3 Line Cut
- 0137 Hours: Fence Alarm Activated
- 0138 Hours: Initial Transformer System Alarm
- 0141 Hours: 911 Call – Shooting Reported
- 0151 Hours: Police Arrive On Scene

Damage

- 500kV Yard: 10 transformers
- 230kV Yard: 7 transformers
- 115kV Yard: 6 circuit breakers
- Total of 52,000 gallons of oil
- \$15.4 million in restoration costs
- No electrical outages
- Telecommunications outages in south San Jose





Metcalf Incident - Damages





Metcalfe Incident – Post event actions

- Immediate:
 - Investigate (FBI), State & Local police cooperation
 - Assess and Improve Security at critical substations
- Long Term:
 - Evaluate Electric IOU internal security measures
 - Cameras, Lighting, Fences
 - Enhanced Intrusion Detection
 - Evaluate external security measures
 - Coordinate with Law Enforcement
 - Coordinate with Communications Companies
- June 18th – CPUC Safety and Enforcement Division will hold a public workshop on the Metcalfe incident and the NERC standard.





Overview of FERC/NERC Activities

- March 7, 2014 – FERC directed NERC to submit standards to address threats and vulnerabilities to the physical security of critical facilities on the Bulk-Power System.
- The NERC Board of Trustees adopted the CIP-014-1 standard at their May 13, 2014 meeting and NERC is preparing the FERC filing.





Security-related Events Reported to FERC

Only 7 of 128 security-related events resulted in loss of load from 2011-2013.

	2011	2012	2013	Total Events	Events w/ Load Loss
Physical Attack	1	2	6	9	1
Vandalism	38	11	25	74	4
Suspected Cyber Attack	3	--	--	3	--
Suspected Physical Attack	12	22	5	39	2
Suspicious Activity	2	--	1	3	--
Total	56	35	37	128	7





Cybersecurity, State Initiative: California Energy Systems for the 21st Century (CES 21)

- The CPUC and the three California Investor Owned Electric Utilities are collaborating with Lawrence Livermore National Laboratory to improve energy systems to meet 21st Century needs.
- CES 21 uses the power of supercomputing to improve the cybersecurity of the electric system and integrate renewable technologies into the grid.
- \$35 million over a 5 year period allocated to CES 21.
- The utilities filed their proposed research projects on April 25, 2014. Research proposals under review, open for comment and Commission consideration.
- Proposed Cybersecurity Project:
 - \$33 million over 36 months.
 - Machine to Machine Automated Threat Response (MMATR).
 - Seeks to develop automated response capabilities for critical utility infrastructure
 - Develop standard language for cyber devices to improve grid security.

