



**Southwest Power Pool
REGIONAL ENTITY TRUSTEES MEETING**

July 24, 2017

Hyatt Regency Denver

Denver, Colorado

A G E N D A

8:00 a.m. – 3:00 p.m. MST

1. Call to Order/Introductions Dave Christiano
2. Antitrust Guidelines Monica Evans
3. Approval of Meeting Minutes – June 30, 2017 Dave Christiano
4. Long Term Reliability AssessmentLanny Nickell
Action Requested: SPP RE Trustees accept LTRA
5. Summer Assessment Review Alan Wahlstrom
6. 2Q Events and FAC Report Alan Wahlstrom
7. 2017 State of Reliability Report Mike Hughes
8. CIP Update..... Kevin Perry
9. Enforcement Report.....Joe Gertsch
10. President’s Report.....Ron Ciesiel
11. Outreach Activity Emily Pennel
12. Financial Report/Year-to-Date Financial StatementDebbie Currie
13. Staff Goals and MetricsRon Ciesiel
14. NERC Operating Committee Report..... Jim Useldinger
15. NERC Committee Representative Written Reports - Comments or Questions
 - 15a. Planning Committee Report Noman Williams
 - 15b. Compliance and Certification Committee Report..... Jennifer Flandermeyer
 - 15d. System Protection and Control Report Louis Guidry
 - 15e. Critical Infrastructure Protection Committee Eric Ervin
16. New Action Items Emily Pennel

*Relationship-Based • Member-Driven • Independence Through Diversity
Evolutionary vs. Revolutionary • Reliability & Economics Inseparable*



17. Future Meetings Dave Christiano

- Oct. 19 Misoperations Summit: KCPL/Kansas City
- Oct. 24-25 Fall Workshop: Dallas
- Oct. 30 Trustee Meeting: Little Rock
- Jan. 29 Trustee Meeting: Oklahoma City

The Trustees and SPP RE President will hold an executive session following the public meeting.

SPP Regional Entity Antitrust Guidelines

It is SPP RE's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or which might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.



REGIONAL ENTITY TRUSTEES BUDGET APPROVAL CALL

JUNE 30, 2017

MINUTES

10:00 a.m. – 11:00 a.m.

- 1. **Call to Order/Introductions****Dave Christiano**
Dave Christiano called the meeting to order at 10:05 am. In attendance: Ron Ciesiel, Monica Evans, Andrea Doucette, Dave Christiano, Gerry Burrows, Mark Maher, Steve Whitley.
- 2. **Antitrust Guidelines** **Monica Evans**
Monica Evans reviewed the guidelines.
- 3. **Approval of Meeting Minutes – April 24, 2017****Dave Christiano**
The Trustees approved the minutes.
- 4. **2018 SPP RE Business Plan & Budget Approval****Debbie Currie**
The 2018 SPP RE Business Plan and Budget is \$10.8 million, a decrease of less than 1% or \$72 thousand from 2017. While RE direct staffing remains stable, a reduction of ~1 FTE was made in the shared staff. Additional savings occurred with the completion of a major Information Technology project and reductions in travel and meeting costs.

The expenses have not changed from the preliminary budget that was reviewed at the April SPP RE Trustees meeting. We did not receive any stakeholder comments on the budget.

The final budget is due to NERC July 5. NERC posts all regional budgets for comment July 13. On August 10, NERC will present the NERC and regional budgets to the NERC Board of Trustees. NERC will submit the budget to FERC on August 24.

The Trustees unanimously approved the SPP RE 2018 Business Plan & Budget.

- 5. **Future Meetings**.....**Dave Christiano**

July 24 Trustee Meeting: Denver
Oct. 19 Misoperations Summit: KCPL/Kansas City
Oct. 24-25 Fall Workshop: Dallas
Oct. 30 Trustee Meeting: Little Rock
Jan. 29 Trustee Meeting: Oklahoma City

Chairman Christiano adjourned the meeting at 10:12 a.m.

Respectfully submitted,
Emily Pennel
SPP RE Trustees Secretary

2017 Long Term Reliability Assessment

July 24, 2017

Lanny Nickell

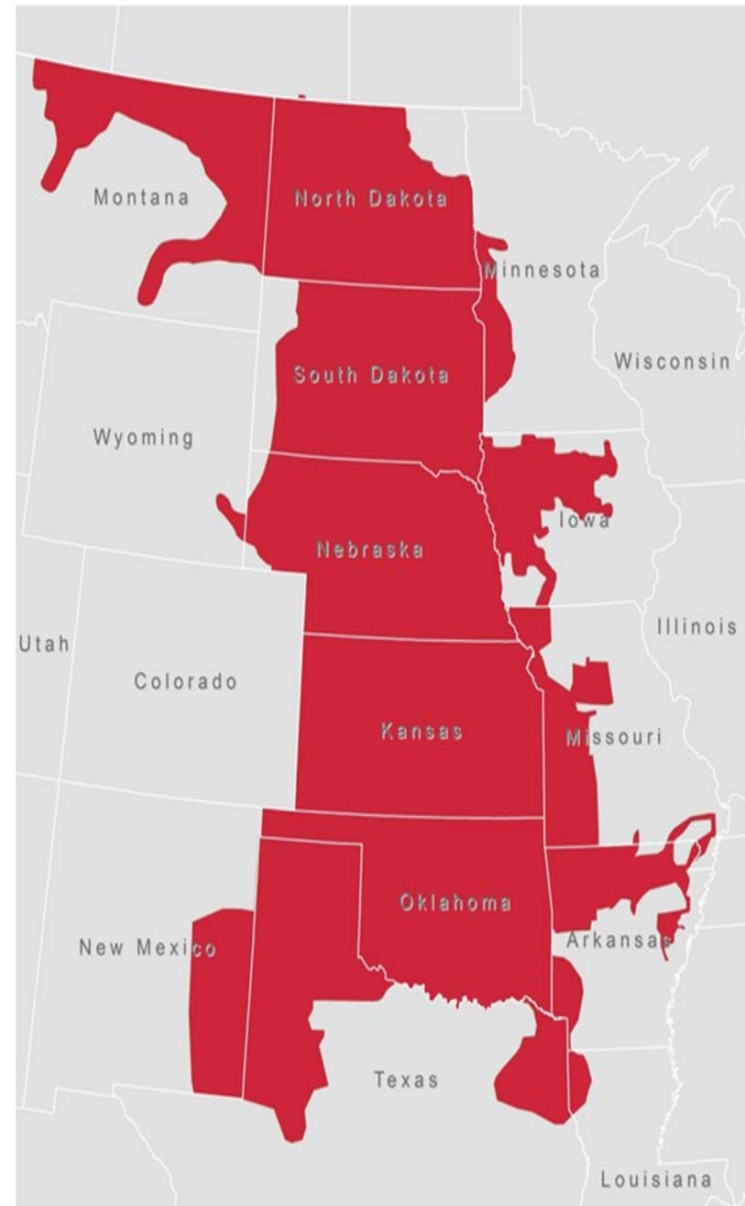
Vice President, Engineering

Assessment Staff

- Chris Haley, Planning Specialist III (SPP RTO)
 - chaley@spp.org
 - 501-614-3583
- Alan Wahlstrom, Lead Engineer (SPP RE)

Long Term Reliability Assessment

- Widely-read continent-wide publication
- Projected 10-year outlook (2017-2027) for SPP Planning Coordinator assessment area
 - Demand growth
 - Capacity adequacy
 - Operational reliability
- Primary objectives:
 - Qualitative outlook of region's reliability
 - Make recommendations for mitigations/actions as needed



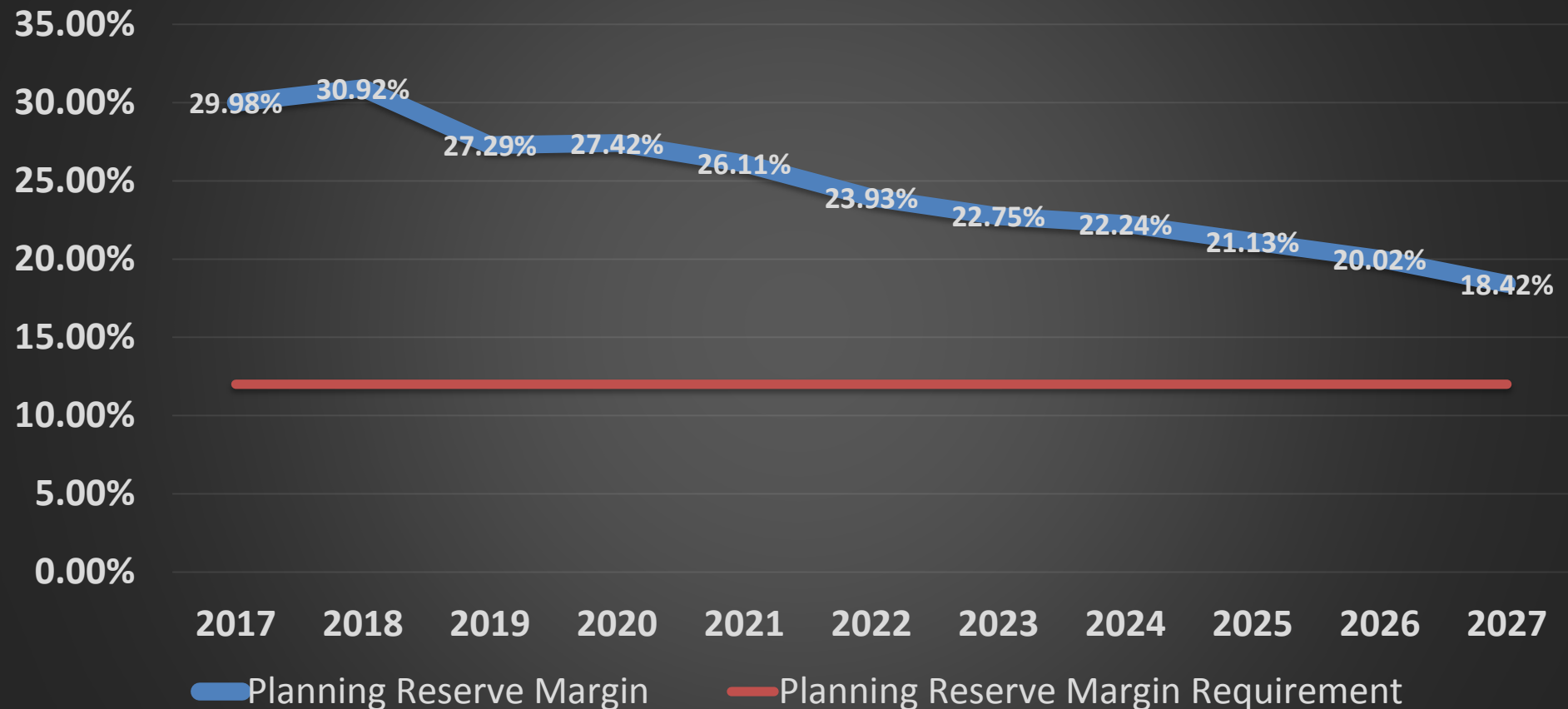
Assessment Process

- Created with data/information submitted by SPP Reporting Entities
- SPP staff validates and cross-checks data to verify consistency
- Undergoes peer review process at NERC prior to finalization
- SPP staff annually presents to SPP RE Trustees and Midwest Reliability Organization (MRO) Planning Committee

SPP Planning Reserve Margin

- 12% requirement for 2017 summer
 - If a member's capacity mix is at least 75% hydro, the margin is 9.89%

Planning Reserve Margin Summary



Existing Capacity

- ~67,039 MWs Existing Capacity in 2017
- ~64,377 MWs Existing Capacity in 2027
 - Existing generation available (Net Capability)
 - Includes Net Firm Transfers
 - Includes reported summer scheduled outages
 - Decrease in capacity due to retirements
 - At this point in time solar penetration will not impact the resource mix and/or reliability studies

New Generation

- **Tier 1 units**

- 376 MW in 2017

- 780 MW by 2027

Units that already have a Interconnection Agreement signed

- **Tier 2 units**

- 389 MW in 2017

- 407 MW by 2027

Units that have gone through phases of the Generation Interconnection process and have Interconnection Agreement pending

- **Confirmed retirements:**

- 53 MW in 2017 to 3,504 MW by 2027

- 61% coal

- 39% natural gas

Wind Generation

- Wind continues to create operational challenges
 - Thermal Congestion Management
 - Capacity Management
 - Ramping
 - Frequency
 - Voltage Stability
 - Transient Stability

Wind Generation

- ~3,500 MW 2017 wind accredited capacity
- 13,342 MW 2017 wind peak (in Feb.)
- Wind penetration increased from 38% peak in 2015 to 49.2% in 2016
 - 54.47% in early 2017
 - High penetration in winter and shoulder months

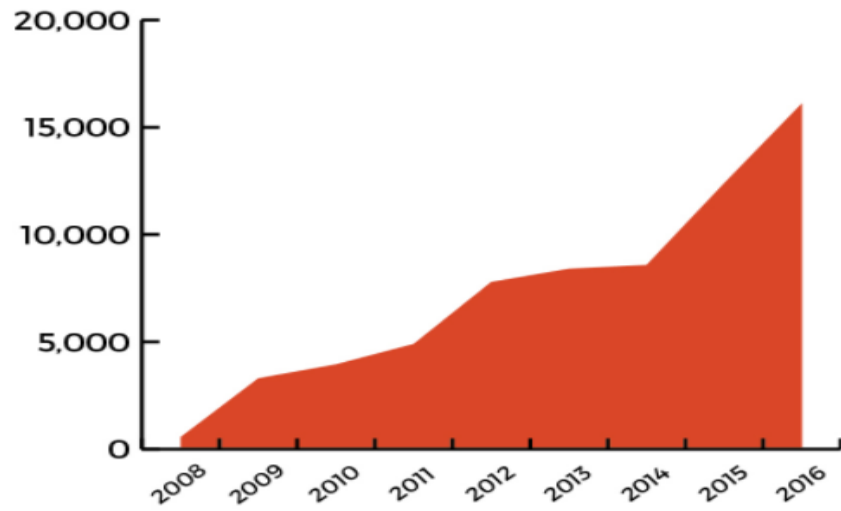
Wind Generation

- Installed wind-generation capacity increased in 2016 by more than 30%
 - 16 GW, up from 12 GW
- Generation Interconnection queue has over 35,000 MW of nameplate wind in various study phases

SPP's installed wind capacity has risen steadily and dramatically over the last several years.

2008:	~560 MW
2009:	~3,400 MW
2010:	~4,000 MW
2011:	~5,000 MW
2012:	7,790 MW
2013:	8,405 MW
2014:	8,583 MW
2015:	12,397 MW
2016:	16,114 MW

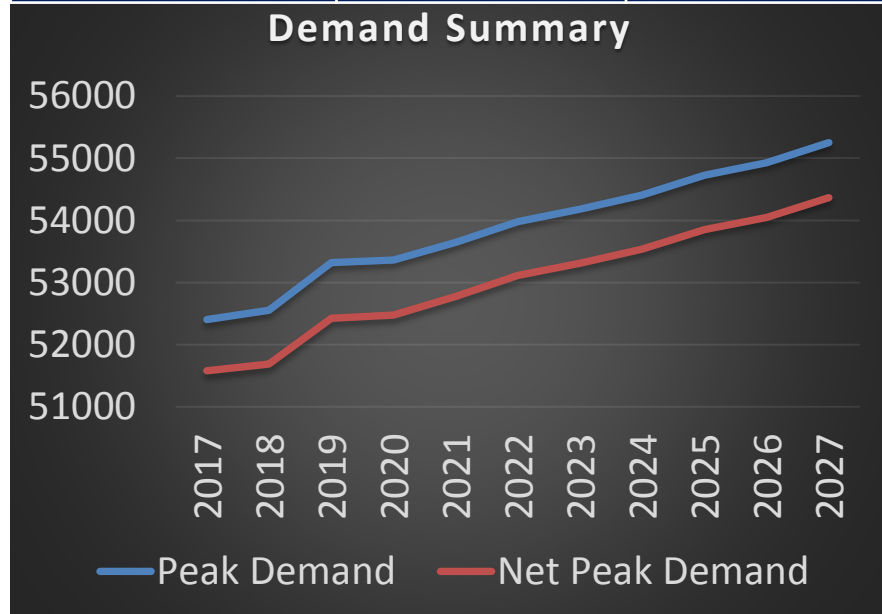
**Installed wind capacity:
2008-2016**
(Source: Annual State of the Market Reports)



Non-Coincident Demand

- SPP Assessment Area is a summer peaking region
- Peak Demand is aggregated non-coincident number based on member-submitted data
- Demand is based on 50/50 forecast
- Annual demand growth over the 10 year assessment timeframe is ~1%
- Net Peak Demand reflects the reduction of available Controllable and Dispatchable Demand Response

Year	Peak Demand	Net Peak Demand
2017	52,403	51,577
2018	52,554	51,687
2019	53,319	52,422
2020	53,361	52,476
2021	53,643	52,774
2022	53,981	53,116
2023	54,179	53,311
2024	54,409	53,537
2025	54,729	53,853
2026	54,929	54,049
2027	55,250	54,365



Transmission

- ~1,800 miles of new 100+ kV transmission expected to be constructed over 10-year assessment period



Reliability Issues

- Not anticipating reliability issues over assessment timeframe
- With plant retirements and as renewable resources are added, SPP will reach a point when it can no longer reliably utilize renewable generation for SPP's internal demand
 - Future renewables will have to be delivered to other regions
- Do not expect adverse reliability impacts resulting from fuel supply or transportation constraints
 - SPP staff continues to monitor this area to ensure there are no issues

2017 Summer Assessment

2017 Summer Assessment Demand

- 52,587 MW Total Internal Demand
- 828 MW Demand Response

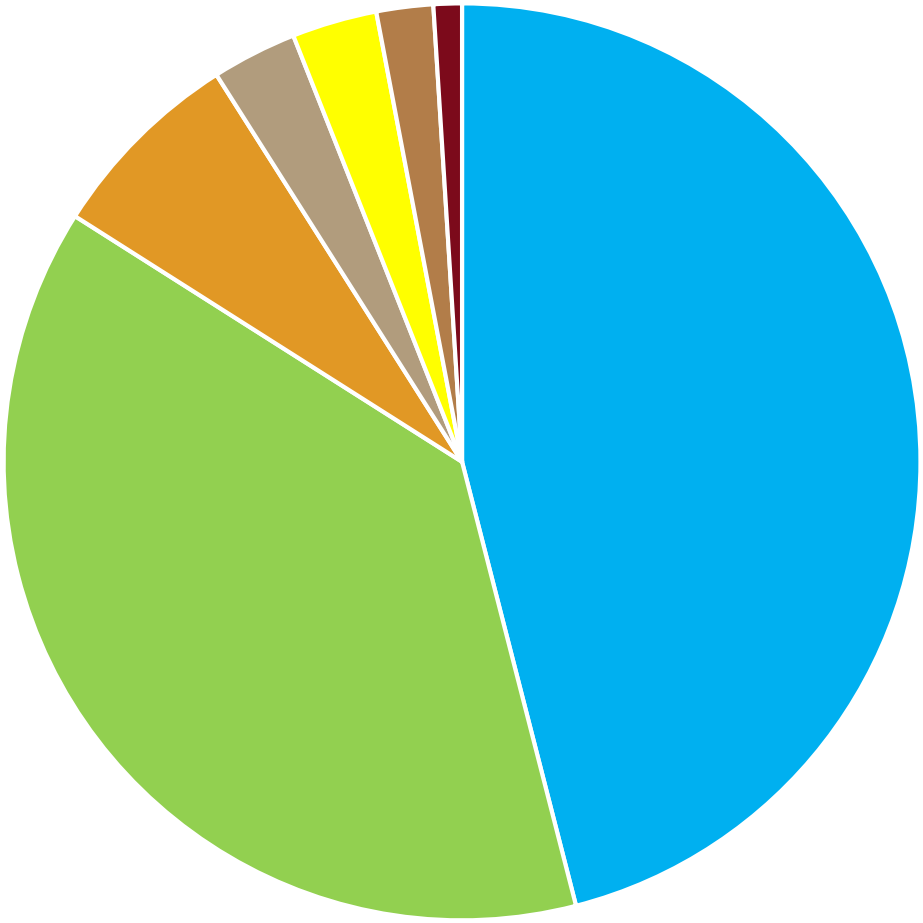
2017 Summer Assessment Resource Projections

- 65,092 MW Existing-Certain Capacity
- 67 MW Tier 1 Planned Capacity

2017 Summer Assessment Transfers

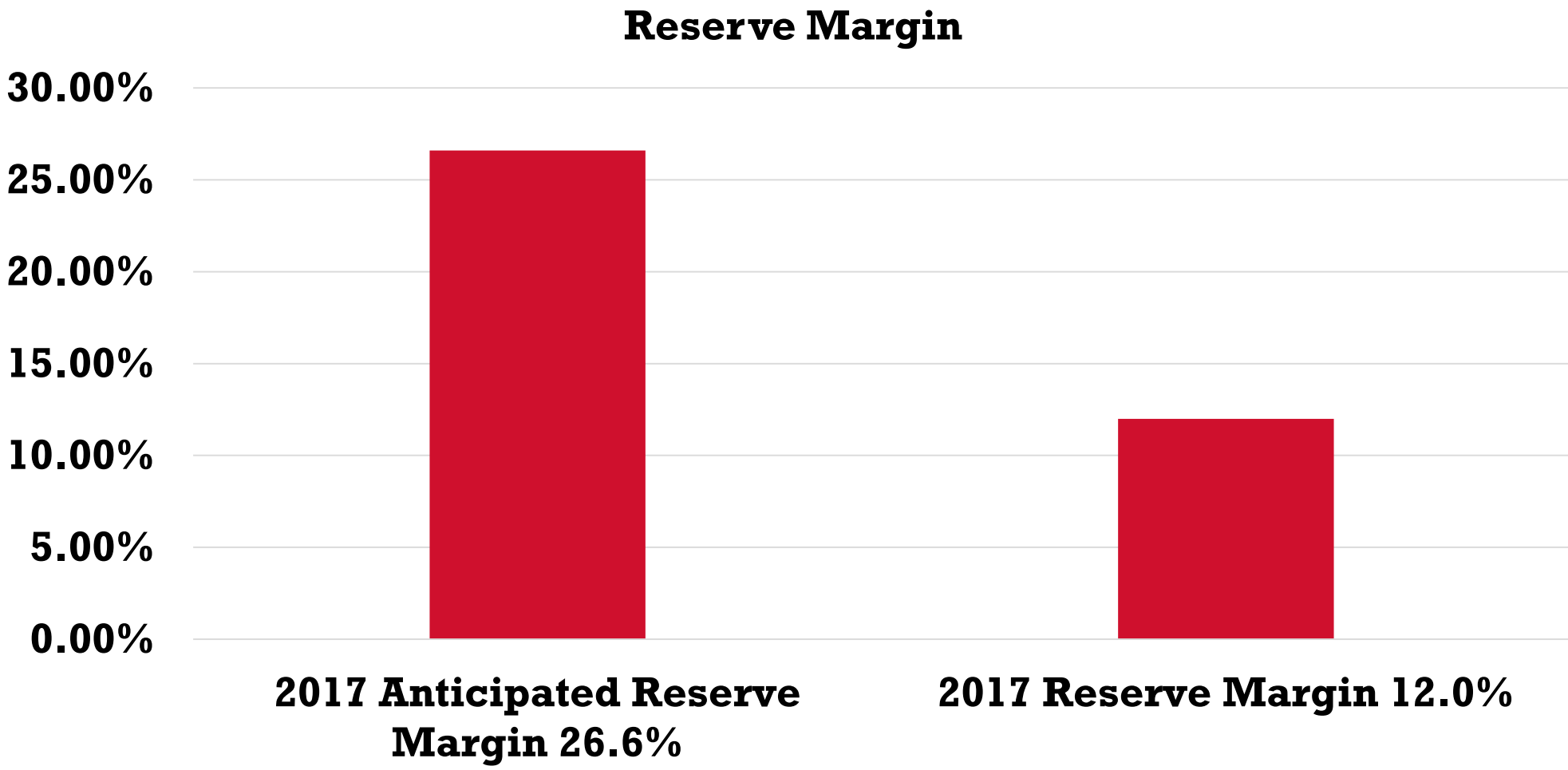
- 369 MW Net Firm Capacity Transfers
- 65,528 MW Anticipated Resources

Fuel Mix Summer Peak



■ Gas 46% **■ Coal 38%** **■ Hydro 7%** **■ Nuclear 3%**
■ Wind 3% **■ Petroleum 2%** **■ other 1%**

2017 Summer Assessment Reserve Margin



System Events Update

Alan Wahlstrom
Lead Engineer

July 24, 2017

SPP Regional Events (April 1 - June 30)

- Seven events occurred in SPP region during Q1 2017
- All events were in the lowest assignable risk category
 - Two category 1a. *Loss of three or more elements*
 - Five category 1h. *Partial loss of EMS*

Loss of External Data - Category 1h

- Verizon network problem caused incoming data to go down
- Invalid State Estimator
- Manually entered values until network problem was fixed



State Estimator database inconsistency

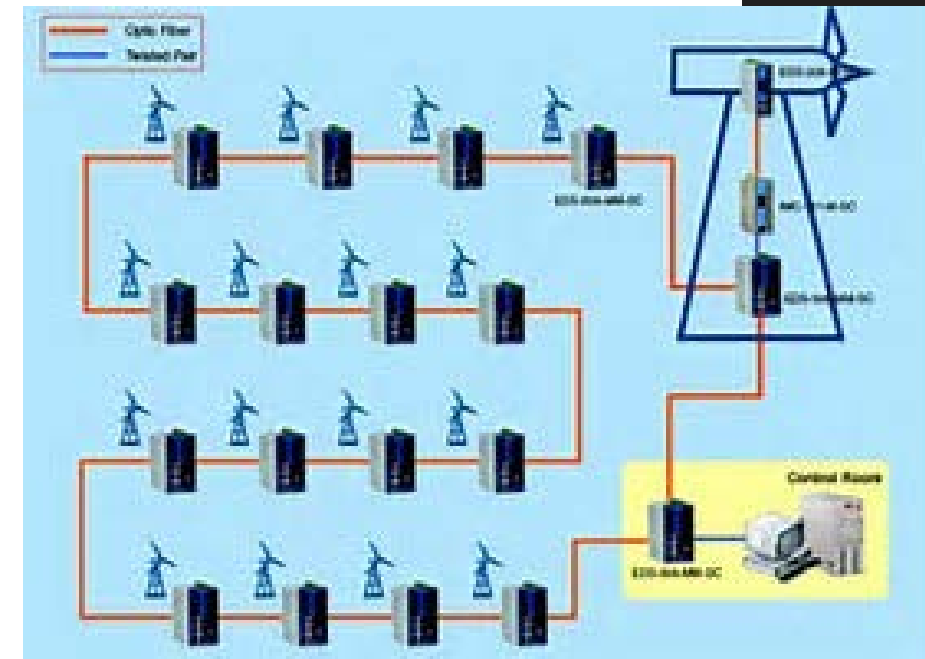
Category 1h

- Entity performed planned failover from primary to back-up database
- Inconsistencies prevented seeing correct results
- Failover back to primary database resolved the issue
- Bug was found in vendor software which did not adequately copy custom data tables to back-up systems



Loss of Real Time Contingency Analysis Category 1h

- Real Time Contingency Analysis program failed to run but system visibility continued to run
- Distribution opened a 34.5 KV breaker, isolating two windfarms that were not on the transmission EMS model. This caused a discrepancy.
- Modeling discrepancy corrected
- Transmission now requires Distribution Department to notify when windfarms on distribution system are disconnected



Loss of Visibility of Local SCADA information Category 1h

- Network connection was lost between primary and backup control centers
- Work was being performed at primary control center
- Operators were stationed at backup center
- Problem was due to a firewall device between primary and backup center



Complete Loss of Monitoring Capability

Category 1h

- Operations notified service staff and adjoining companies that SCADA was down
- It was determined that the firewall was blocking data
- Error in code caused firewall to stop passing data after 213 days
- Vendor is developing upgraded software



Multiple Circuit Outage - Category 1a

- High winds blew several structures down, causing a single line to ground fault
- Line with the fault tripped, reclosed, then tripped again
- When initial line was reclosed, additional lines tripped
- One line tripped due to not receiving a blocking signal
- 127 MW from a wind farm was lost due to the wind farm protection scheme that sensed the multiple line loss

Multiple circuit outages - Category 1a

- Line-to-ground fault on a 69 KV line
- 69 KV circuit breaker failed to operate
- This caused 161/69 KV transformer to trip, causing complete outage of the bus
- Rodent chewed insulation of the cable going to the relays at station



NERC Lessons Learned

Dispatched Reduction in Generation Output Causes Frequency Deviation

- Inadequate data definition caused transfer of incomplete data into economic dispatch unit commitment software
- Data gap caused unit commitment to assume resources offline, causing other units to start up
- Operators were unable to block the volume of instructions
- ACE was exceeded for 18 minutes

Lesson Learned

- Automated and manual controls for security-constrained economic dispatch software should be reviewed, tested
- A system operator and/or generator operator should be able to intervene to override automated dispatch signals
- System operators and support staff should have clear guidance and training on troubleshooting security-constrained economic dispatch software issues that may cause undesirable results

Loss of Monitoring Due to Authentication Software Update

- During a scheduled test of updated SCADA/EMS authentication software on the backup control center, entity experienced loss of remote monitoring and control
- Unable to transfer to primary control center
- Site localization settings were incorrectly configured

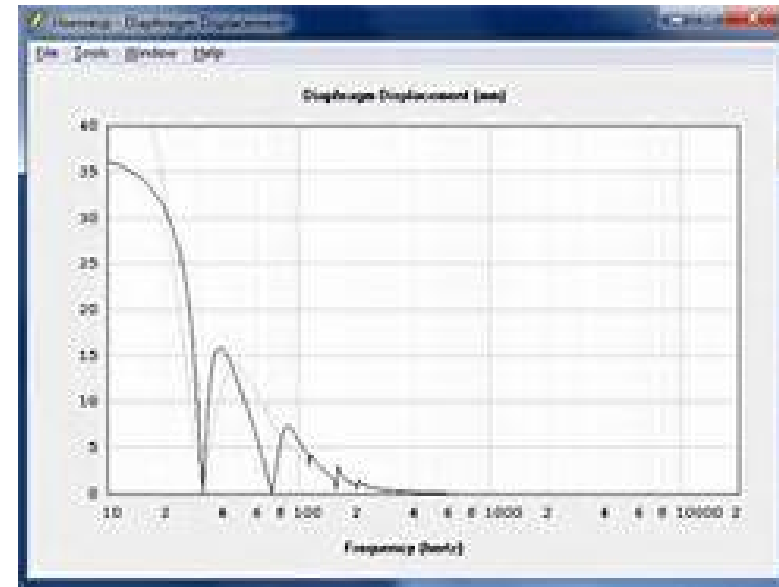


Lesson Learned

- Carefully review all localization settings
- Consider expanding SCADA/EMS test environment to provide for site failover testing
- Document the specific recovery procedure used in this event for all-servers-down startup
- Include SCADA/EMS support staff in training on loss of supervisory control

Line Frequency Excursion Causes UPS Shutdown and Control Center Evacuation

- A control center was evacuated due to automatic shutdown of SCADA workstations
- Shutdown was caused by a frequency excursion on the primary source transmission line that was feeding the control center
- Control center's 115 kV primary source frequency spiked to 65Hz due to events in a neighboring entity's system



Lesson Learned

- Four sources of power were available:
- However, control center evacuation was still initiated due to a transient on the in-service source
- UPS settings did not anticipate having a transient
- Entities need to ensure they understand their UPS settings, their UPS' limitations, and how to recover from various potential failure scenarios

NERC FAC Alert

NERC FAC Alert

Mitigation of all discrepancies is complete

- ~ 2,000 lines
- ~ 17,000 miles
- ~ 7,000 discrepancies corrected
- ~ 7 years

COMPLETE

2017 State of Reliability

July 24, 2017

SPP RE Trustees Meeting; Denver, Colorado

Mike Hughes

(501) 688-1712

SPP RE Lead Compliance Engineer

State of Reliability 2017

June 2017

RELIABILITY | ACCOUNTABILITY



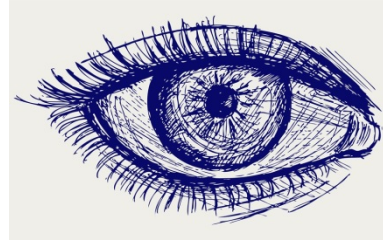
3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

State of Reliability Report

- Provides an objective view of reliability performance
- Identifies trends and risks to reliability
- Serves as risk-informed input to:
 - Prioritize steps to manage risk
 - Standards projects
- Enforcement Metrics



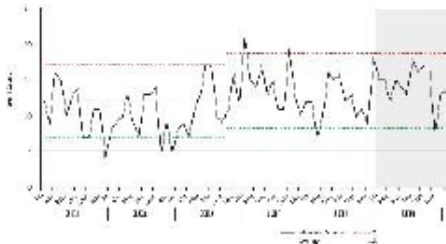
Look back



Look Forward



2016 Key Findings



Key Finding 1: No Category 4 or 5 Events in 2016

While the number of lower category events did not significantly decline, there were no Category 4 or 5 events and only two Category 3 events for the second consecutive year. Events on the Bulk Electric System (BES) are categorized sequentially from 1 to 5 with 5 being the highest in severity.

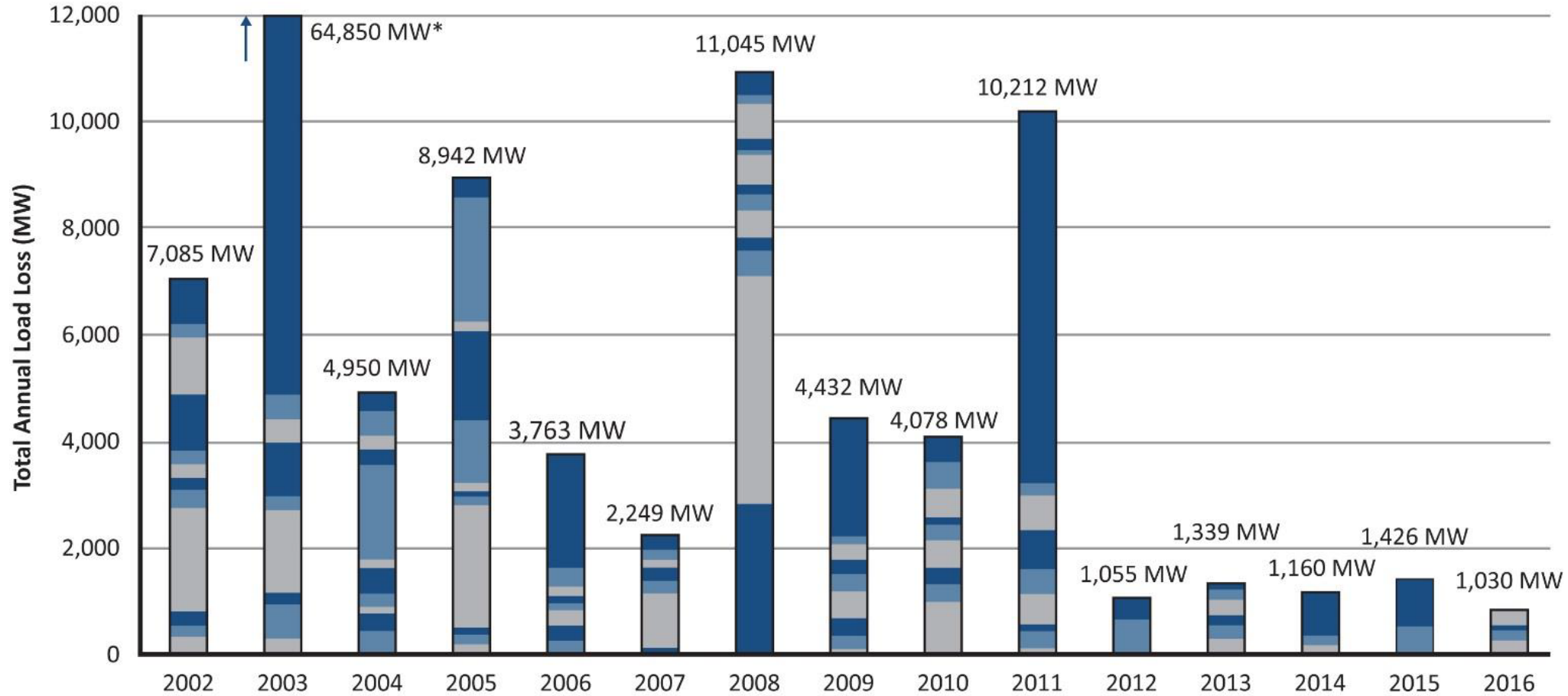
Event Criteria

1. The loss of 300 MW of firm load for 15 minutes or more
2. A Bulk Electric System (BES) emergency that requires manual firm load shedding of 100 MW or more
3. A BES emergency that resulted in automatic firm load shedding of 100 MW or more
4. A transmission loss event, contrary to design, of three or more BES elements

Categories for Load Loss

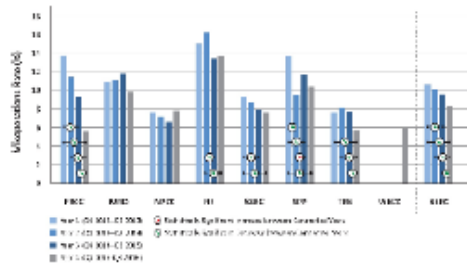
- Level 2 = 300 MW
- Level 3 = 2000 MW
- Level 4 = 5,000 MW
- Level 5 = 10,000 MW

Total Annual Load Loss (ERO)



Each band of color represents a different event.

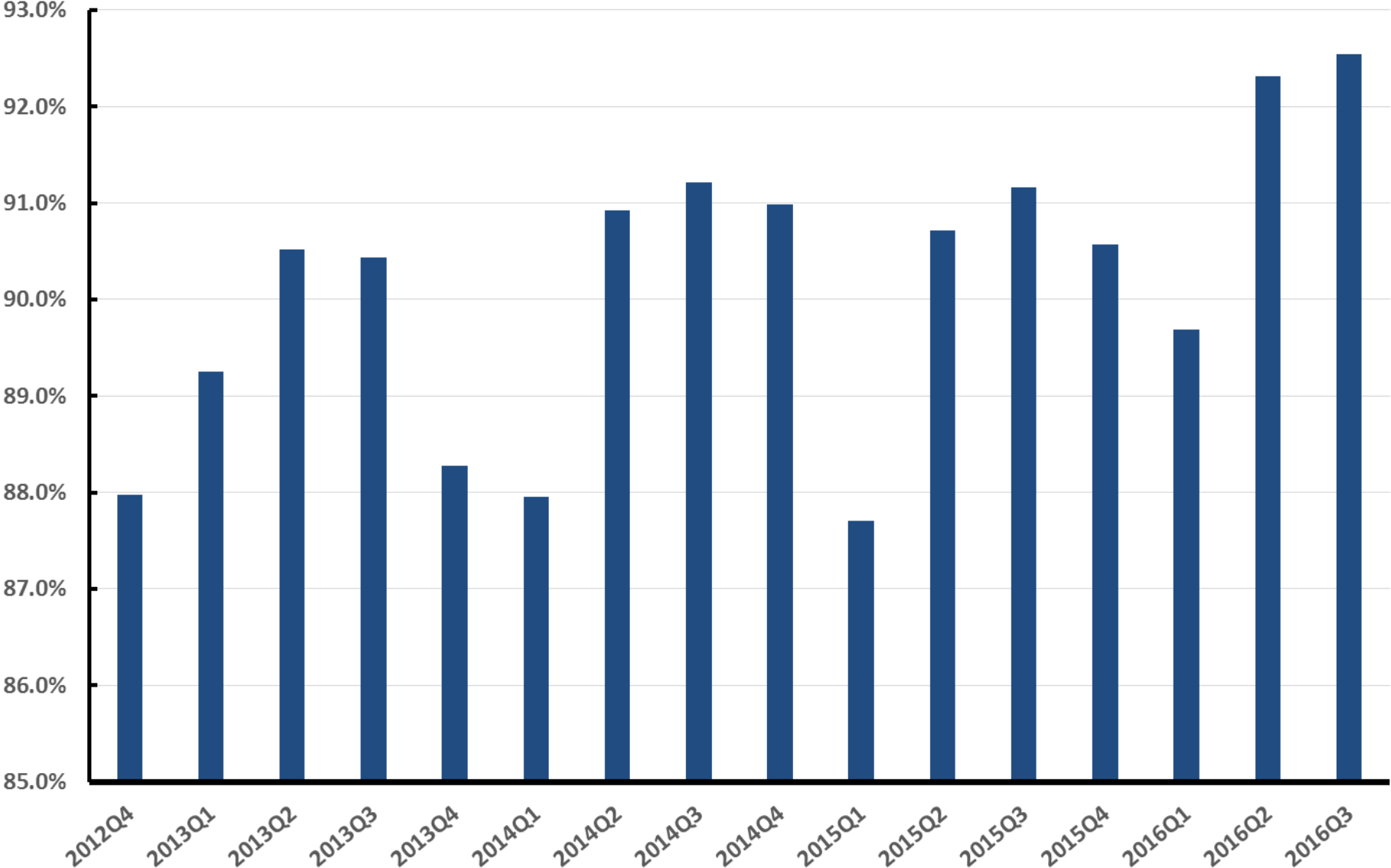
*Vertical axis scale has been reduced due to large value of 2003 NE blackout event.

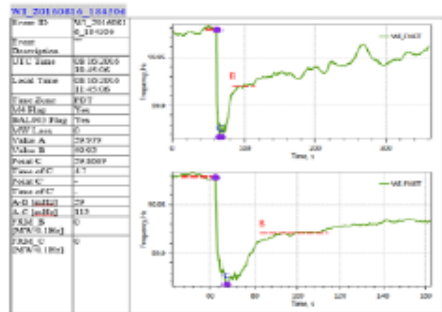


Key Finding 2: Protection System Misoperation Rate Continues to Decline, but Remains a Priority

The overall NERC misoperation rate is lower in 2016 than last year (8.7 percent, down from 9.5 percent), continuing a four-year trend of declining rates across North America. The three largest causes of misoperations in 2016 remained the same as in 2015: Incorrect Settings/Logic/Design Errors, Relay Failure/Malfunctions, and Communication Failures.

ERO Protection System Success Rate

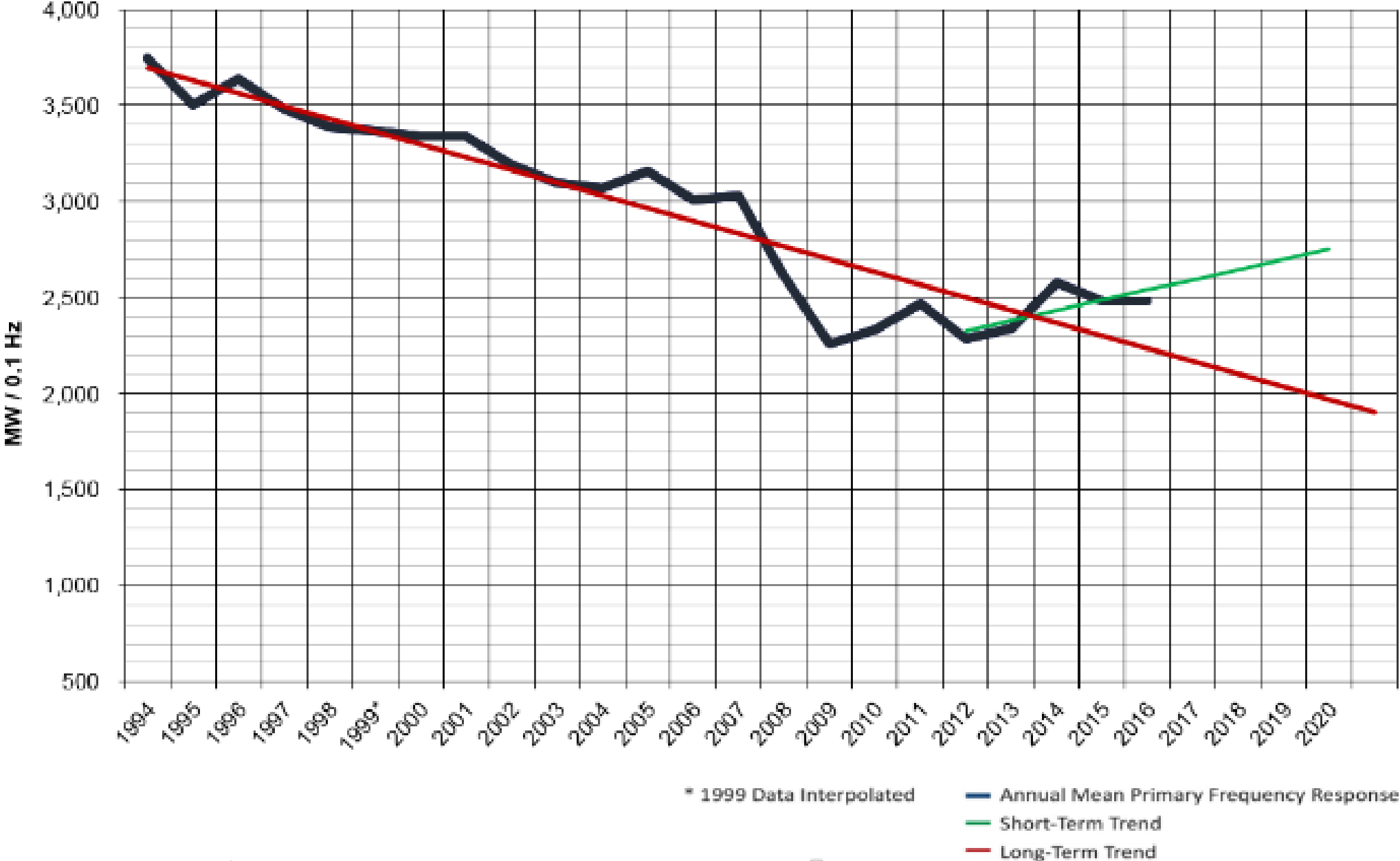




Key Finding 3: Frequency Response Shows Improvement, but Requires Continued Focus

Three of the four interconnections showed overall improvement while the Québec Interconnection frequency trend moved from “declining” to “stable.” No interconnection experienced frequency response performance below its interconnection frequency response obligation (IFRO).

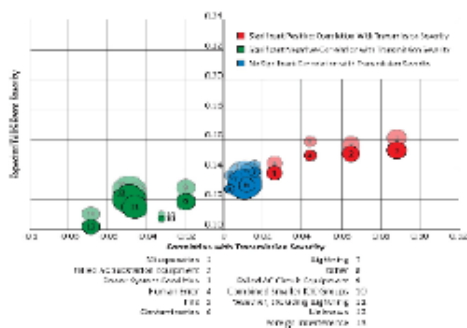
Eastern Interconnection Frequency Response Trend





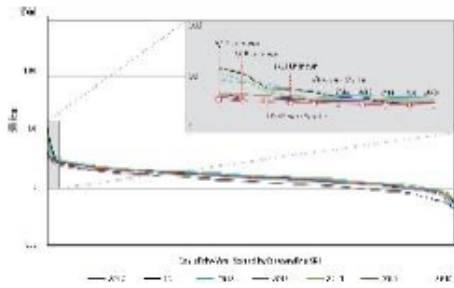
Key Finding 4: Cyber and Physical Security Risk Increases, Despite No Loss-Of-Load Events

In 2016, there were no reported cyber or physical security incidents that resulted in a loss of load. Nonetheless, grid security, particularly cyber security, is an area where past performance does not predict future risk. Threats continue to increase and are becoming more serious.



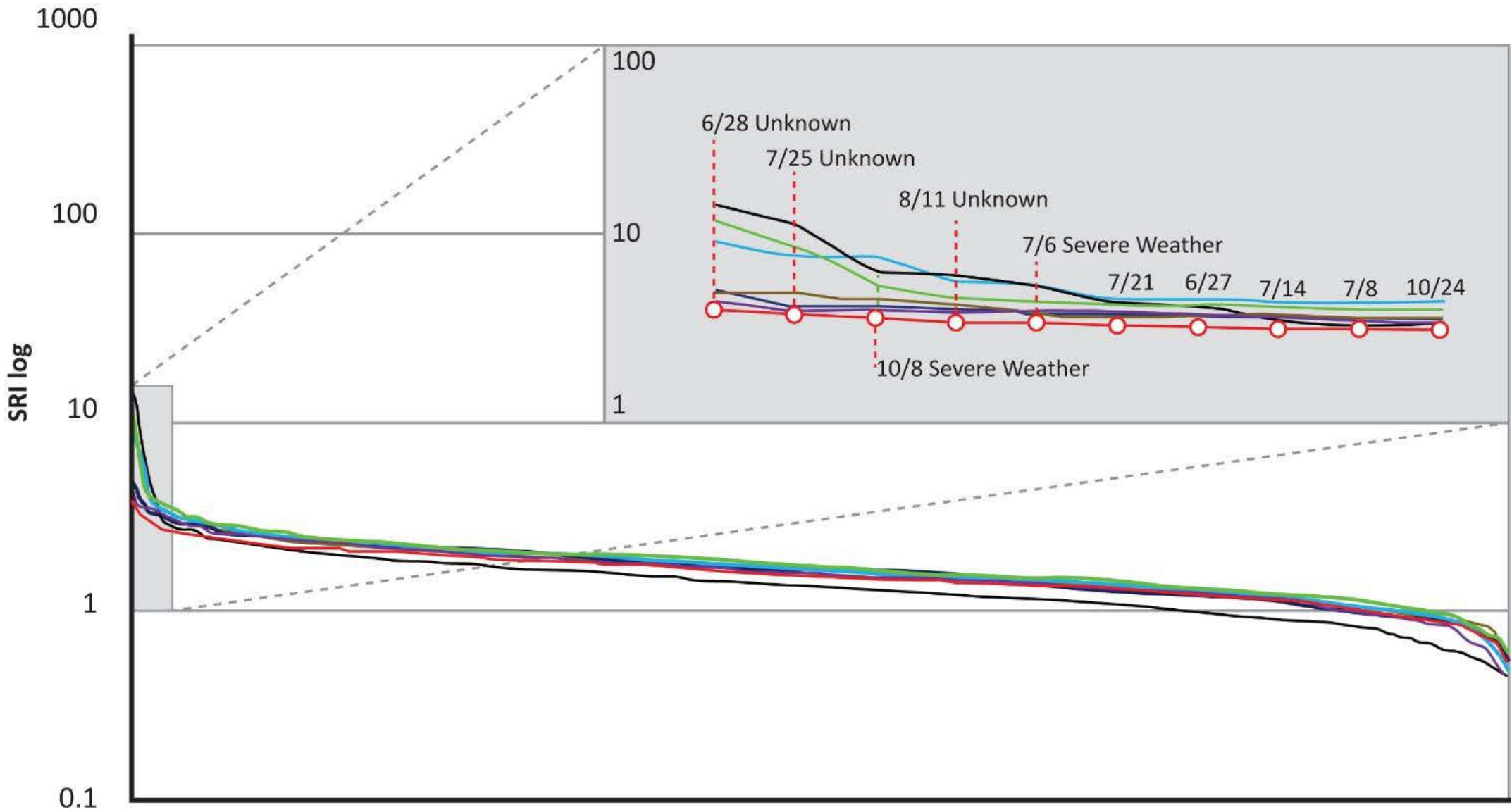
Key Finding 5: Transmission Outage Rates Caused by Human Error Show a Slight Increase, but no Increase in Outage Severity

The number of automatic (momentary and sustained) transmission outages from Human Error significantly reduced from 2014 to 2015. Year-end 2016 data demonstrates a return to 2014 levels. While no increase in outage severity was discovered, Human Error remains a major contributor to transmission outage severity and will remain an area of focus.



Key Finding 6: BPS Resiliency to Severe Weather Continues to Improve

In 2016 for the second consecutive year, there were no days that the daily severity risk index (SRI) was part of the top-10 most severe list of days between 2008 and 2015, despite days with extreme weather conditions across North America.

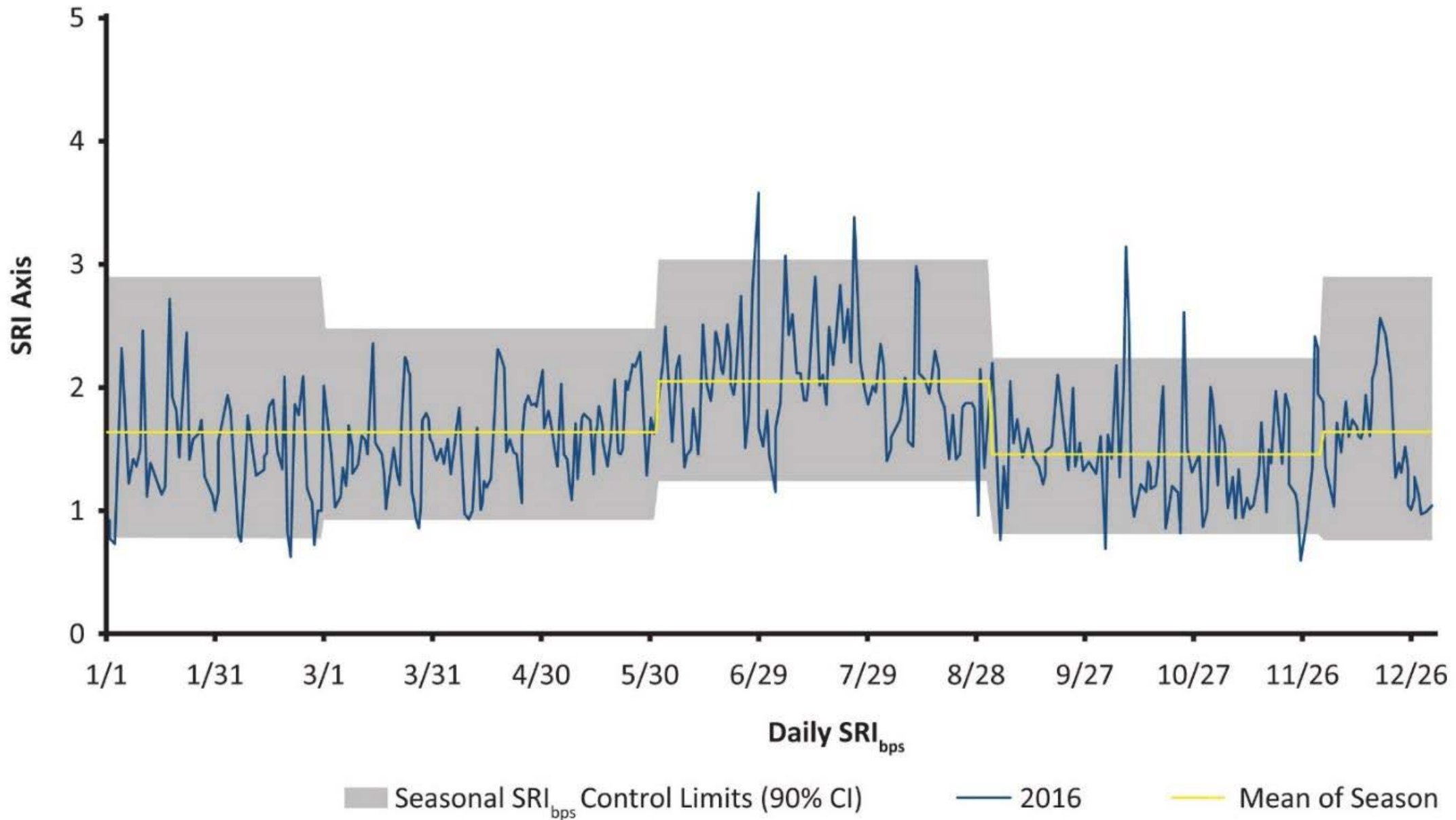


Day of the Year Sorted by Descending SRI

— 2010 — 2011 — 2012 — 2013 — 2014 — 2015 — 2016

Table 3.1: 2016 Top 10 SRI Days

Date	NERC SRI and Weighted Components 2016				G/T/L	Weather Influenced (Verified by OE-417)?	Rank	Event Type	Region
	SRI	Weighted Generation	Weighted Transmission	Weighted Load Loss					
6/28/2016	3.57	2.64	0.88	0.09			1		
7/25/2016	3.38	2.61	0.64	0.07			2		
10/8/2016	3.14	0.77	2.33	0.13		v	3	Severe Weather	SERC
8/11/2016	3.06	2.39	0.53	0.08		v	4	Severe Weather	RFC
7/6/2016	2.99	2.33	0.59	0.01			5		
7/21/2016	2.90	1.92	0.89	0.29			6		
6/27/2016	2.82	1.84	0.82	0.08			7		
7/14/2016	2.79	1.49	0.83	0.06		v	8	Severe Weather	SERC
7/08/2016	2.73	1.64	0.89	0.14			9		
10/24/2016	2.71	2.18	0.37	0.23			10		



Reliability Highlights

- Essential Reliability Services
- Solar Loss Disturbance Report
- CAISO Duck Curve
- Single Point of Disruption (Aliso Canyon)

Essential Reliability Services

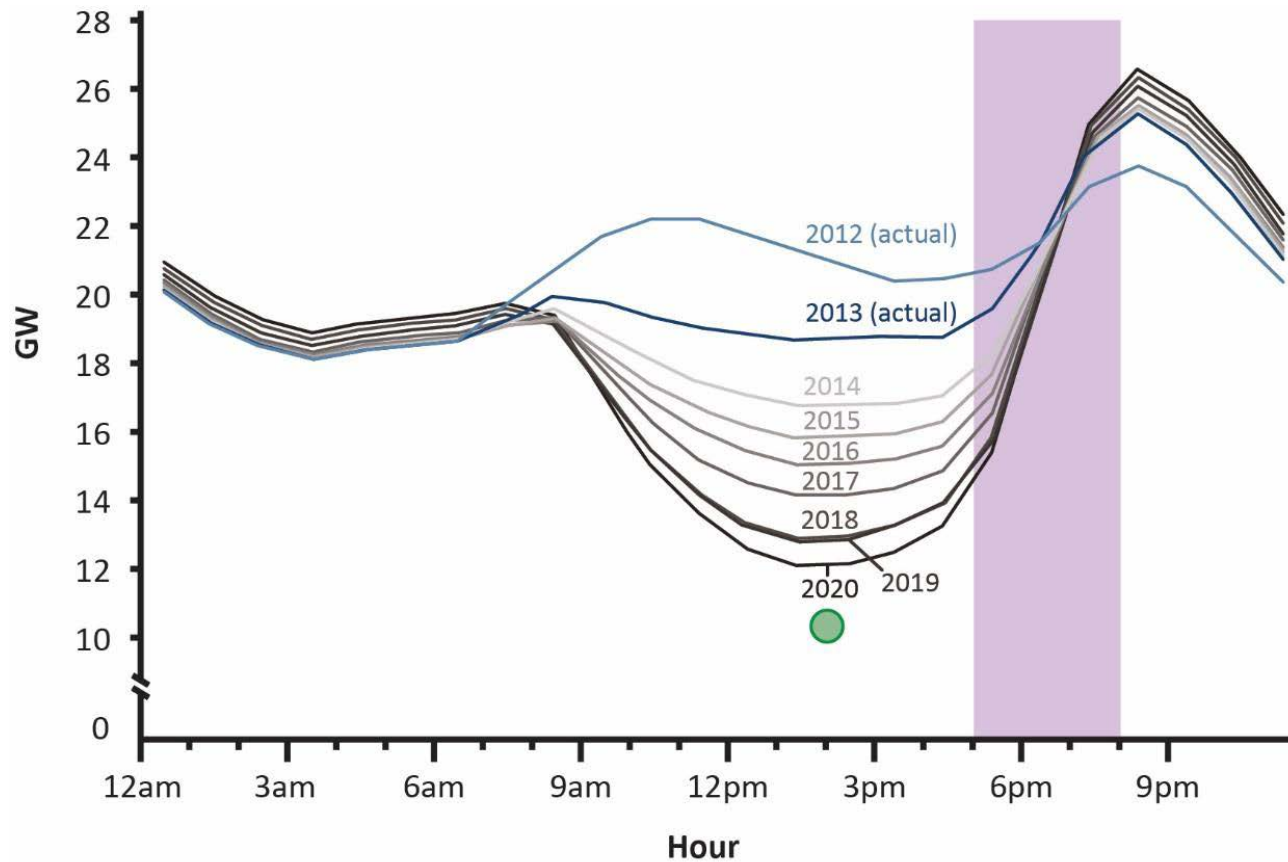
- Inverter-based Generation (Solar and Wind)
- Frequency Response
- Voltage Support
- Essential Reliability Services Working Group
- PRC-019-2 Generating Unit Voltage Regulating Control
- PRC-024-2 Generator Frequency and Voltage Relay Settings

Solar Loss Disturbance Report

- [1,200 MW Fault-Induced Solar Photovoltaic Resource Interruption Disturbance Report](#)
- WECC; Blue Cut Wildfire San Luis Obispo County
- Tripped two 500 kV lines
- Near-instantaneous frequency measurement – erroneous trip
- *“It is important that generator owners and operators work with inverter manufacturers to ensure that resources have sufficient “ride-through” capability to support reliability.”* James Merlot, vice president and director of Reliability Risk Management at NERC
- PRC-024-2 Generator Frequency and Voltage Relay Settings

CAISO “Duck Curve”

33% Target by 2020 with 60% Penetration



● 2016 Net Load: 11,663 MW (5/15/2016)

■ 2020 Projected 3-Hour Ramp: 13,000 MW
2016 Actual 3-Hour Ramp: 10,892 MW (2/1/2016)

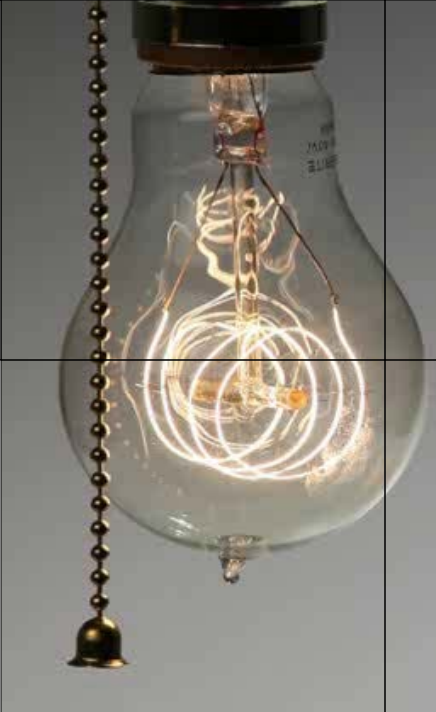
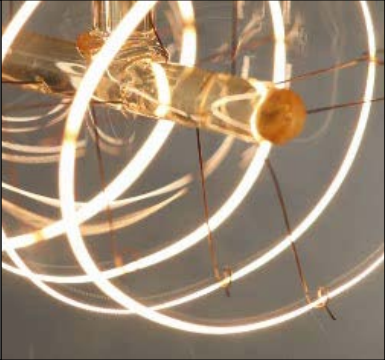
Single Point of Fuel Disruption Aliso Canyon

- Gas leak in October 2015
- 86 BCF (billion cubic feet) drawn down to 15 BCF
- 11 Million Retail Gas Customers
- 9,800 MW of Gas Generation
- NERC Assessments on Gas-Electric Interdependency

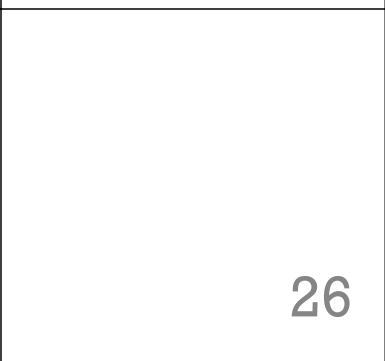
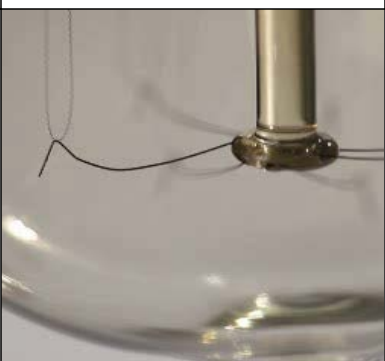
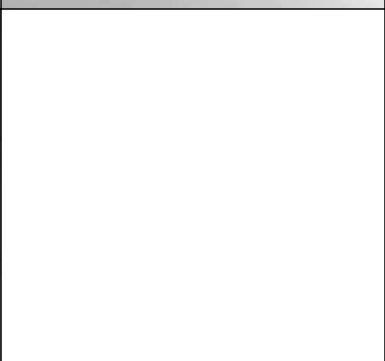
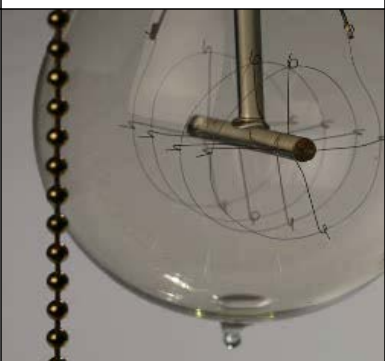
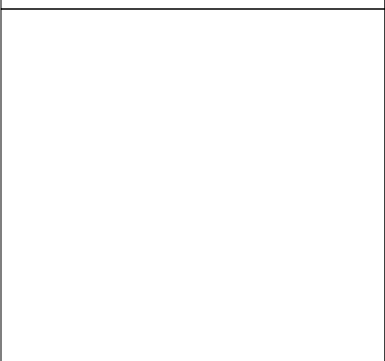
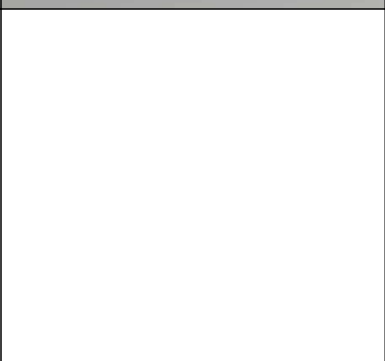
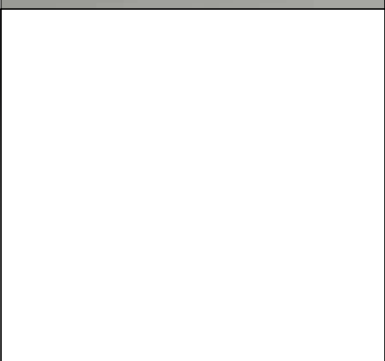
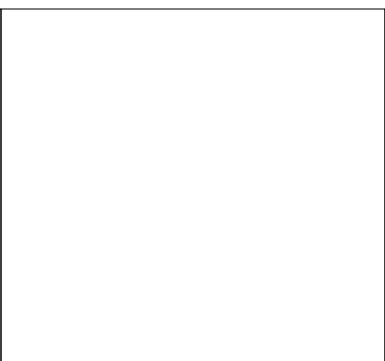
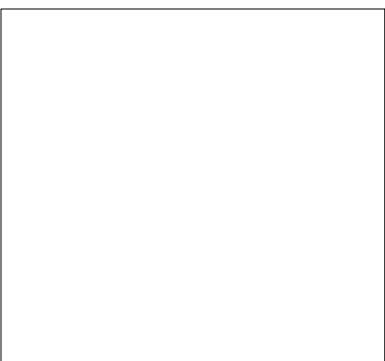
SOR Contributors/Acknowledgements

Bob Reynolds, SPP RE

- Chair, Demand Response Availability Data System Working Group
- Performance Analysis Subcommittee (PAS) Representative



Questions



CIP Update SPP RE Trustees Meeting July 24, 2017

Kevin B. Perry

Director, Critical Infrastructure Protection

kperry.re@spp.org

501.614.3251

CIP Standards Development Activities

- **CIP-013-1: Supply Chain Risk Management**

- Includes CIP-005-6 and CIP-010-3
- Final ballot open through 8:00 PM EDT, July 20, 2017
- Votes are counted by exception
 - Previous round of votes carries forward unless a replacement vote is cast
 - Ballot pool members who did not vote in prior round can vote in the final ballot

CIP Standards Development Activities

- **CIP-013-1: Supply Chain Risk Management**
 - R1: Develop one or more documented supply chain cyber security risk management plan(s) for high and medium impact BES Cyber Systems. Includes:
 - **Identification and assessment of procurement risks**
 - **Vendor notification of vendor-identified incidents posing risk**
 - **Coordination of response to vendor-identified incidents**
 - **Vendor notification to revoke access no longer needed**
 - **Vendor disclosure of known vulnerabilities**
 - **Verification of vendor-provided software integrity and authenticity**
 - **Coordination of Interactive Remote Access and system-to-system access**

CIP Standards Development Activities

- **CIP-013-1: Supply Chain Risk Management**
 - R2: Implement the supply chain cyber security risk management plans developed under R1
 - R3: Review and obtain CIP Senior Manager or delegate approval of the supply chain cyber security risk management plans developed under R1 at least once every 15 calendar months

CIP Standards Development Activities

- **CIP-005-6: Remote Access Management**

- Part 2.4 (**new**): Have one or more methods for determining active vendor remote access sessions (including Interactive Remote Access and system-to-system remote access).
- Part 2.5 (**new**): Have one or more method(s) to disable active vendor remote access (including Interactive Remote Access and system-to-system remote access).

CIP Standards Development Activities

- **CIP-010-3: Configuration Change Management and Vulnerability Assessments**
 - Part 1.6 (**new**): Prior to a change that deviates from the existing baseline configuration associated with baseline items in Parts 1.1.1, 1.1.2, and 1.1.5, and when the method to do so is available to the Responsible Entity from the software source:
 - Part 1.6.1: Verify the identity of the software source
 - Part 1.6.2: Verify the integrity of the software obtained from the software source

CIP Standards Development Activities

- Definition of CIP Exceptional Circumstances
- Protection of data being transferred across communication networks between Control Centers, both inter-entity and intra-entity (proposed as CIP-012-1)
- Transmission Owner (TO) Control Centers with Capability to Perform Transmission Operator (TOP) Obligations
- Virtualization

Newly Enforceable CIP Requirement/Parts

- **July 1, 2017**

- **CIP-004-6/R2/P2.3**: Complete training at least once every 15 calendar months
- **CIP-004-6/R4/P4.3**: Verify user access and privileges at least once every 15 calendar months
- **CIP-004-6/R4/P4.4**: Verify access to BES Cyber System Information at least once every 15 calendar months
- **CIP-006-6/R3/P3.1**: Maintenance and testing of Physical Access Control Systems at least once every 24 calendar months

Newly Enforceable CIP Requirement/Parts

- **July 1, 2017**

- CIP-008-5/R2/P2.1: Test Cyber Security Incident Response Plans at least once every 15 calendar months
- CIP-009-6/R2/P2.1: Test each recovery plan at least once every 15 calendar months
- CIP-009-6/R2/P2.2: Test a representative sample of recovery information at least once every 15 calendar months
- CIP-010-2/R3/P3.1: Conduct an active or paper vulnerability assessment at least once every 15 calendar months

CIP Requirement/Parts Not Yet Enforceable

- **July 1, 2018**

- **CIP-009-6/R2/Part 2.3:** Test each recovery plan at least once every 36 calendar months through operational exercise in a test environment (High Impact Only)
- **CIP-010-2/R3/Part 3.2:** Perform an active vulnerability assessment in a test environment at least once every 36 calendar months (High Impact only)

CIP Requirement/Parts Not Yet Enforceable

- **September 1, 2018**

- **CIP-003-6/R2/Attachment 1/Section 2:** Document and implement physical security controls
 - Access to Low Impact BES Cyber Systems
 - Access to Low Impact BES Cyber System Electronic Access Points
- **CIP-003-6/R2/Attachment 1/Section 3:** Document and implement electronic access controls
 - Permit only necessary inbound and outbound bi-directional routable protocol access
 - Implement authentication for any Dial-up Connectivity to low impact BES Cyber Systems

CIP Standards Pending Approval

- **CIP-003-7 (Security Management Controls)**
 - Redefines protections for Low Impact BES Cyber Systems
 - Approved by Ballot Body February 8, 2017
 - Adopted by the NERC Board of Trustees February 9, 2017
 - Submitted to FERC for approval March 3, 2017
 - Pending FERC Commission quorum

Remote Access Study

- Public and non-public version of the Remote Access Study submitted to FERC June 30, 2017
 - Reflects findings from all Regions
 - No Registered Entity attribution
 - [Public version](#) redacts specific details of implemented cyber security controls
- NERC would like to continue surveying Registered Entities in order to be able to answer future questions

In the News

- July 6, 2017
 - NY Times and Bloomberg report hackers are targeting nuclear facilities according to FBI and Homeland Security
 - Wolf Creek Nuclear Operating Corporation specifically cited in report
 - Reportedly highly targeted email messages with fake résumés for control engineering jobs sent to senior industrial control engineers
 - In some cases, legitimate web sites reportedly compromised
 - No indication that control systems were impacted

Violations Since July 1, 2016

Standard/Rqmt	Self-Report	Audit	Standard/Rqmt	Self-Report	Audit
CIP-002-5.1a / R2	1	0	CIP-007-6 / R1	2	1
CIP-003-6 / R3	1	0	CIP-007-6 / R2	8	1
CIP-003-6 / R4	1	0	CIP-007-6 / R3	1	0
CIP-004-6 / R2	2	0	CIP-007-6 / R4	2	2
CIP-004-6 / R3	1	0	CIP-007-6 / R5	2	1
CIP-004-6 / R4	3	0	CIP-008-5 / R3	1	0
CIP-004-6 / R5	3	0	CIP-009-6 / R1	1	0
CIP-005-5 / R1	2	7	CIP-010-2 / R1	6	3
CIP-005-5 / R2	0	2	CIP-010-2 / R2	1	0
CIP-006-6 / R1	2	0	CIP-011-2 / R1	1	0
CIP-006-6 / R2	3	1	Total	44	18

Enforcement Update

July 24, 2017

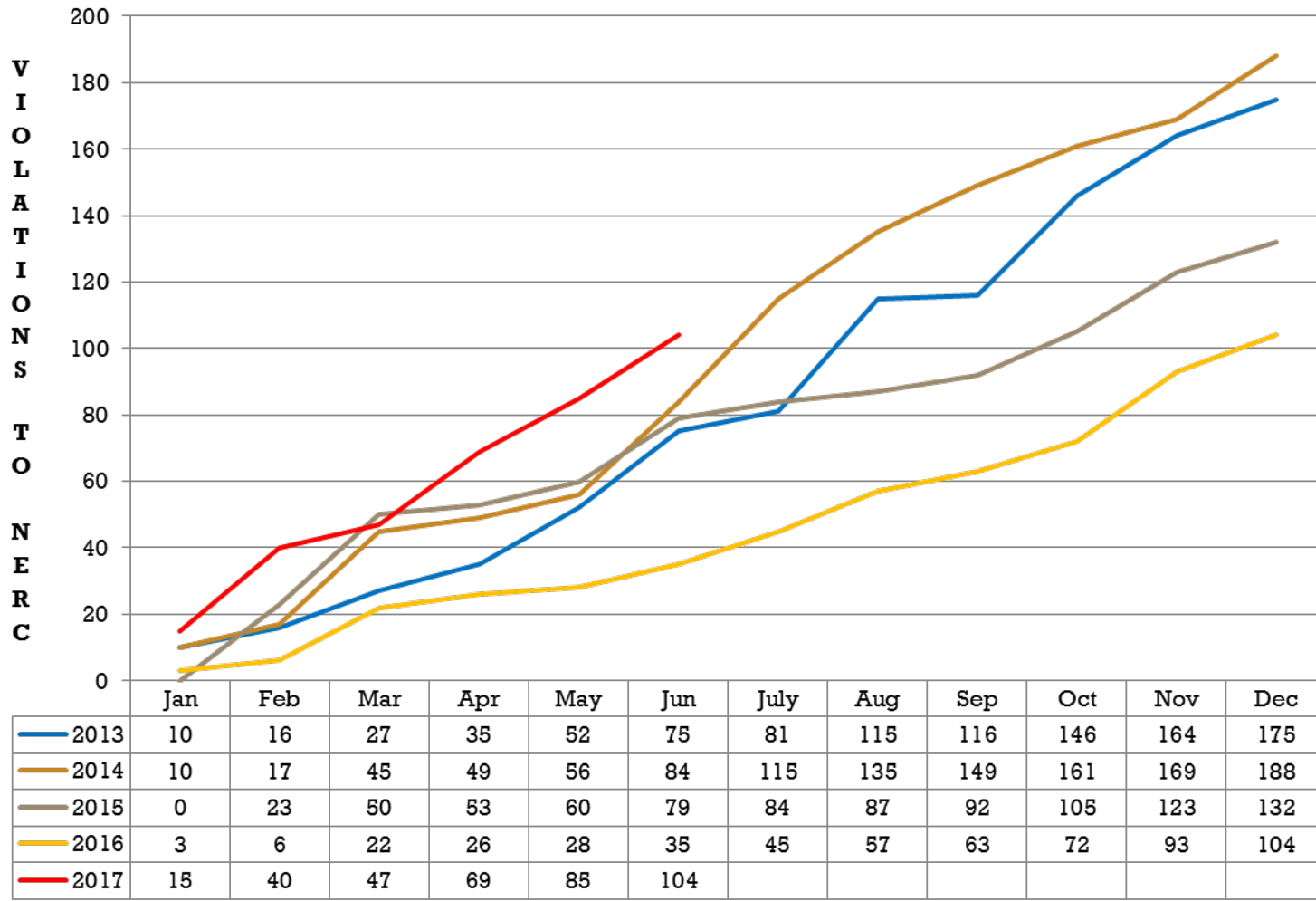
Joe Gertsch
Manager of Enforcement
jgertsch.re@spp.org
501.688.1672

Enforcement Activity Summary

SPP RE Enforcement Activities June 30, 2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	First Quarter	April	May	June	Total 2017
Notice of Preliminary Screen Issued	-	-	-	-	-	-	-	121	89	174	62	16	17	4	99
Notice of Possible Violations Issued	6	56	132	254	239	173	189	107	71	141	40	7	27	3	77
Notice of Alleged Violation (NAVAPS)															
NAVAPS Issued	6	45	10	7	0	2	1	6	0	7	0	0	0	0	0
Notice of Confirmed Violation (NOCV)															
NOCV Sent to Entity/NERC	0	8	25	15	4	1	0	1	0	0	0	0	0	0	0
NOCV BOTCC Approved	0	7	11	29	4	1	0	1	0	0	0	0	0	0	0
Settlements / Full Notice of Penalty															
To NERC for Approval	0	0	0	89	118	52	5	15	28	1	6	14	0	0	20
BOTCC Approved	0	0	0	50	81	103	14	30	24	5	0	6	0	13	19
Settlements / Spreadsheet NOP															
To NERC for Approval	0	0	0	16	22	49	43	59	8	0	0	0	1	0	1
BOTCC Approved	0	0	0	0	38	49	65	46	8	0	0	0	0	1	1
Find, Fix, Track															
To NERC for Approval	-	-	-	-	43	78	86	62	13	4	1	0	3	0	4
BOTCC Approval	-	-	-	-	36	74	95	61	14	4	1	0	0	3	4
Compliance Exception	-	-	-	-	-	-	-	1	69	68	34	10	6	8	58
Dismissals															
To NERC/SPP RE SRT for Approval	0	0	1	16	75	43	41	44	14	31	6	2	2	11	21
NERC/SPP RE SRT Approved		0	1	16	75	43	41	44	14	31	6	2	2	11	21
Notice of Penalty															
Approved by FERC	0	5	13	57	180	184	141	118	15	17	0	0	0	6	6
Violations Awaiting NERC Approval															9
Active Violations - Caseload															162
Caseload Index (months)*															11.2

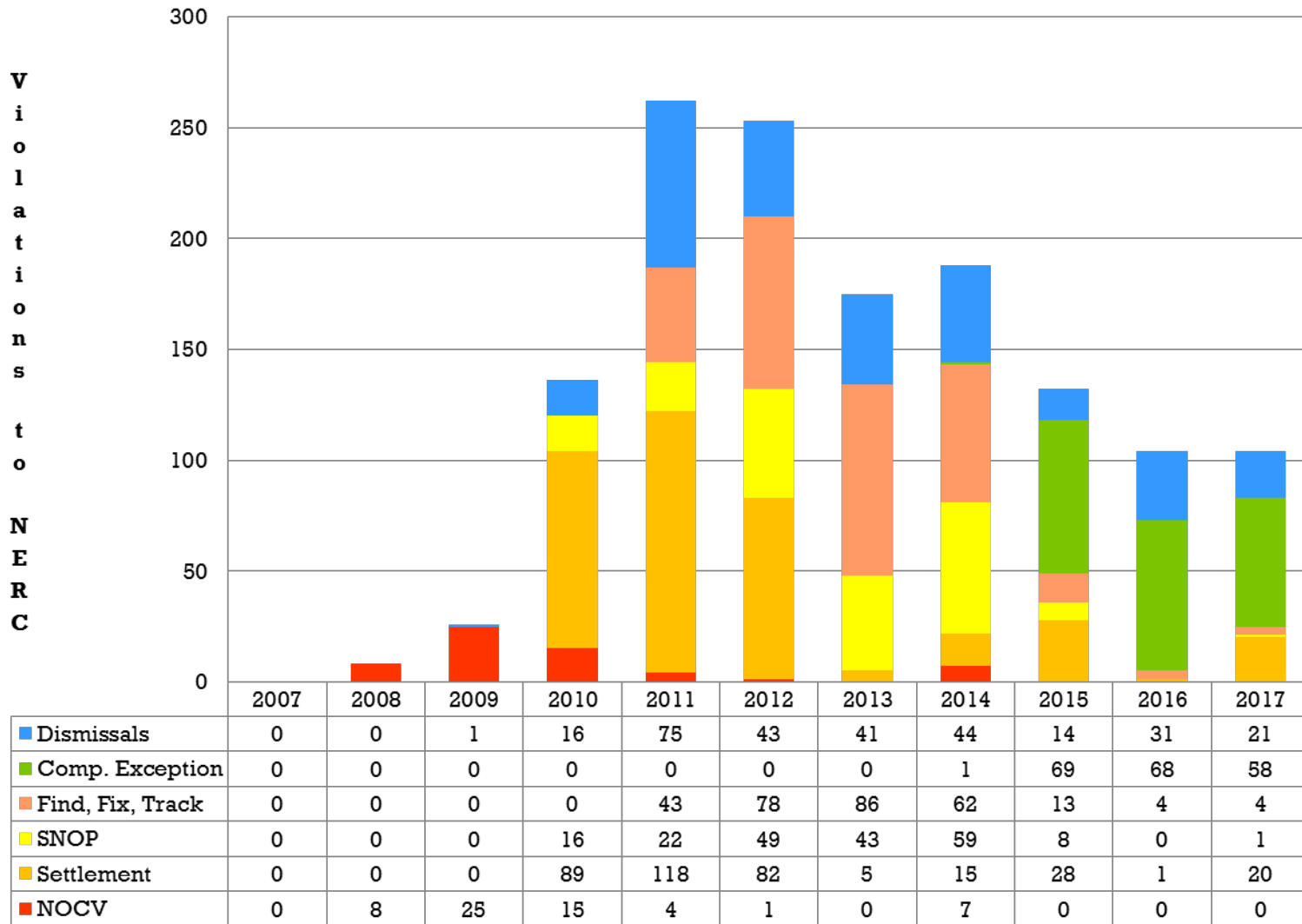
* Based on previous 12 months processing (174)

Enforcement Monthly Violation Processing



RUNNING TOTAL VIOLATIONS PROCESSED

Enforcement Processing Methods



SPP RE Caseload – June 30, 2017

- 162 - Active SPP RE Violations
 - 7 - Settlement
 - 52 – Multi Region Registered Entity (MRRE) - SPP RE Lead on 7
 - 25 – PRC-019, PRC-024, MOD-025
- 67 - 693 Violations
- 95 - CIP Violations
- Discovery Method
 - 32 - Audit
 - 96 - Self Report
 - 25 - Self Certification
 - 2 – Spot Check
 - 7 - Log

Caseload Aging

- SPP RE – 117 violations
- Average age - 226 days

<u>Age (days)</u>	<u>Violations</u>
> 300	22
201 – 300	39
101 – 200	29
51 – 100	25
1 - 50	18

- Pre-2016 violations: 9
- MRRE: 45 violations, average age - 278 days

SPP RE 2017 Violation Dismissals

Consolidation with another violation	14
Transfer Dismissal.....	2
Self-Report wrong standard and/or requirement	0
Provided exculpatory evidence	2
Incorrect Interpretation of Standard	<u>3</u>
Total	21

June Mitigation Plan Summary

- **Mitigation Plan Status (month/year)**

Submitted	4/30
Accepted	4/30
Certified Complete	7/50
Completion Verified	9/46
Mitigating Activity Completed	1/24
- **Active Violations with no Mitigation Plans**

Initiated	54
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Active Violations without Mitigation Plans

- Discovery Method

Compliance Audit	10
Self- Certification	9
Self-Report	35

Average age - 136 days

<u>Age (days)</u>	<u>Violations</u>
> 300	5
201 – 300	7
101 – 200	21
51 – 100	15
1 - 50	6



Joe Gertsch
Manager of Enforcement
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President's Report

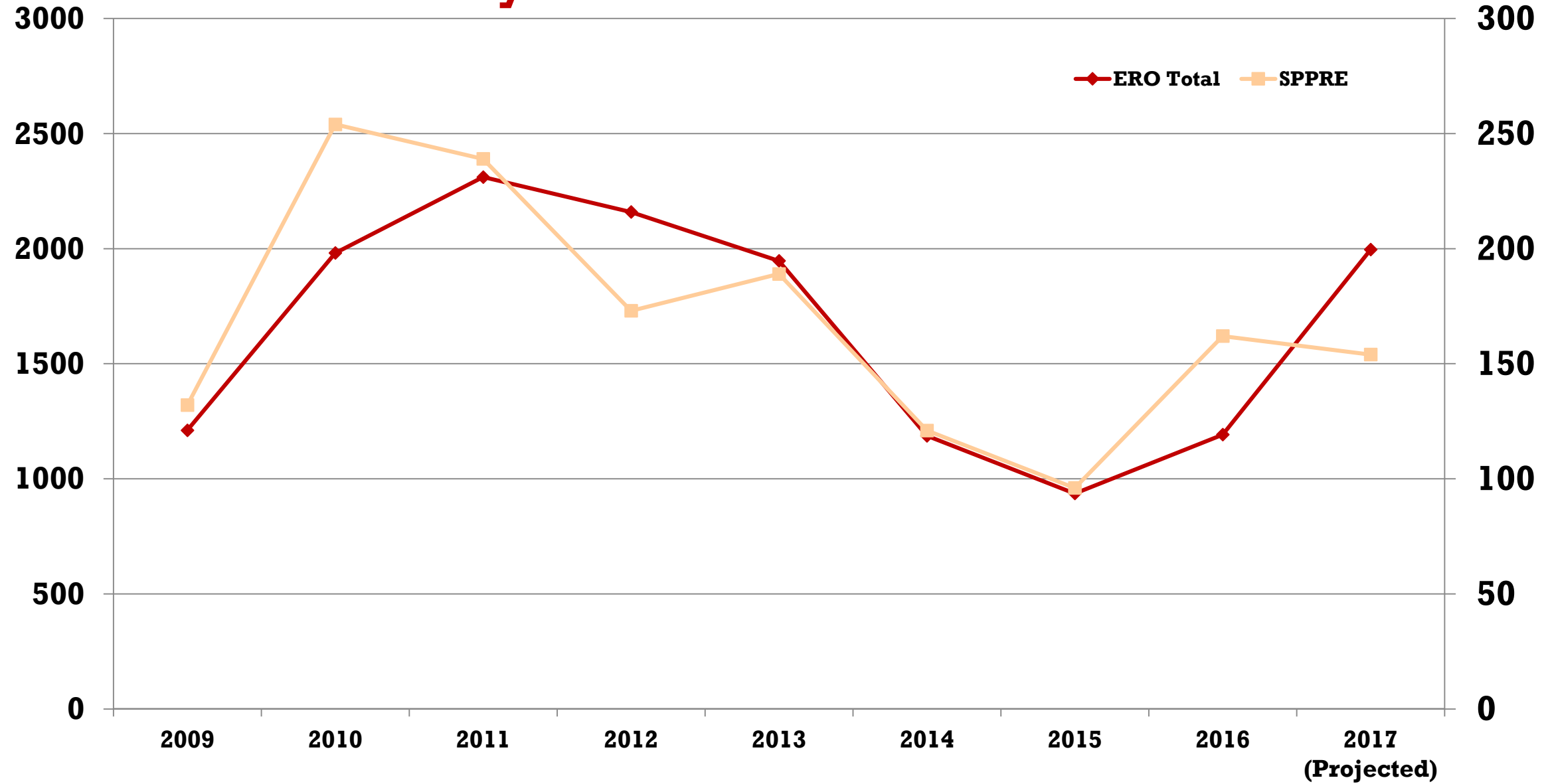
July 24, 2017

Denver, CO

Ron Ciesiel

SPP RE Trustees President & General Manager

Violations by Year



Most Violated Standards

Based on rolling 12 months through 6/30/17 [Represents ~ 86% of total violations]

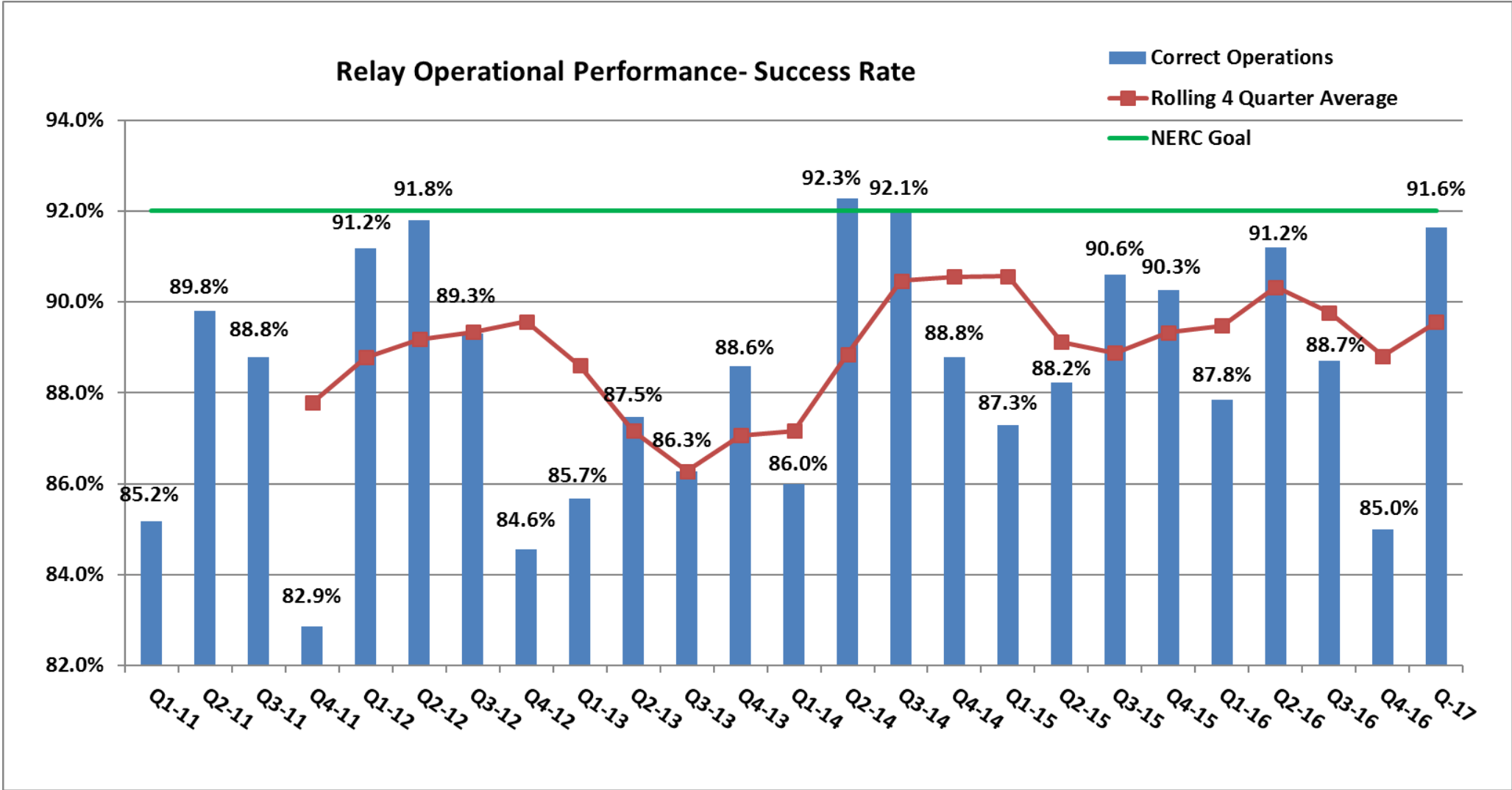
SPP RE Rank	Standard	Description	Violations Current Period	Violations Previous Period	△	Risk Factor
1*	MOD-025	Generator Capability Testing	34	0	+34	Medium
2*	CIP-007	Systems Security Management	32	7	+25	Medium
3*	PRC-024	Generator Relay Settings (Hz & V)	29	0	+29	Med./Lower
4*	PRC-019	Generator Regulating Controls	18	0	+18	Medium
5*	VAR-002	Network Voltage Schedules	13	3	+10	Med./Lower
6*	CIP-005	Electronic Security Perimeters	12	2	+10	Medium
7*	CIP-010	Change Management	12	0	+12	Medium
8*	CIP-004	Personnel & Training	11	2	+9	Med./Lower
9*	PRC-005	Protection System Maintenance	10	16	-6	High/Med.
10*	CIP-006	Physical Security of Cyber Assets	7	5	+2	Medium
	All	SPP RE Top 10 Total Incoming	178	35	+143	

The current period is the most recent 12 months.

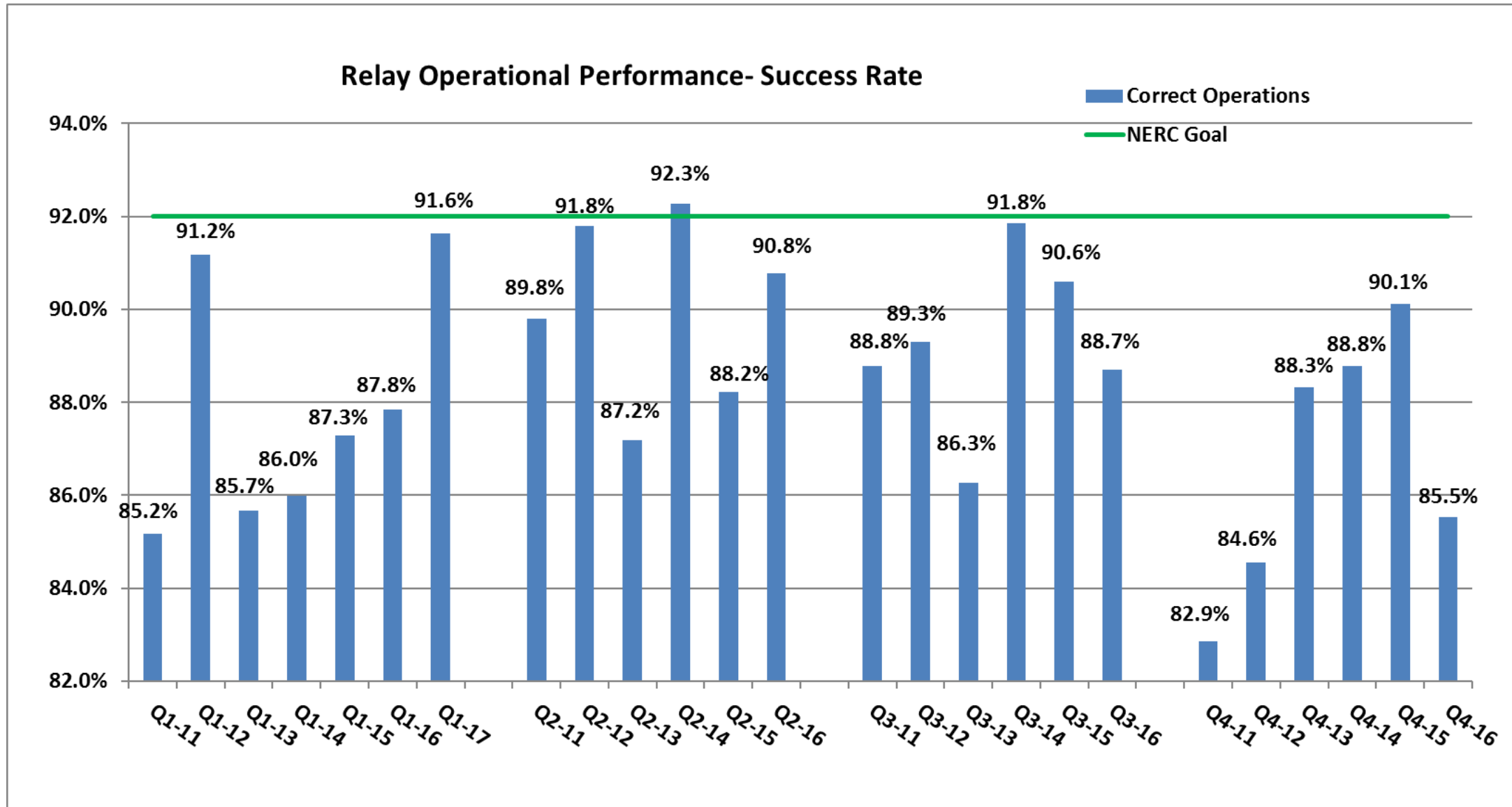
The previous period is the previous 12 months.

* NERC Top 10 as of June 30, 2017 (draft Q2 2017 ERO CMEP Report)

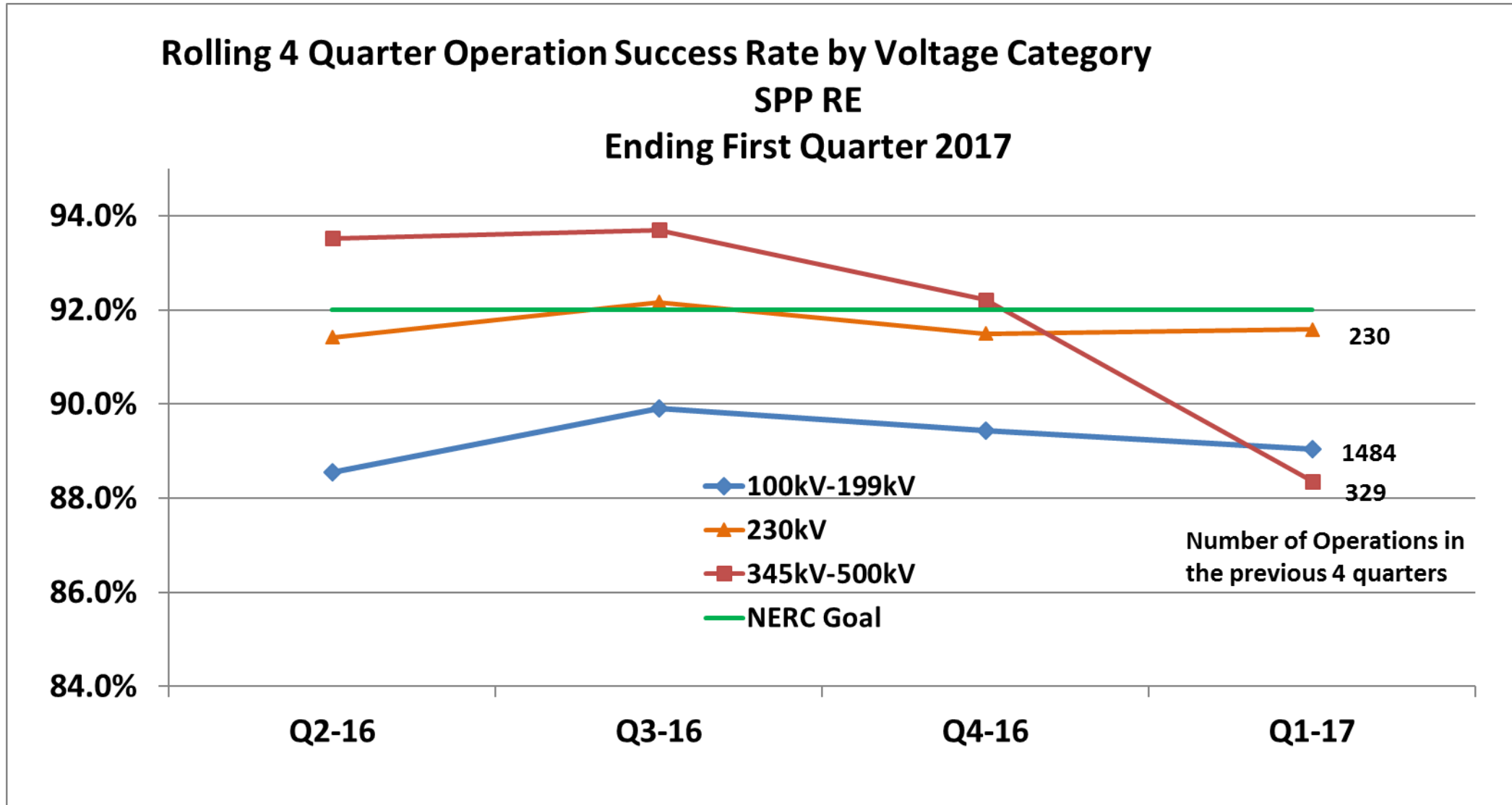
SPP RE Misoperation Report as of Q1-17



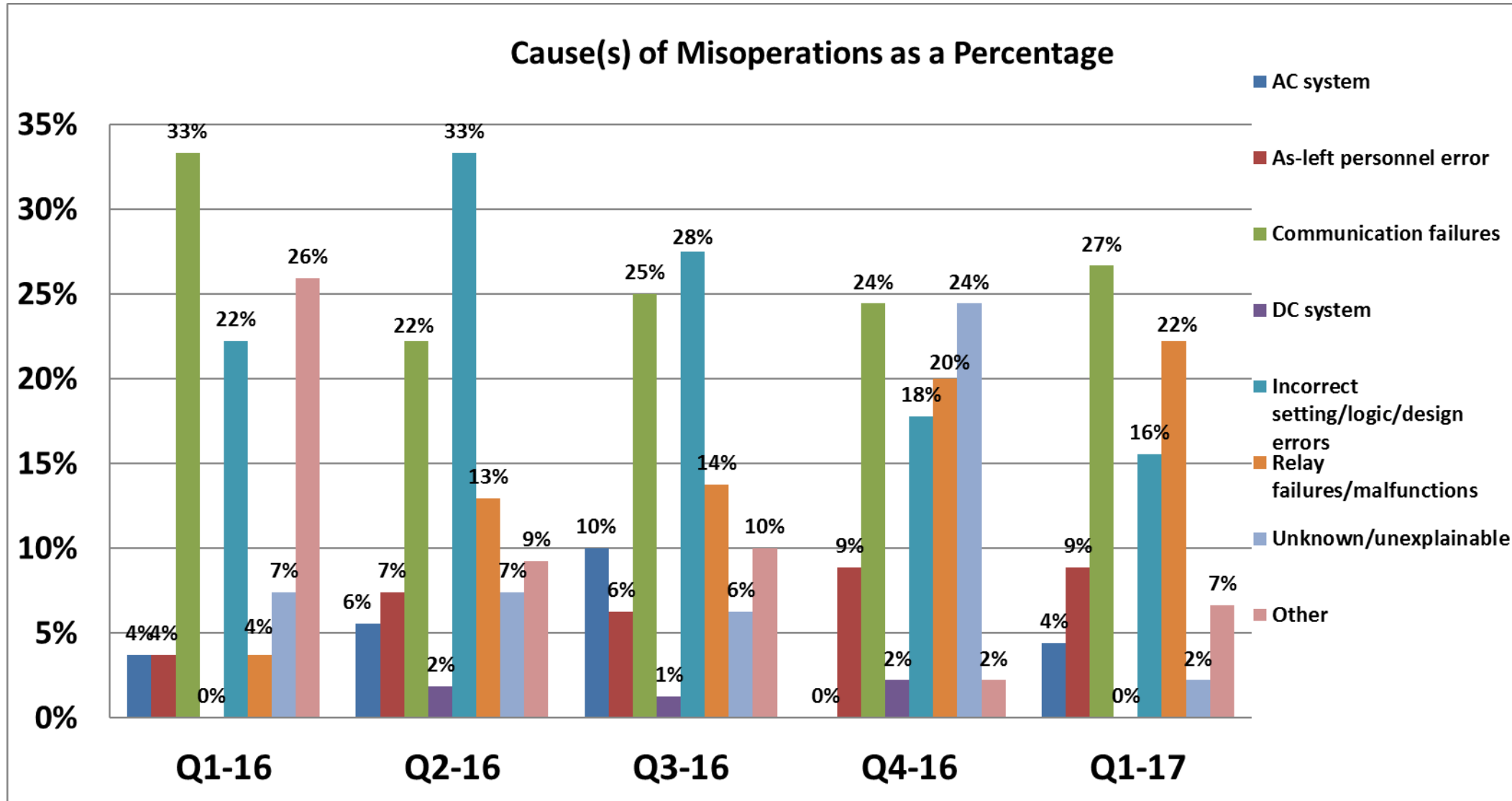
Relay Operation Success Rate (Quarter Grouping)



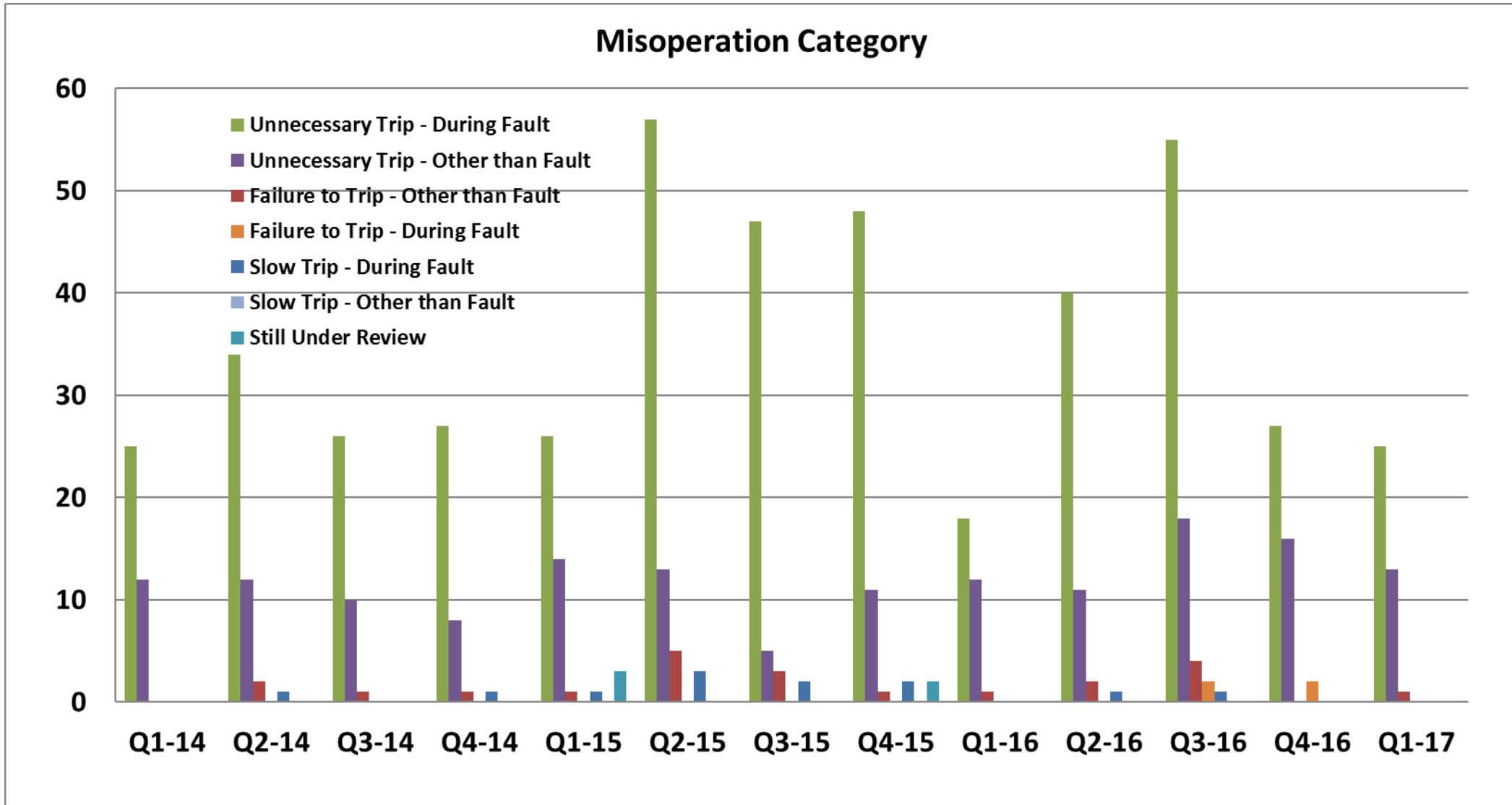
Success Rate by Voltage Category



Causes of Misoperations as a percentage Q1-15 to Q1-17



Misoperations by Type



Additional Information

New Standards: July 1, 2017

- CIP-004-6-Cyber Security – Personnel & Training (Requirements 2.3,4.3, 4.4)
- CIP-006-6-Cyber Security - Physical Security of BES Cyber Systems (Requirement 3.1)
- CIP-008-5-Cyber Security – Incident Reporting and Response Planning (Requirement 2.1)
- CIP-009-6-Cyber Security – Recovery Plans for BES Cyber Systems (Requirement 2.1-2.2)
- CIP-010-2-Cyber Security Configuration Change Management and Vulnerability Assessments (Requirement 3.1)

New Standards: July 1, 2017

- [MOD-033-1 — Steady-State and Dynamic System Model Validation](#)
- [TPL-007-1 Transmission System Planned Performance for Geomagnetic Disturbance Events](#)

New Standards: October 1, 2017

- COM-001-3 Communications
- IRO-002-5 – Reliability Coordination – Monitoring and Analysis

New Standards: January 1, 2018

- BAL-002-2 – Disturbance Control Standard – Contingency Reserve for Recovery from a Balancing Contingency Event
- PRC-026-1 Relay Performance During Stable Power Swings (Requirement 1)

New Standards: April 1, 2018

- [IRO-018-1 Reliability Coordinator Real-time Reliability Monitoring and Analysis Capabilities](#)
- [TOP-010-1 Real-time Reliability Monitoring and Analysis Capabilities](#)

New Standards: July 1, 2018

- CIP-009-6-Cyber Security – Recovery Plans for BES Cyber Systems (Requirement 2.3)
- CIP-010-2-Cyber Security- Configuration Change management and Vulnerability Assessments (Requirements 3.2, 3.2.1, 3.2.2)
- MOD-026-1-Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions (Requirement 2, 2.1 – 2.1.6)
- MOD-027-1-Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions (Requirement 2, 2.1-2.1.5)
- TOP-001-4-Transmission Operations

New Standards: July 1, 2018

- [TPL-007-1-Transmission System Planned performance from Geomagnetic Disturbance Events \(Requirements 2\)](#)

Outreach Report

July 24, 2017

Denver, CO

Emily Pennel

SPP RE Outreach Coordinator and Trustees Secretary

Outreach

2017

- [Oct. 19 Misoperations Summit](#): KCPL/Kansas City
- [Oct. 24-25 Fall Workshop](#): Dallas
- [Oct. 25, RTO Compliance Forum](#): Dallas

2018

- March 27, Spring Workshop: Little Rock
- June 5, CIP Workshop: Little Rock
- Oct. 9, Fall Workshop: Kansas City

Second Quarter Financial Report

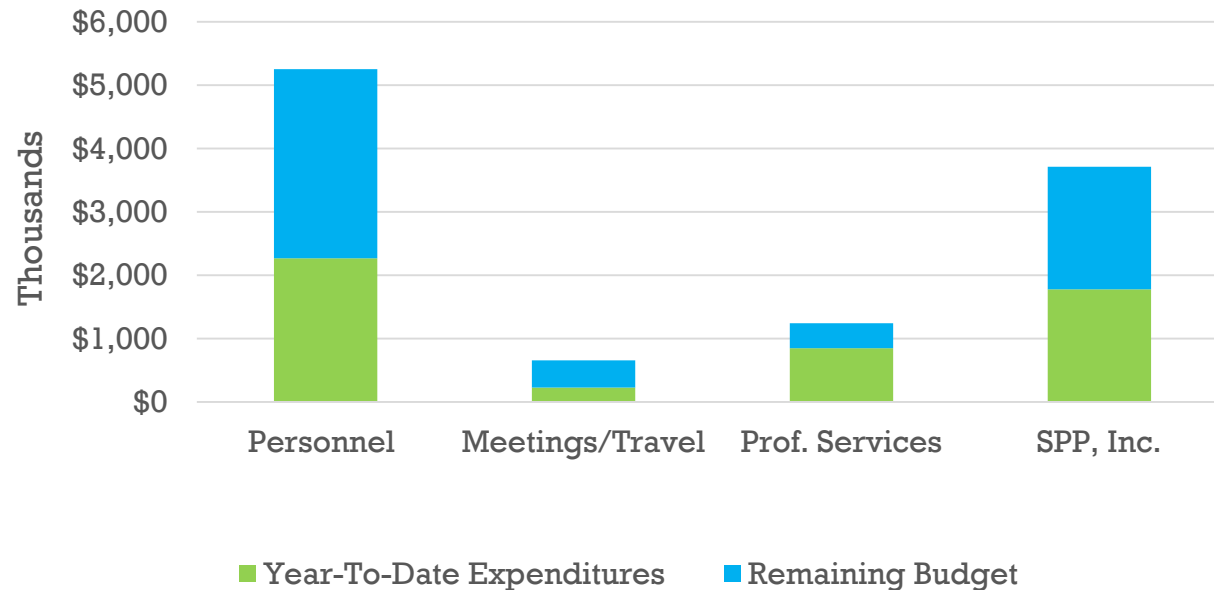
July 24, 2017

Debbie Currie

RE Manager of Regulatory Interface and Process Improvement

2017 Actuals vs. \$10.9M Budget

- Total expenses ~\$310k under budget
 - Personnel expenses ~\$360k under budget
 - Meeting/travel expenses ~\$99k under budget
 - Contracts/Professional services ~\$226k over budget
 - SPP, Inc. overhead charge ~\$78k under budget



Overview

- **Personnel**
 - 4 open staff positions (24 actual compared to 28 budget)
- **Meeting/Travel expenses**
 - Open positions
- **Contracts/Professional Services**
 - Increase in CIP contract auditor rate
 - Trustee expenses
 - Engineering Data Validation Tool
- **Engineering Data Validation Tool**
 - Project on schedule
 - Completion projected in October 2017
- **SPP, Inc. Overhead Charge**
 - Engineering shared staff FTEs below budget (4.4 vs. 5.25 budget)
 - NERC published a two-year assessment and study schedule

Year-End Projection

- Open positions will continue to drive budget variance
- At the end of the 2nd Quarter SPP RE projects a year-end budget under-run of ~\$400k
 - Personnel Expenses projected to be ~\$450K under budget
 - Meeting/Travel Expenses ~\$150k under budget
 - Contracts/Professional Services ~\$300k over budget
 - SPP, Inc. Overhead Charge ~\$100k under budget



Debbie Currie

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501-688-8228

SOUTHWEST POWER POOL REGIONAL ENTITY
STATEMENT OF ACTIVITIES
2017 JUNE YTD DRAFT (UNAUDITED)

<i>(In Whole Dollars)</i>	2017 JUNE YTD ACTUAL	2017 JUNE YTD BUDGET	VARIANCE	VAR %	2017 FULL YEAR PROJECTION	2017 FULL YEAR BUDGET	VARIANCE
Funding							
ERO Funding	4,546,277	4,546,277	-		9,092,553	9,092,553	-
Penalty Sanctions	184,875	184,875	-		369,750	369,750	-
Total SPP RE Funding	4,731,152	4,731,152	-		9,462,303	9,462,303	-
Testing Fees	-	-	-		-	-	-
Workshops	-	-	-		-	-	-
Interest	1,806	-	1,806		1,806	-	1,806
Miscellaneous	-	-	-		-	-	-
Total Funding (A)	4,732,958	4,731,152	1,806	0.0%	9,464,109	9,462,303	1,806
Expenses							
Personnel Expenses							
Salaries	1,825,373	2,192,803	(367,429)		3,926,903	4,385,605	(458,702)
Payroll Taxes	113,899	167,750	(53,850)		268,272	335,499	(67,227)
Benefits	237,010	179,132	57,879		430,520	358,263	72,257
Retirement Costs	90,654	87,712	2,942		179,096	175,424	3,672
Total Personnel Expenses	2,266,936	2,627,396	(360,459)	-13.7%	4,804,791	5,254,791	(450,000)
Meeting Expenses							
Meetings	52,152	60,000	(7,848)		108,063	120,000	(11,937)
Travel	177,729	268,500	(90,771)		398,937	537,000	(138,063)
Conference Calls	-	-	-		-	-	-
Total Meeting Expenses	229,881	328,500	(98,619)	-30.0%	507,000	657,000	(150,000)
Operating Expenses							
Contracts & Consultants	672,190	510,355	161,835		1,235,170	1,020,710	214,460
Office Rent	-	-	-		-	-	-
Office Costs	7,050	5,000	2,050		12,716	10,000	2,716
Administrative Costs	-	-	-		-	-	-
Professional Services	168,551	106,050	62,501		294,924	212,100	82,824
Computer Purchase & Maint.	-	-	-		-	-	-
Depreciation	-	-	-		-	-	-
Miscellaneous/ Contingency	-	-	-		-	-	-
Total Operating Expenses	847,790	621,405	226,385	36.4%	1,542,810	1,242,810	300,000
Total Direct Expenses	3,344,608	3,577,301	(232,693)	-6.5%	6,854,601	7,154,601	(300,000)
SPP Inc. Indirect Expenses	1,777,868	1,855,455	(77,587)		3,610,910	3,710,910	(100,000)
SPP RE Indirect Expenses	-	-	-		-	-	-
Total Indirect Costs	1,777,868	1,855,455	(77,587)	-4.2%	3,610,910	3,710,910	(100,000)
Total Expenses (B)	5,122,476	5,432,756	(310,279)	-5.7%	10,465,511	10,865,511	(400,000)
Net Change in Assets (A-B)	(389,519)	(701,604)	312,085		(1,001,402)	(1,403,208)	401,806
Fixed Assets							
Depreciation	-	-	-		-	-	-
Computer & Software CapEx	-	-	-		-	-	-
Furniture & Fixtures CapEx	-	-	-		-	-	-
Equipment CapEx	-	-	-		-	-	-
Leasehold Improvements	-	-	-		-	-	-
Increase/(Decrease) in Fixed Assets (C)	-	-	-		-	-	-
Total Budget (Expenses plus Incr (Dec) in Fixed Assets (B+C))	5,122,476	5,432,756	(310,279)	-5.7%	10,465,511	10,865,511	(400,000)
Change in Working Capital (Total Funding less Total Budget) (A-B-C)	(389,519)	(701,604)	312,085		(1,001,402)	(1,403,208)	401,806
FTEs*	28.7	33.25	(4.53)	-13.6%	33.25	33.25	-

SPP RE Metrics Reporting as of June 30, 2017

Within Target

Outside Target but w/in Alloted Range

Outside Alloted Range

1. Maintain Caseload

2. Mit. Accept/Reject

3. Mit. Plan Completion

4. Process Pre-2016 Violations

Maintain a One-Year Caseload

FFT	Settle	Dismiss	NOCV	Comp. Ex	Total	% Year Passed	50.0%
4	21	21	0	58	104	Caseload Complete	64.6%

Accept/Reject Mitigation Plans within 30 days

Current Avg. Days	9.44
Metric Eligibility	100.0%

Accept/Reject Resubmitted Mitigation Plans within 10 days

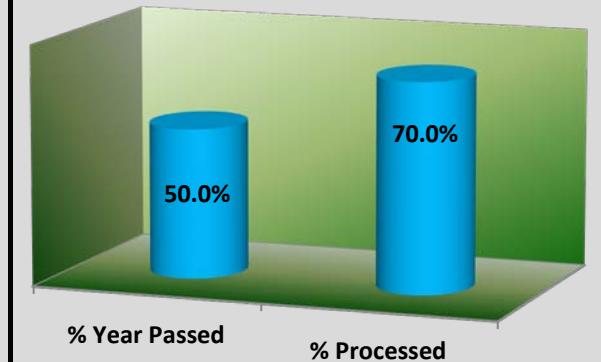
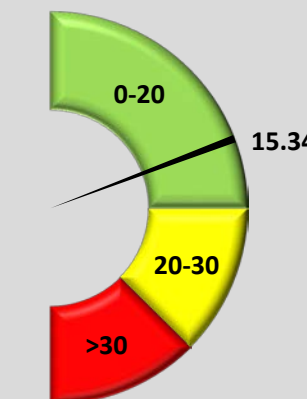
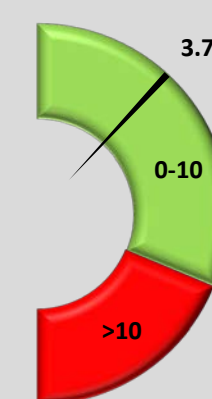
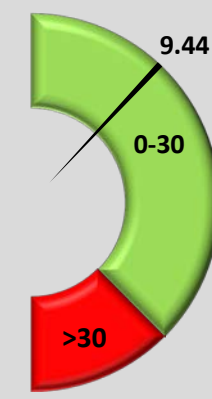
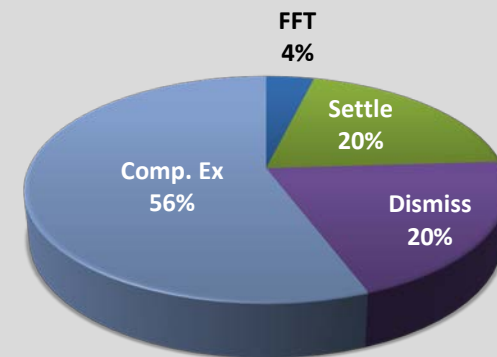
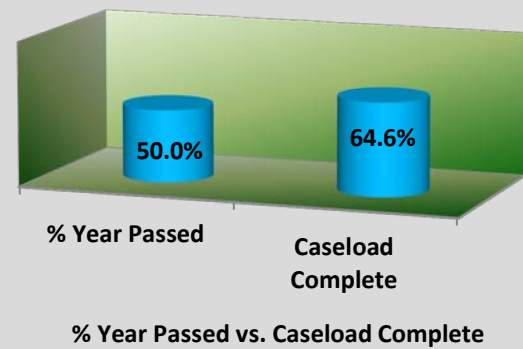
Current Avg. Days	3.75
Metric Eligibility	100.0%

Complete Mitigation Reviews <= 20 days

Current Avg. Days	15.34
-------------------	--------------

Process 100% of Pre-2016 Caseload

% Year Passed	50.0%
% Processed	70.0%



5. 30 Day Triage

6. Records Close Out

7. Publish Off-Site Audit

8. Publish On-Site Audit

9. Publish Self-Cert, Periodic Data Submittals

Complete Incoming Compliance Issue Triage in <= 30 days

Current Triage Avg. : **21.92**

Average Days to Close Out Violation Records

of Violations closed out **52**

Publish Off-site within 40 days

Published YTD **5**

of Reports Published in more than 40 Days **1**

Publish On-site within 65 days

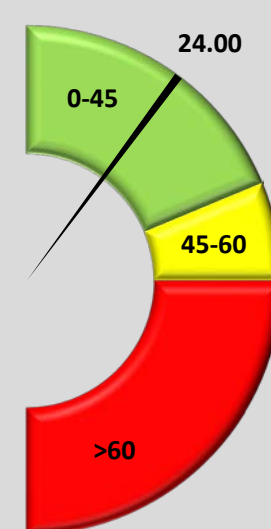
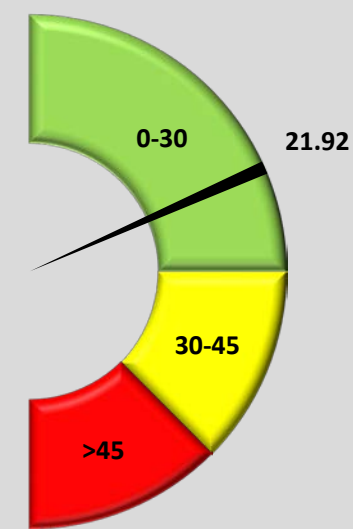
Published YTD **6**

of Reports Published in more than 65 Days **0**

Publish Reports Within Alloted Timeframe

Current Success Rate **88.89%**

Target **100%**



Average Publishing Time <=40 Days	
Average Publishing Time 40-50 Days	
Average Publishing Time >=50 Days	

Average Publishing Time <=65 Days	
Average Publishing Time 65-75 Days	
Average Publishing Time >=75 Days	

Average Days to Publish **21.40**

Average Days to Publish **45.33**

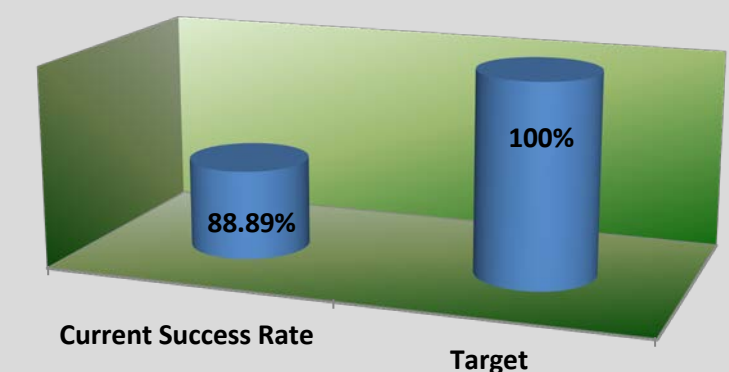
% Published Reports <=40 Days

% Published Reports <=65 Days

80%

100%

% Published within Alloted Time



10. Incoming Processing

11. Cost Control

12. Misops Outreach

13. Outreach

14. 2017 Survey Results

Preliminary Screening of Potential Noncompliance Issues

Current Average Days **1.34**

Maintain Costs at or Below 2017 Target

Conduct 12 Outreach Activities

Conduct 3 Workshops, 10 Webinars/Videos, and 12 Newsletters in 2017

2017 Stakeholder Survey Rating

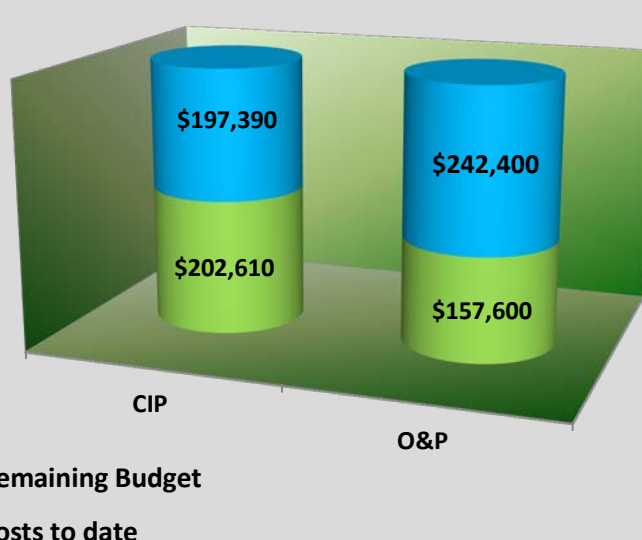
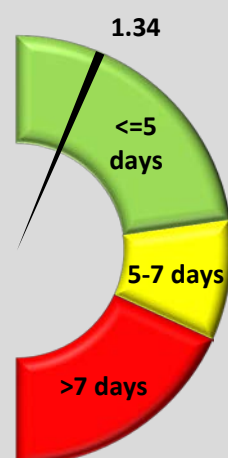
Current Average Days **1.34**

Maintain Costs at or Below 2017 Target

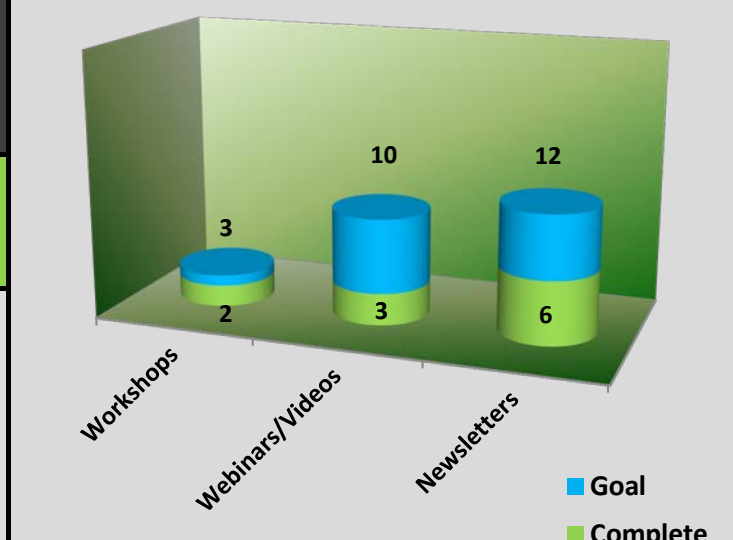
2017 Year-to-date Activities **8**

Percentage Complete: **66.7%**

Due November 2017



Percentage Complete: **66.7%**



Due November 2017

NERC Operating Committee Update June 2017 Meeting

SPP Regional Entity Trustees

July 24, 2017

Jim Useldinger, South Central MCN

A regular meeting of the NERC Operating Committee (OC) was held on June 7-8, 2017 in San Diego, CA.

OC meeting highlights:

- **VOTING ITEMS**

- **Inverter Task Force Report**

The OC was provided a summary of the Blue Cut fire event that occurred on August 16, 2016 in California. The fire raced toward a transmission corridor comprised of three 500kV lines and two 287kV lines causing multiple line faults throughout the day. Four of these fault events resulted in the loss of a significant amount of solar Photovoltaic (PV) generation. The most significant solar PV generation loss was the single loss of nearly 1200 MW of PV generation from 26 solar PV sites. There were no solar PV facilities de-energized as a direct consequence of the fault event, rather the facilities ceased output as a response to the fault on the system. Key findings and recommendations of the report:

- Inverters that trip instantaneously based on near instantaneous frequency measurements are susceptible to erroneous tripping during transients generated by faults on the power system. Inverter manufacturers have recommended a change in their inverter settings by adding a time delay to their frequency tripping to allow the inverter to “ride through” the transient/distorted waveform period without tripping.
- The majority of the currently installed inverters are configured to momentarily cease current injection for voltages above 1.1 per unit or below 0.9 per unit. In the reported event, some inverters that went into momentary cessation mode, returned to pre-disturbance levels at a slow ramp rate. NERC is being asked to review PRC-02402 to determine if it needs to be revised to indicate that momentary cessation of inverter connected resources is not allowed within the “no trip” area of the voltage curves.
- As a result of these findings, a NERC Alert was issued to ensure GOs and GOPs are aware of the recommended changes to inverter settings and the risk of unintended loss of resources. The OC provided comments to a 1st draft NERC Alert.
- Additional analysis of momentary cessation is needed for voltages less than 0.9 per unit or greater than 1.1 per unit. The newly formed Inverter-Based Resource Performance Task Force, with members from both the OC and PC, presented a scope document for the work as outlined in the Report.

The OC approved the Inverter Task Force Report and the new Inverter-Based Resource Performance Task Force Scope.

- **2017 State of Reliability (SOR) Report**
NERC Staff reviewed the highlights of the SOR. Several notable items included no Category 4 or 5 events, misoperations declined, frequency response improved, cyber and physical risks are perceived to be increasing despite no loss of load events
The OC approved the SOR Report.
- **Reliability Guideline: Area Control Error Diversity Interchange (ADI) Process** – minor changes
- **Reliability Guideline: Operating Reserve Management** – incorporation of the frequency response Sharing Reliability Guideline
- **Reliability Guideline: Inadvertent Interchange** – add roles and responsibilities of the Regional Administrators
These three Reliability Guidelines were presented to the OC by the Reliability Subcommittee.
The OC approved posting these Guidelines for a 45-day industry comment period.
- **Reliability Guideline: Generating Unit Winter Weather Readiness v2.0**
The Event Analysis Subcommittee presented the proposed revisions to the Guideline for winter weather preparations. An industry webinar is being planned to review the update Guideline.
The OC approved posting this Guideline for a 45-day industry comment period
- **Continuing Education Administrative Manual, v4.4**
The Personnel Subcommittee presented an overview of the revisions to the Manual.
The OC approved the Manual.
- **RS Recommendation to Retire the NERC Interchange Reference Guideline**
All the information contained in this Guideline is now contained in the NAESB Business Practices
The OC approved a motion to retire this Guideline

- **INFORMATION ITEMS**

- **Real-time Assessments Task Force (RTATF)**
The Event Assessment Subcommittee formed a TF to investigate the compliance and reliability concerns regarding a Real Time Assessment as required in NERC Standard TOP-001-3 R13 and IRO-008-2 R4, discuss how RTAs are completed when there is a loss of EMS, and develop any necessary guidance. The RTATF presented an update on the preparation of an Implementation Guidance document. The document was provided to NERC and is in the process of being reviewed by all eight regions for use as compliance guidance.
- **Methods for the Establishment of IROs Task Force (MEITF)**
The Task Force is in the process of defining new terms and clarifying definitions for cascading and uncontrolled separation with the intent of developing consistency across all Reliability Coordinators. The Task Force anticipates to have a draft Reliability Guideline developed by the end of the 2017.
- **North American Generator Forum (NAGF) Update**
The NAGF focuses on two areas; tactical (current critical activities ensure reliability) and strategic (important goals for the reliability of the system). Members continue to participate in

NERC and other industry committees and forums to track and work on existing and emerging issues such as frequency response.

- **North American Transmission Forum (NATF) Update**

The NATF has four key focus areas; system operations, operator training and development practice, human performance practices, and risk assessment with internal controls and compliance practices. The NATF has developed the “Spare Tire Project” – BES Operations in Extreme Loss of Situational Awareness and Operations Tools and hosts a System Operations – Control Center Workshop.

- **OC Leadership Changes**

Chair Jim Case was presented with a resolution of appreciation.

Vice Chair Lloyd Linke was approved as the new Chair.

David Zwergel was approved as the new Vice-Chair.

- **COMMITTEE AND SUBCOMMITTEE ITEMS (in addition to voting items above)**

- Essential Reliability Services Working Group (ERSWG)**

- The ongoing work for 2017 for the ERSWG include -

- 1) Continue the development and refinement of ERS Sufficiency Assessments.
 - 2) Develop of forwarding looking (predictive) analyses of ERS
 - 3) Follow up on DER recommendations.

- Operating Reliability Subcommittee (ORS)**

- 1) Approved the VACAR South Reliability Plan based on the nature of the minor revisions
 - 2) Work with the RS to ensure the appropriate processes are in place to support future time error corrections if needed.
 - 3) Continue to work with NERC on planning activities for GridEx IV to be held in 2017

- Resources Subcommittee (RS)**

- 1) Continue to review the four interconnection time error reports for 1Q 2017. All manual corrections for the EI and WI were fast time error corrections.
 - 2) Continue to monitor time error, BA’s inadvertent balance changes, and mismatches of NIS and NIA between BA’s
 - 3) Reviewed BA BAL-003-1 frequency response performance (FRS) as compared to their obligations (FRO) for 2015 and 2016 and began outreach to BAs that appear to have issues meeting their obligations.

- Event Analysis Subcommittee (EAS)**

- 1) 5th Annual Monitoring and Situational Awareness Technical Conference is planned for October 3-4, 2017 at the Georgia Power Company Corporate Headquarters located in Atlanta, GA
 - 2) Reviewed four recently published Lessons Learned

Personnel Subcommittee (PS)

- 1) Working with NERC staff on the implementation, communication and training for the new SOCCED platform
- 2) Working on a comprehensive evaluation of adult learning principles and instructional design concepts in order to develop program criteria that results in quality learning events.
- 3) Recruiting new members for the Continuing Education Review Panel (CERP)
- 4) Working on a long-term strategy regarding the CE Provider workshops

Next Meeting

The next meeting of the Operating Committee will be on September 11-12, 2017 in Quebec City, Quebec, Canada.

NERC Compliance and Certification Committee Status Report

July 24, 2017

Submitted by Jennifer Flandermeyer, SPP RRO Representative
Sr. Manager, Federal Regulatory Compliance Policy, Kansas City Power & Light
Company

The North American Electric Reliability Corporation (NERC) Compliance and Certification Committee (CCC) convened their quarterly meetings on May 17-18, 2017. The following are the most significant highlights from those meetings. Agenda and background materials are posted as follows:

<http://www.nerc.com/comm/CCC/Agenda%20Highlights%20and%20Minutes%202013/CCC%20Agenda%20Package%20May%202017%20Final.pdf>

Minutes and additional background materials are posted as follows:

<http://www.nerc.com/comm/CCC/Agenda%20Highlights%20and%20Minutes%202013/May%202017%20CCC%20Meeting%20Minutes.pdf>

These notes are provided for information purposes only from attendance at the aforementioned meetings. The notes are not provided to comprehensively represent all agenda topics.

CCC Complaint Form

An update was provided on this activity, which included a background document created for those entities who might chose to file a complaint with the CCC. NERC Legal staff discussed the CPPS input on this process and the possibility the form could be housed on the CCC web page to provide the option to submit a complaint. The recipients of the completed form for a submitted complaint would be the CCC chair as well as NERC's Director of Internal Audit who would review and determine appropriate action(s). NERC will work to revise the process based on input from CPPS and continue to work with CPPS to finalize. Once the process is finalized, notification will be provided to the full CCC prior to it going live on the NERC website.

ERO Consistency Initiative – CCC Participation Update

An update was provided to the CCC on the Task Force activities and the upcoming joint NERC/CCC presentation at the August NERC board meeting.

The CCC Consistency Working Group (CWG) draft CWG scope document was presented to the CCC. Five CCC members will be appointed to the CWG annually in March by the CCC chair. The Scope document was approved.

The CCC Chair appointed five CCC members to the CWG. The five CCC members appointed are: Lisa Milanese (CAISO), Matt Goldberg (NE-ISO), Scott Tomashefsky (NCPA), Martha Henson (ERCOT), and Helen Nalley (Southern Company). Any CCC members who had interest in participating on the CWG should express interest later in the year for Chair appointment.

Independent Audits

Status Update on Independent Audit of the 2017 Standard Processes Manual (SPM) Audit:

NERC's Manager of Internal Audit provided an update on the independent audit of the NERC Standards Process Manual, which included a PowerPoint presentation. The kick off meeting is scheduled for June and Fieldwork will be conducted in July / August. CCC observers on the SPM audit include Clay Smith (GASOC), Terry Bilke (MISO), Lisa Milanese (CAISO), Jennifer Flandermeyer (KCPL), and Patti Metro (NRECA).

NERC's Internal Audit will provide an update on closed mitigation activities from the prior NERC CMEP audit at the September 2017 meeting.

ERO Enterprise Guide for Internal Controls – Recommendations Status Update

An update was provided to the CCC on the activities the team is working on related to the discussion on the ERO Enterprise Guide for Internal Controls that occurred at the March meeting. A small team was convened to provide recommendations to the ERO on the Guide. The update status discussed activities that have occurred including a PowerPoint presentation (included in the revised agenda package). Two of the major team deliverables are to provide input on the value and principles to improve the introduction section of the existing ERO Enterprise Guide for Internal Controls and support ERO Enterprise outreach and messaging.

CCC discussion noted a need to continue to review messaging and how the ERO Enterprise uses internal controls to help clarify industry understanding of how internal controls impact and factor into CMEP activities. The CCC continues to work with NERC on providing outreach support and will be supporting the July 2017 Standards and Compliance Workshop, specifically, the internal controls discussion taking place at the workshop.

Next steps, as noted in the background material, include providing a redlined ERO Guide for Internal Controls to the CCC for comment. The CCC is only providing recommended edits to the introduction to help demonstrate the value. Additionally, NERC and the CCC will work together to schedule a joint face-to-face meeting between ERO Enterprise staff involved with internal controls and CCC members to further support of the Risk Based CMEP success through collaboration.

Subcommittee Updates

Nominating Subcommittee:

The board approved all recommended nominations at the May NERC Board meeting. Also, several nominations for members were received and it was determined that the nominees did not meet the qualifications per the CCC charter and notifications have been made.

ERO Monitoring Subcommittee (EROMS):

In the EROMS report, the Subcommittee expects to review the self-certification responses from NERC at the September 2017 meeting.

EROMS conducted an initial review of the procedure under development that was reported on by NERC's Director Internal Audit at the March meeting (Draft CCC Procedure for CCC observation of NERC Regional Entity audits under NERC Rules of Procedure, Appendix 4A). The Subcommittee anticipates providing the procedure for review and approval at the September 2017 meeting.

Compliance Processes and Procedures Subcommittee (CPPS):

The CPPS has been working on updates to CCC Procedures on hearing, mediation, and confidentiality. There are three CCC Procedures currently under review: CCCPP-004, CCCPP-006, and CCCPP-009. CPPS anticipates having the revised procedures for review at the September 2017 meeting and approval at the December 2017 meeting. Any CCC member who is interested in the revisions to CCCPP-009 to contact him to get involved in reviewing and providing comments in the July timeframe.

There will be a package provided to the NERC board in February 2018 that includes the updated procedures, CCC Work plan and any governing document updates. It was recommended that after these procedures are approved that a walkthrough be held for CCC members at a future meeting and that this could happen at the March 2018 meeting after the NERC board has approved them.

Organization Registration and Certification Subcommittee (ORCS):

The Subcommittee provided an update from the full day meeting with the ERO ORCG and outlined the success of that meeting as well as some of the highlights for upcoming collaboration.

Future Meeting Dates

- September 13 – 14, 2017: Atlanta, GA (NERC Offices)
Wednesday, 8:00 a.m. – 5:00 p.m. (Full day Subcommittees) and
Thursday, 8:00 a.m. – Noon (Full CCC meeting)
- November 29 - 30, 2017: West Palm Beach, FL (Hosted by FPL)
Wednesday, 8:00 a.m. – 5:00 p.m. and Thursday, 8:00 a.m. – Noon
- March 13-14, 2018: Atlanta, GA (NERC offices)
- June 12-13, 2018: Folsom, CA (CAISO offices)
- September 18-19, 2018: Austin, Texas (Texas RE offices)
- December 4-5, 2018: Atlanta, GA (NERC offices)

NERC Critical Infrastructure Protection Committee (CIPC) Report to Southwest Power Pool Regional Entity Trustees

Submitted by Eric Ervin, Chair, SPP CIPWG
July 5, 2017

NERC CIPC Meeting

- The NERC CIPC held its quarterly meeting in San Diego, CA June 6-7, 2017.
 - Agenda, Presentations, and Minutes:
 - <http://www.nerc.com/comm/CIPC/Pages/AgendasHighlightsandMinutes.aspx>
 - Next NERC CIPC Meeting will be held in Quebec City, Quebec CA September 12-13, 2017.
- Mr. Marc Child, CIPC Chair, Great River Energy, provided the opening remarks.
 - NERC Board Meeting
 - Future of the E-ISAC is to become something the industry cannot live without with eventual plans to merge with Oil & Gas.
 - Three-year roadmap included cybersecurity as a core topic through the E-ISAC.
 - 2017 Activities - Security Metrics, Collaboration, Emerging technologies, Grid Ex, Guidance.
 - 2018 Look-ahead - One new metric, supply chain guidance, GridEx 4, Prioritize RISC 3-5 year recommendations.
- Mr. Steve Herrin, Director of Operations, NERC E-ISAC, provided an E-ISAC Update
 - The E-ISAC executed a significant improvement initiative over the past two years based on findings and recommendations developed by the Electricity Subsector Coordinating Council (ESCC) in 2015. Looking forward, the electricity industry would like the E-ISAC to become an indispensable resource for security information sharing and analysis, and to be the centerpiece for building a highly-engaged community of security professionals.
 - To carry forth this vision, the E-ISAC must undergo continuous improvement and evolution that reflects the changing threat landscape, changing technologies and business processes inside the industry, and changing customer expectations for a highly reliable and secure electricity infrastructure that is increasingly more integrated with insecure infrastructures such as the public Internet. This will require additional resources for people, technology, and facilities above what has been budgeted in previous years.
 - The E-ISAC Members Executive Committee encouraged NERC to add necessary staffing to support long-term strategy.
 - Currently developing specific resource requirements and capabilities to meet the long-term strategy including people, technology, and facilities.
 - Initial 2018 draft budget will include base E-ISAC costs with two additions:

- Addendum will cover E-ISAC resource requirements in 2018 as first step in supporting the long-term strategy.
 - Addendum will also address what capabilities the E-ISAC will provide with these added resources and the benefits to industry.
- Mrs. Christine Hasha, Compliance Analyst Principal, ERCOT, provided a CIP Standards Update
 - The SDT reviewed the Communication Networks, Virtualization, CIP Exceptional Circumstances in preparation for future formal and informal comment and ballot postings.
 - The SDT reviewed draft of CIP-012 Communication Networks (CommNet) based on the feedback received (Operational Planning Analysis, Real-time Assessments, and Real-time monitoring). The SDT will continue to refine the requirement language for formal posting. Considering developing and Implementation Guidance document. Targeting July Standards meeting to be released in draft form.
 - Transmission Owner Control Centers (TOCC). The SDT continued to move forward with a revised CIP-002 Attachment 1 Criterion 2.12.
 - CIP Exceptional Circumstances (CEC). The SDT determined minimal additions to those seven requirements parts noted in the comment form were appropriate and would move forward.
 - Draft Virtualization Definitions. The SDT reviewed proposed modifications to the Cyber Asset definition to clarify its applicability to virtualized environments.
- Mr. Nathan Mitchell, CIPC Vice Chair, APPA provided an Electricity Subsector Coordinating Council Update
 - June 6th meeting discussed the Executive Order and where ESCC priorities might align. Discussed strategic priorities informed by an update on NATF’s Supplemental Operating Strategies (SOS) initiative and the Threat Matrix and Risk Analysis project, as well as updates on cross-sector initiatives.
 - R&D Strategic Committee. Discussed the EMP Preparation, Resilient Communications, and Automated Incident Response.
 - Threat Information Sharing Strategic Committee. Discussed the E-ISAC Strategic Plan as well as CRISP.
 - Industry-Government Strategic Committee. Discussed the key takeaways from Clear Path V and prep for GridEx IV, outstanding issues for the Cyber Mutual Assistance, public affairs proactive incident response messaging, and state and cross-sector coordination.
 - ESCC Overview and Strategic Priorities Discussion
 - Discuss the “value of the partnership,” the Cyber Executive Order, how the ESCC and government can align their priorities
 - Public Affairs & Incident Response Messaging
 - Discuss having industry and government further develop the ESCC communications playbook to address