



Steve Ashbaker
Director Operations

NASPI Workgroup Meeting
February 21, 2013
Atlanta, GA

September 8, 2011 Event Update

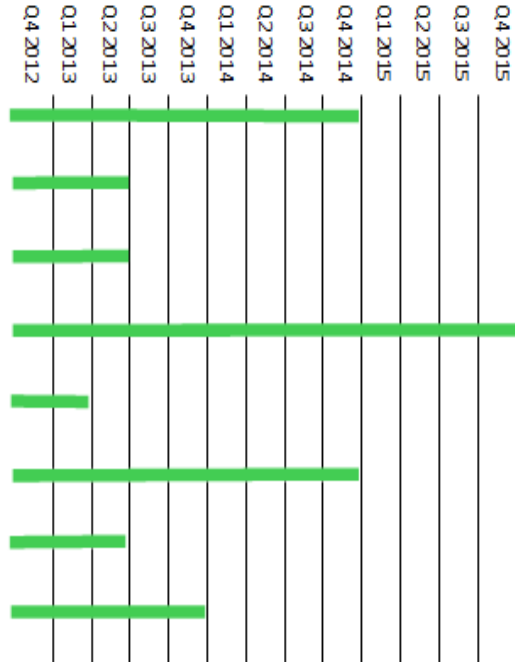
- May 1 – FERC/NERC Inquiry Report issued
 - 27 Recommendations in 8 categories
 - July 26 – Received letter from Gerry Cauley
 - Identified 8 systemic or institutional concerns
 - October 31 – Launched September 8 webpage and Monthly Progress Dashboard
- [September 8, 2011 Outage Event Response](#)
- Continuing semi-monthly calls with NERC and FERC

NERC Systemic Issues

Status of WECC Activities

**% of
Milestones
Completed**

Estimated Timeline for Completion



Systemic Issue	Activity	Activity	Activity	Activity	Activity	Activity	Activity
SI1	RC15	ORG4	RC12	RC13	RC17	RC3	RC8
	RC9	RC11	RC14	ORG6	ORG7	O&P22	
SI2	ORG1						
SI3	RC6	RC7	RC11	RC12			
SI4	O&P5	O&P6	O&P9	O&P17	RC7		
SI5	ORG3	RC1	RC4	RC10	RC2	RC5	ORG2
	RC18						
SI6	RC1	RC4	RC6	ORG3	RC2	RC5	RC8
	RC17	O&P13	O&P14	ORG7			
SI7	RC3	O&P2	O&P9	O&P13	O&P16		
SI8	CPL1	CPL2	ORG1	ORG5	CPL3	CPL4	

47%
75%
45%
63%
81%
81%
55%
70%

Dashboard Notes

Activities Key
 ORG – Organizational Activities
 RC – Reliability Coordinator Activities
 O&P Operations and Planning Activities
 CPL – Compliance Activities

Recommendations 1-27 are defined in the North American Electric Reliability Coordinating Council (NERC) and the Federal Energy Regulatory Commission (FERC) Report on the Arizona-Southern California Outages on September 8, 2011.

Systemic Issues 1-8 were identified by NERC President and CEO, Gerry Cauley in a July 26, 2012 letter to WECC CEO, Mark Maher.

WECC Activities are defined in WECC's Response to the "Arizona-Southern California Outages on September 8, 2011" Report.

WECC's Comprehensive Response

Five WECC Focus Areas

Organizational

Reliability
Coordination

Operations
and Planning

Compliance

NERC

September 8, 2011 Event Update

- ***WECC Activities and Achievements***
- Operational Guidelines
 - Real-time Tools (Recommendation 12)
 - Data Sharing Guideline (Recommendations 11)
 - Relay Loadability Guideline (Recommendation 25, 26 & 27)
 - Next-day Study Guideline (March 2013)
- RAS and Protection System Modeling
 - MSRATF & RPSOTF

September 8, 2011 Event Update

- **WECC Activities and Achievements**
- Launched RC.org website
- Data Sharing UNDA (100% of applicable entities)
- Published next day studies to all signatories of UNDA
- SOL/IROL Methodology Phase I and Phase II
- Completed phase I of sub 100 kV analysis
- Create a CAMX RC position (2014)

September 8, 2011 Event Update

- ***WECC Activities and Achievements***
 - Share RTCA Results via RC.org
 - Implementation of the WAV
 - Enhanced SOL/IROL methodology, now working on phase II
 - Published *Monitoring of Real-Time SOL and IROL Exceedance* procedure
 - Completed phase I of sub-100-kV analysis

September 8, 2011 Event Update

- ***WECC Activities and Achievements***
- Validation of models between operations and planning
- *Increased awareness of WECC practices*
 - Education related to “path” concept
 - Education related to RAS

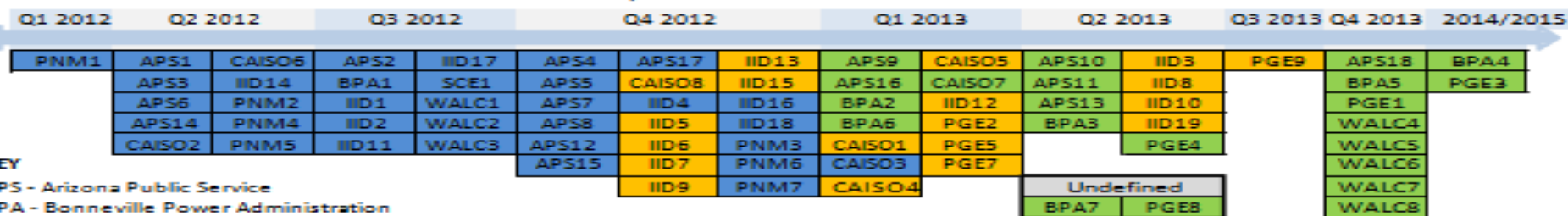
September 8, 2011 Event Update

- Tracking External Activities
 - 12 NERC activities – working with NERC and chairs of NERC OC and PC
 - Quarterly dashboard for WECC member-submitted activities

Fourth Quarter 2012 Milestones Update

Activity	Milestone	Status	Actual or Expected Completion date
APS4	Acquire data for External Facilities	Complete	October 2012
APS4	Include sub-100-kV external facilities	Complete	October 2012
APS5	Include external contingencies in seasonal studies	Complete	December 2012
APS7	Expand Seasonal Studies to include external facilities	Complete	December 2012
APS7	Hire additional staff to support additional study scenarios	Complete	December 2012
APS8	Expand near- and long-term planning studies	Complete	December 2012
APS12	Ensure adequacy of post-contingency mitigation plans	Complete	December 2012
APS15	Evaluate sensitivity of generator acceleration control	Complete	December 2012
APS17	Confirm Relay Settings	Complete	December 2012
CAISO5	APS-Yuma in full network model	Extended	February 2013
CAISO5	Update procedure to notify WECC RC, TOPs and BAs for loss of RTCA, and train operators	Complete	December 11, 2012
CAISO7	Review need for SONGS separation scheme with one or two units in service	Extended	March 2013
CAISO8	Add angular separation to RTCA	Extended	April 2013
IID4	Conduct full contingency analysis and share seasonal studies	Complete	October 24, 2012
IID5	Create a generic external 100kV contingency list and update as neighboring facilities are identified	Extended	June 1, 2014
IID5	Expand seasonal studies to include multiple scenarios and base cases	Extended	June 1, 2014
IID5	Create standard operating procedure for communication between planning and operations	Extended	June 1, 2013
IID5	Include relay settings in seasonal studies	Extended	December 31, 2014
IID6	Include protection systems in seasonal planning process	Extended	July 1, 2013
IID7	Develop process for benchmarking in conjunction with WECC	Extended	December 31, 2015
IID9	Provide training to System Operators on RTCA application and procedure	Complete	October 31, 2012
IID13	Develop and implement procedure	Extended	March 31, 2013
IID15	Work with WECC to Evaluate Path 44 and Basu/APS-North Gila	Extended	June 29, 2013
IID15	Evaluate and Coordinate SOLs	Extended	April 1, 2013
IID16	Review S-Line RAS with RASRS	Complete	October 5, 2012
IID18	Review facility rating methodologies	Complete	December 12, 2012
IID19	Develop procedures for closing lines with large phase angle differences	Extended	December 31, 2013
IID19	Provide training on new procedures	Extended	December 31, 2013
IID19	Explore options for providing contingency analysis related to phase angle differences	Extended	December 31, 2013
PGE5	Implement state estimator	Extended	December 2013
PGE5	Implement RTCA	Extended	December 2014
PNM3	Review Report	Complete	December 2012
PNM6	Remove over current-relay	Complete	September 2012
PNM7	Acquire ICCP object Data	Complete	December 2012

Estimated Completion Timeline for Member Activities



KEY

- APS - Arizona Public Service
- BPA - Bonneville Power Administration
- CAISO - California Independent System Operator
- IID - Imperial Irrigation District
- PGE - Portland General Electric
- PNM - Public Service Company of New Mexico
- SCE - Southern California Edison Company
- WALC - Western Area Lower Colorado

This dashboard only contains updates to activities that were reported to WECC for inclusion in the WECC Response to the Arizona-Southern California Outages on September 8, 2011 Report and Addendum.

- Completed
- In Progress
- Estimated completion date extended

September 8, 2011 Event Update

- Organization Changes (Bifurcation; RCCo, RE)
- RCCo governed by and independent BOD and strong member advisory panel
- RCCo – registered functions (RC & IA)
- Regional Entity – NERC delegated functions including Compliance, Event Analysis, Situational Awareness and Member Services
- RCCo go live January 1, 2014

Recommended NERC Activities

- NERC1 - Contingency Analysis
- NERC2 - Sub-100-kV Elements
- NERC3 - Parameters for Simulations
- NERC4 - Adequate Real-time Tools
- NERC5 - Notification of Loss of RTCA
- NERC6 - Sub-100-kV Relays
- NERC7 - Determination of Phase Angle Differences

Recommended NERC Activities

- NERC8 - Generator Validation Standard Drafting Team
- NERC9 - Review TOP-003
- NERC10 - SAMS review Generator Control Issues
- NERC11 - Consider De-registration Process
- NERC12 - Consider Planning Coordinator Registration Gap Issues

Modeling Relays and RAS in Base Cases

- Modeling SPS and Relays Ad-Hoc Task Force (MSRATF)
 - Group formed under TSS
 - Finalized Scope of Work January 2013
 - Frequent meetings
 - 3 Sub-groups
 - RAS
 - Relays
 - Contingency Definitions

Modeling Relays and RAS in Base Cases

- Relay Sub-group
 - Begun work examining existing transient stability models
 - Assignments given to sub-group members
 - Gather required data from relay engineers
 - Populate and test existing models
 - Come up with recommendations

Modeling Relays and RAS in Base Cases

- RAS Sub-group
 - Initially focusing on modeling RAS in power flow analysis
 - Intending to survey how RAS are modeled today
 - Identify best practices
 - Determine if there is a common method

Modeling Relays and RAS in Base Cases

- Contingency Definitions Sub-group
 - Identify how currently done in the various software programs
 - Both power flow and transient simulation
 - Determine if a common format or conversion between programs is possible
 - Strive to create a WECC-wide list of contingencies to be made available with base cases.

WECC Path Operator Issues

- Multiple owners, operators and scheduling entities on a Path
- Not just Path 49; estimated 10 others as well
- Path Operator not in Functional Model
- No specific authority defined for Path Operator to give directives to other TOPs
- Counterparties have no incentive to sign contracts

Proposed Plan

- Jan 31-Feb 1 JGC: Form Task Force
- Late Feb POTF: Review APS whitepaper and develop educational series
- Mar-May: Educational Series
- May – Sept: POTF Meetings, develop recommendation
- Oct 21-24: Present recommendation to Standing Committees

Options for Discussion

- Define authority of Path Operator
- Eliminate Path Operator
- Flow-Based Methodology
- RC as Path Operator
- Coordinated Procedures and Agreements for each Path
- Split Path Operator role and define responsibilities/authority

Questions?



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