WIRAB Webinar: Operational Planning Analysis Process (Next-Day Studies) From RC, TOP, and BA Perspective

May 31, 2017
Outline and Introduction

• Brett Wangen – Peak Reliability, Director of Engineering
  – Operational Study Process Overview
  – Reliability Coordinator’s (RC) Role
• Dede Subakti – California ISO, Director, Operations Engineering Services
  – Balancing Authority’s (BA) Role
• Audience Q&A
Operational Planning Analysis Process (Next-Day Studies) From RC, TOP, and BA Perspective

Brett Wangen
Director of Engineering, Peak Reliability

Dede Subakti
Director, Operations Engineering Services, CAISO
Operation Study Life Cycle

- Three distinct study phases
  - Seasonal
  - Outage Coordination
  - Operational Planning Analysis

- Up to 6 months in advance
- 3-14 days prior to Real-time
- Next-day Study
RC-Wide Seasonal Study Process

• Peak maintains a seasonal coordination process which defines
  o Timelines
  o Study requirements
  o Coordination expectations

• TOPs perform SOL studies in conjunction with their Sub-regional Study Groups

• Identify system stability limits and seasonal TTC
RC-Wide Outage Coordination Process

- Peak responsible for Outage Coordination (OC) process per IRO-017-1
- Key components of the OC plan:
  - Long range process (optional)
  - Short range process – typically requires 7-13 days advance notice
  - Outage submittal process to support various study windows
RC-Wide Outage Coordination and OPA Iterations

…changes to snapshot case…
(outage, load, gen, interchange, etc.)

Study Case
Starting Point –
State Estimator
Snapshot or
power flow case

Study Day/Hour
Projected Peak

Multiple Days Out
(short range, 7-13
days)

Day Ahead
(1-2 days)

Today

Study Case
Starting Point –
State Estimator
Snapshot or
power flow case
Outage Coordination from BA and TOP Perspective

- Outage submission to the RC

- BA assesses resource sufficiency to meet expected load during outage condition

- TOP assesses potential conflict and potential SOL exceedances during outage condition
Outage Coordination from BA and TOP Perspective

- Data needed to perform assessment:
  - Load Forecast for own BA and neighboring BAs
  - Generation outages for own BA and neighboring BAs
  - Expected generation commitment/dispatch for own BA and neighboring BAs
  - Transmission outages for own TOP and neighboring TOPs
Next Day Study (OPA) from BA and TOP Perspective

• Objective is to “fine tune” Operating Plan for next day:
  o BA assesses resource sufficiency
  o TOP assesses potential SOL exceedances

• Operating plan may include additional generation commitment, dispatch, transmission switching, etc
Next Day Study (OPA) from BA and TOP Perspective

- Data needed to perform Next Day Study is the same. It includes:
  - Load forecast
  - Generation outages
  - Transmission outages
  - Generation commitment/dispach

- Results from BA/TOP assessments are uploaded to Peak Reliability dashboard
Next Day Study from RC perspective

• Identify potential SOL and IROL exceedances for the next day
  o Identify cascading risks
• Coordinate with impacted entities
• Develop mitigation plans
• Provide information to RC, TOP, and BA operators so they are prepared
## Study Coordination

### Entity Studies-New

The Entity Studies section serves as the Western Interconnection’s single repository for housing near-term reliability study results from Transmission Operator (TOP) engineers.

It contains results for:
- Next-Day Studies
- Outage Studies

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### Table of Studies

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Critical Study Inputs & Outputs

State Estimator Snapshot
Planned Outages
Load Forecast
Generator Forecasts
RAS Models and Arming Assumptions

Next-Day Study

Pre-Contingency SOL Exceedances
Post-Contingency SOL Exceedances
Voltage Stability Limits

Operating Plans for next day

Real-time Analysis
- Real-time Contingency Analysis
- Enhanced Curtailment Calculator
- Voltage Stability
- Transient Stability
Peak Value Added to Reliability

• Data clearinghouse – enable better studies by TOPs
• Common set of expectations (across seasonal, outage, and next-day studies)
• Wide-area perspective in Peak’s analysis
• Coordination and collaboration to resolve issues that impact multiple TOPs or BAs
Challenges Remain

• Remedial Action Scheme arming status
• Input data quality
• Automation of study processes
• Measuring study quality
  o Drive continuous improvement
Thank You

Webinar recording will be available at: westernenergyboard.org/category/webinars/

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