



WIRAB Monthly Update

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WIRAB Staff

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Outline

- WIRAB Activities
- WECC Activities
- Peak Reliability



WIRAB Activities

- Fall 2017 Leadership Delegation to Washington, D.C.
- WIRAB's 2018 Strategic Initiatives
- WIEB's SunShot Award
- WIRAB Comments to U.S. DOE
- WIRAB's Cybersecurity Webinars
- Upcoming WIRAB Meetings



Fall 2017 Leadership Delegation to Washington, D.C.

- Meetings
 - U.S. DOE Deputy Assistant Secretary, Doug Little
 - FERC Chairman Neil Chatterjee and Commissioner Cheryl LaFleur
- Discussion Topics:
 - WIEB's SunShot Award
 - Changing resource mix in the West
 - Expansion of the Western electricity markets
 - WIRAB's comments to U.S. DOE and FERC
 - WIRAB's Strategic Initiatives for 2018



Fall 2017 Leadership Delegation to Washington, D.C., cont.

Delegation Team:

- Dr. Laura Nelson (UT) WIEB Chair
- Angela Dykema (NV) WIEB Vice-Chair
- Janea Scott (CA) WIRAB Chair
- David Clark (UT) WIRAB Vice-Chair
- Travis Kavulla (MT) CREPC Co-Chair
- John Chatburn (ID) CREPC Co-Chair
- Jordan White (UT) EIM-BOSR Chair



WIRAB's 2018 Strategic Initiatives

- Initiative 1: Advise WECC on the implications of high levels of deployment of solar PV on the reliable operation of the Bulk Electric System.
- Initiative 2: Advise WECC on interdependencies between the natural gas and electric industries in the West and the implications for the reliable operation of the Bulk Electric System.



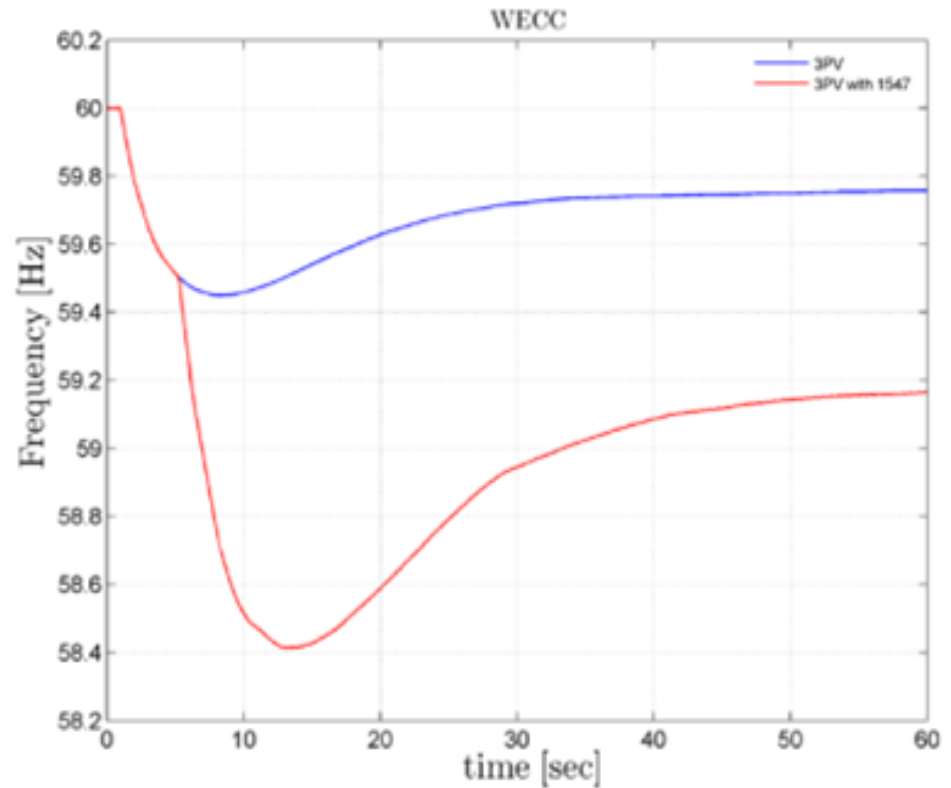
WIRAB's 2018 Strategic Initiatives, cont.

- Initiative 3: Encourage WECC to systematically assess the availability of Essential Reliability Services under a wide-range of future resource scenarios.
- Initiative 4: Encourage the Member Advisory Committees (MACs) at WECC and Peak Reliability to increase their focus on emerging reliability issues and to improve the processes used by the MACs to advise the Boards.



WIEB SunShot Award

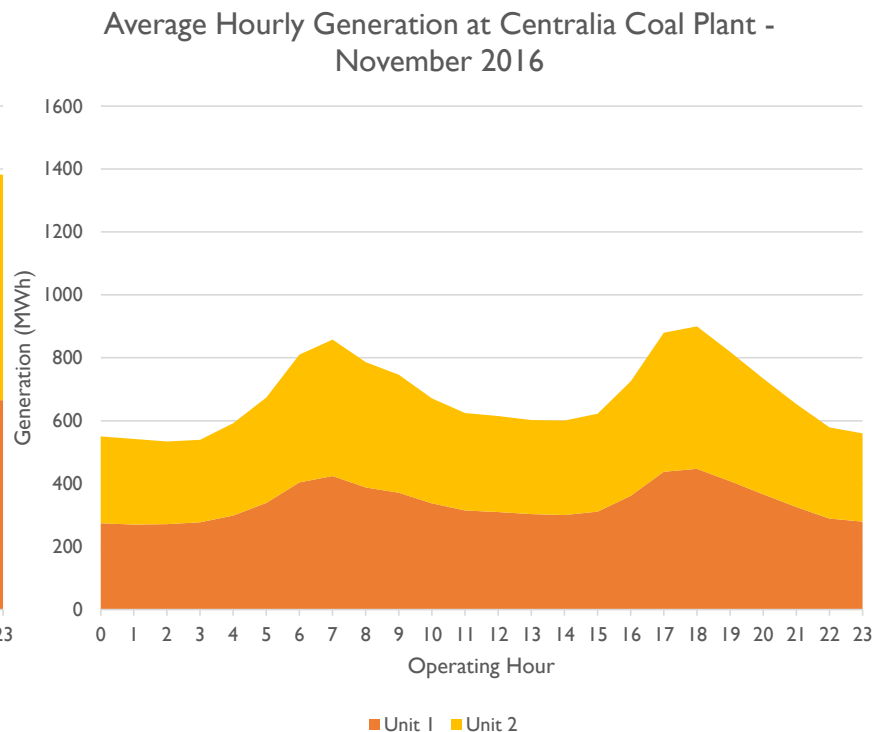
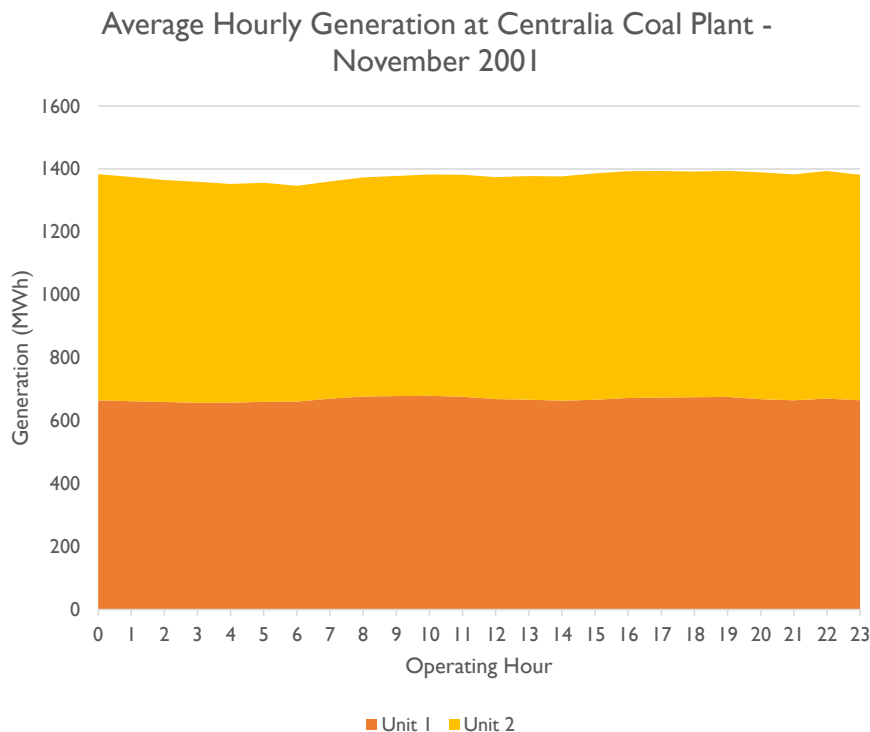
- **Goal:** To mitigate or remove barriers to the deployment of distributed solar PV in the West:
 1. Lengthy interconnection timelines
 2. Utility rate designs
 3. Reliability concerns
- **Project Partners:** NREL and LBNL





WIRAB Comments to DOE/FERC

- Baseload operation of the coal fleet in the WI has decreased from 52% of coal unit operating days in 2001 to 22% in 2016.





WIRAB Comments to DOE/FERC, cont.

- Current studies of the Western Interconnection do not indicate a shortage of primary frequency response, but more studies are needed.
- WIRAB supports DOE Staff recommendations to:
 - Focus on R&D efforts to enhance reliability
 - Expand cooperation across North America
 - Sponsor development of open-source software for grid research community, and
 - Focus R&D on improving VRE integration



WIRAB's Cybersecurity Webinars

- A series of three webinars:
 - *Introduction to Industrial Control Systems, Threats and Risk and Future Trends for Cybersecurity*
 - Friday, December 1, 2017 at 11:00 AM MT
 - *Resilience and Mitigating the Electric Utility Cyber Threat*
 - Friday, December 8, 2017 at 11:00 AM MT
 - *Challenges with State/Provincial Policies to Address Cyber Risk*
 - Friday, December 15, 2017 at 11:00 AM MT
- Presenter: Veracity Industrial Networks
- More information and recordings available at:
westernenergyboard.org/category/webinars/



WECC Activities

- Proposed Bylaw Amendments
- Strategic Planning at WECC
- Assessment of Future Essential Reliability Services



Proposed Bylaw Amendments

- Bucket 3
 - Core provisions pertaining to WECC's non-discretionary committees should be retained in the WECC bylaws (i.e., MAC membership).
- Bucket 4
 - The WECC bylaws should provide for international representation on the WECC MAC and WECC Board.
 - Experience requirements for international and non-international Directors should be consistent.



Strategic Planning at WECC

- Identification of key strategic priorities is critical to making WECC relevant in public policy matters involving the Western Interconnection.
 - The WECC Board should memorialize its decision to adopt a specific set of strategic priorities in a formal, written document.
- Stakeholder engagement is fundamental to identifying key challenges and emerging risks
 - WECC's strategic planning document should specifically outline opportunities for stakeholder engagement.



WECC's Role in Reliability Assessments

- WECC's Delegation Agreement
 - *“WECC shall develop assessments of the reliability of the Bulk-Power System, or ensure that data and information are collected, analyzed and provided to NERC in support of the development of reliability assessments.”*
 - *“WECC shall also develop and maintain, and collect data in support of the development and maintenance of , reliability performance metrics and assessments of risks to the Reliable Operation of the Bulk-Power System”*



RAC Reliability Assessments

- Should be forward looking, not just next winter and next summer, but 5, 10, 20 years out.
- Requires rigorous production cost modelling to get future resource mix right.
- Requires rigorous power flow analysis to evaluate the provision of essential reliability services.
- Requires input databases that are internally consistent, accurate, and reflect reasonable assumptions.
- WECC and the RAC cannot rely on others to vet the models and databases; WECC must conduct its own independent reliability assessments.



Peak Reliability Activities

- RC Certification Process
- Enhanced Curtailment Calculator
- Top Reliability Concerns
- Reliability Topic: Overgeneration



RC Certification Process

- Purpose: To ensure the applicant has the tools, processes, training, and procedures necessary to perform the Reliability Coordinator (RC) function.
- Certification must be completed within nine months of date of acceptance of application.
- Reliability Coordinator must start operation within twelve months of becoming NERC certified.



RC Certification Process: Roles & Responsibilities

- **NERC**
 - Oversee & coordinate the Certification process
- **Certification Applicant:**
 - Submit complete Certification application
 - Verify compliance with Certification requirements
- **Regional Entity (i.e., WECC)**
 - Review application for completeness
 - Assemble **Certification Team***, comprised of:
 - Existing RC
 - BA and TOP in proposed RC area
 - Each affected RE
 - NERC
 - Approve or deny CT recommendation
 - Notify applicant of NERC decision

*Entities such as government representatives or other stakeholders may be observers in the Certification process.



Enhanced Curtailment Calculator

- Tool available to system operators to determine flows on the system contributing to system operating limit (SOL) exceedances
- Four Phases:
 1. Real-time situational awareness (completed)
 2. Qualified Path management (completed)
 3. Future hour assessment
 4. All transmission Element management
- Security Constrained Economic Dispatch (SCED) without the ED
 1. Define Elements (via real-time assessments or studies)
 2. Assign Relief Obligation to impacted entities
 3. Monitor (up-to 30 min) – BA/TOP/MO chooses how to achieve Relief Obligation
 4. If unresolved, Peak can issue Operating Instructions



Enhanced Curtailment Calculator Cont.

- ECC Next Steps:
 - Two whitepapers posted requesting feedback on ECC technical design elements (due Dec. 15)
 - Webinar to review whitepapers (Dec. 6 at 3:00 PM PT)
- WIRAB Next Steps:
 - WIRAB Staff review technical design element whitepapers
 - WIRAB Staff to continue to follow ECC development



Potential Reliability Topics for Discussion at Peak MAC

- Expanding markets
 - Seams coordination
- Operational challenges and ensuring Essential Reliability Services performance
 - Variable Energy Resources (VER), Distributed Energy Resources (DER), & traditional generation resources.
- Data sharing between operational entities
 - Including third-parties operators such as DER providers and small generator operators
- Accurate Interconnection-wide operational models
 - High quality data inputs including load/generation forecasts, outage information, operational dynamics, etc.



Reliability Topic: Overgeneration

- Overgeneration – More electricity than there is demand to use it (Duck Curve)
- Peak's focus should be on how overgeneration effects the real-time, bulk-power system reliability and operations
- Questions to ask:
 - What sort of challenges is Peak seeing?
 - Are there interconnection-wide coordination issues?
 - Does Peak have quality data/information to monitor overgeneration issues?
 - How can Peak's wide area view help mitigate challenges?
- Overgeneration discussion at Peak's BOD Meeting:
 - December 13th at 11:00 AM PT



Upcoming WIRAB Meetings

- **Spring 2018 Joint CREPC-WIRAB Meetings:**
 - April 18-20, 2018 in Vancouver, BC
- **WIRAB Monthly Teleconference Meeting**
 - First Thursday of every month at 11:00 AM MT
 - Next Meeting: January 4, 2018 at 11:00 AM MT



Thank You

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