

WIRAB Monthly Meeting

October 3, 2024



Introductions



Outline



WECC Activities:

WECC Update



WIRAB Activities:

Inverter-based Resource Project
Recommendations & Next Steps



Upcoming WIRAB Meetings



WECC Update

October 3, 2024

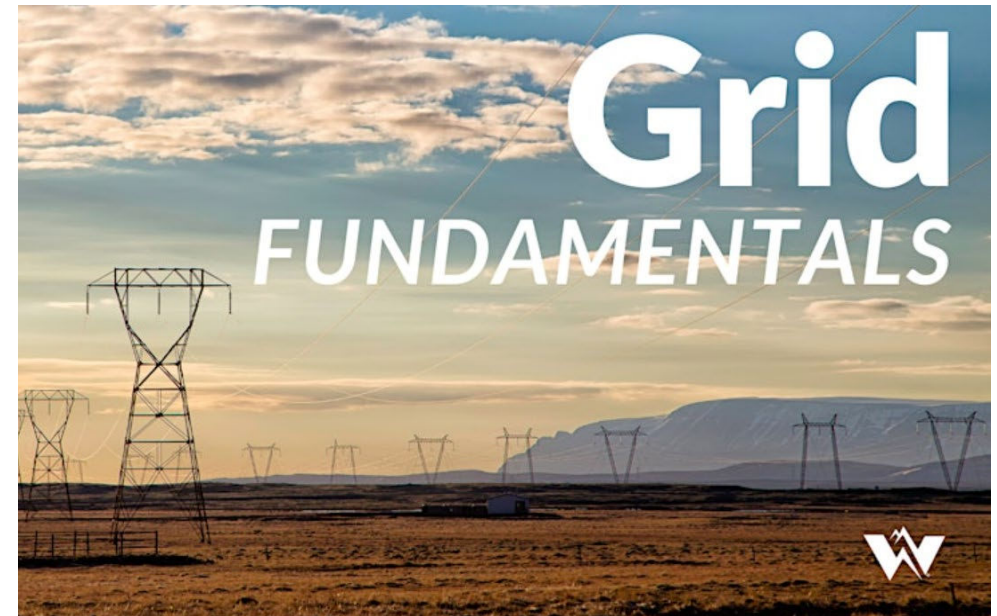
Matt Evans
Stakeholder Engagement
Specialist

WECC's Long-term Strategy

- To ensure that WECC continues to fulfill its critical reliability mission and address industry changes, WECC is updating its Long-term Strategy (LTS)
- The current LTS was approved by the Board in fall 2020
- The draft LTS is posted at [wecc.org](https://www.wecc.org) later this week
- Feedback is welcome

Grid Fundamentals

- November 5–6, virtual
- [Registration](#) is now open
- Offers a comprehensive overview of the electric system—technology, operation, markets, regulation, and more
- For anyone new to the electric utility industry or those looking for a broader view of the industry



Reliability in the West—A Discussion Series

- Covers a wide range of topics and reliability issues across the Western Interconnection
- Held the first Wednesday of the month at 11:00 a.m. MT
- Go [here](#) for recordings of past webinars
- If you have an idea for a topic, please let us know at engage@wecc.org





Electric Reliability and Security for the West

www.wecc.org



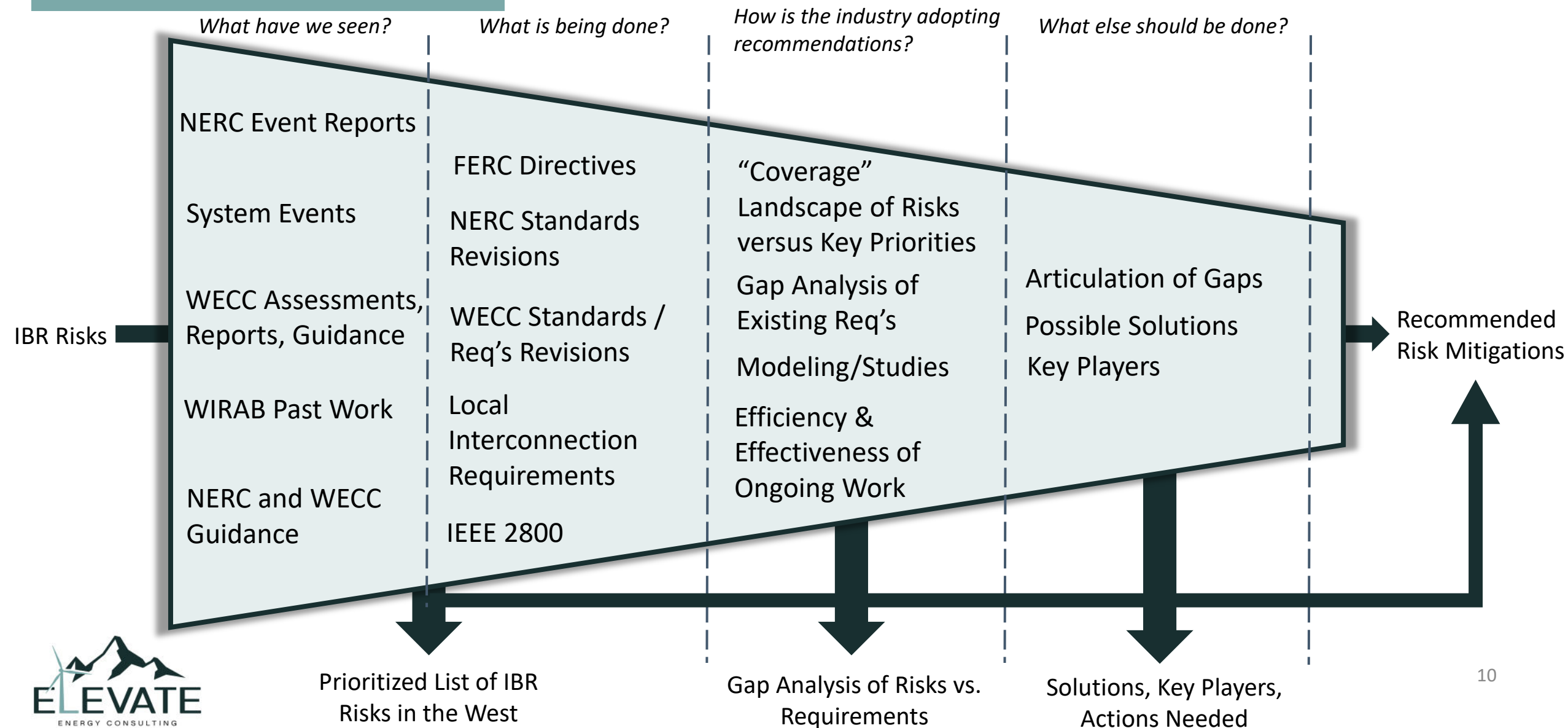
WIRAB IBR Risk Assessment

10/3/2024 WIRAB Monthly Meeting

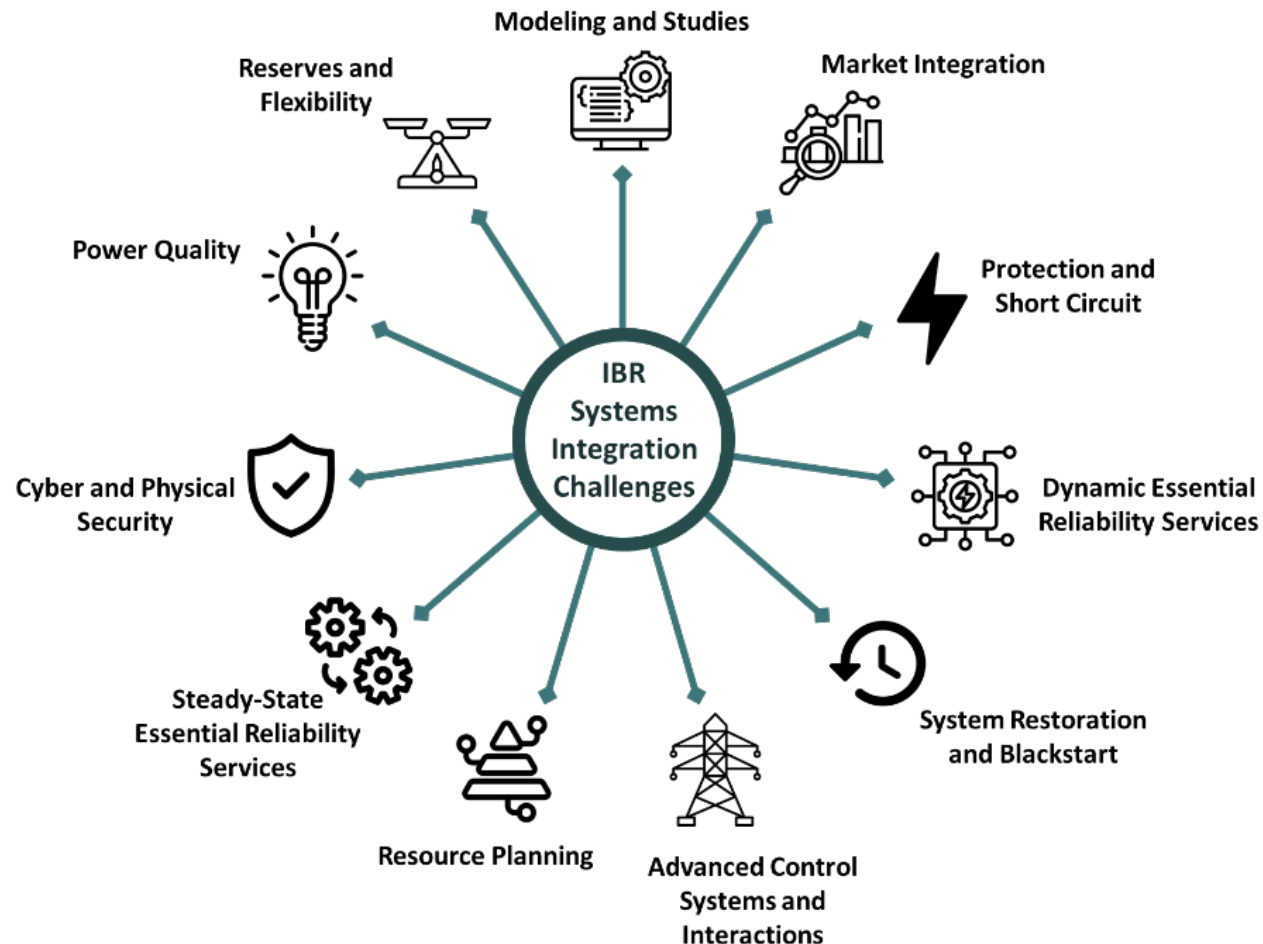
Ryan Quint

Kyle Thomas

High-Level Process for the Project

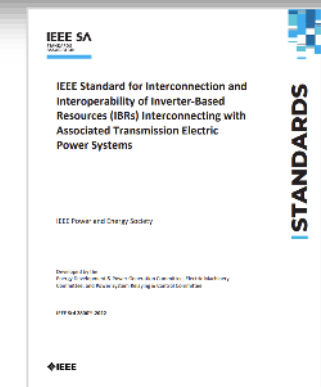
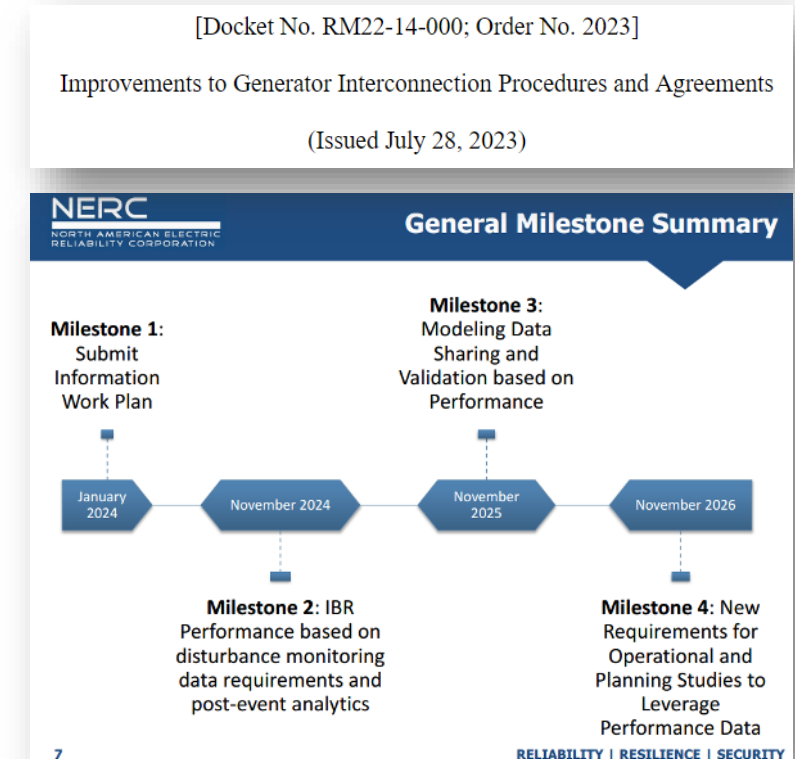


IBR Risks – What have we seen?



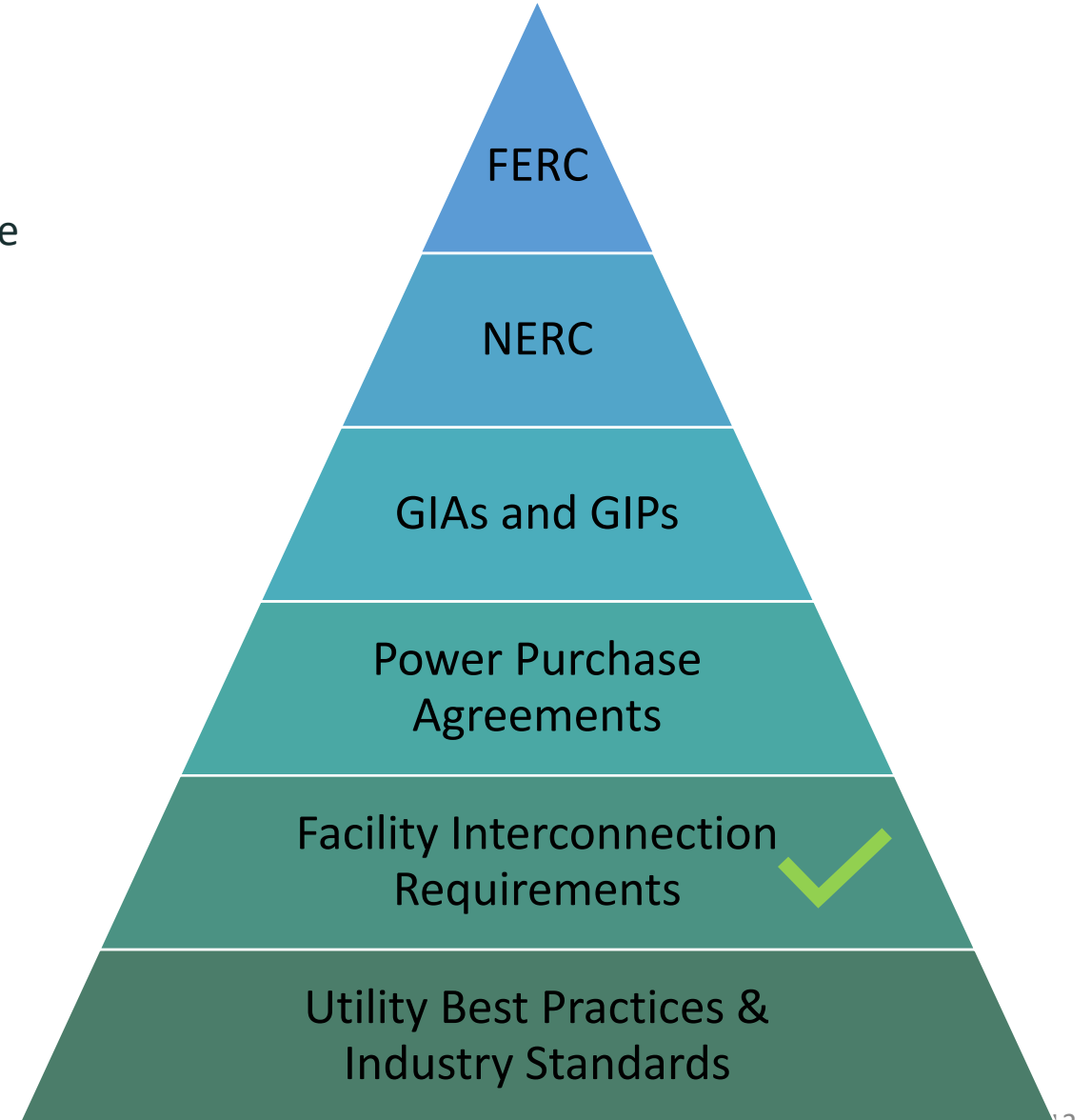
Actions – What is being done?

- **FERC Order 2023:** overhauling generation interconnection process
 - Moving to a “first-ready, first-served” cluster study approach
 - Shortens overall IBR interconnection timelines, design, modeling, studies, etc. (i.e., technical rigor)
- **FERC Order 901 and NERC IBR Work Plan:** new or enhanced standards for known IBR-related risks
 - Data sharing, disturbance monitoring, ride-through performance, modeling and model validation, planning and operations studies
 - Addressing issues observed in past NERC-reported IBR-related grid disturbances
- **FERC IBR Registration Order:** lowering ERO Enterprise registration criteria for smaller IBRs
 - Increased jurisdictional authority for NERC and Regions to smaller IBRs
- **IEEE 2800-2022:** minimum technical capability and performance requirements for IBRs
 - First-of-its-kind IEEE standard that seeks to standardize BPS-connected IBR capabilities and performance



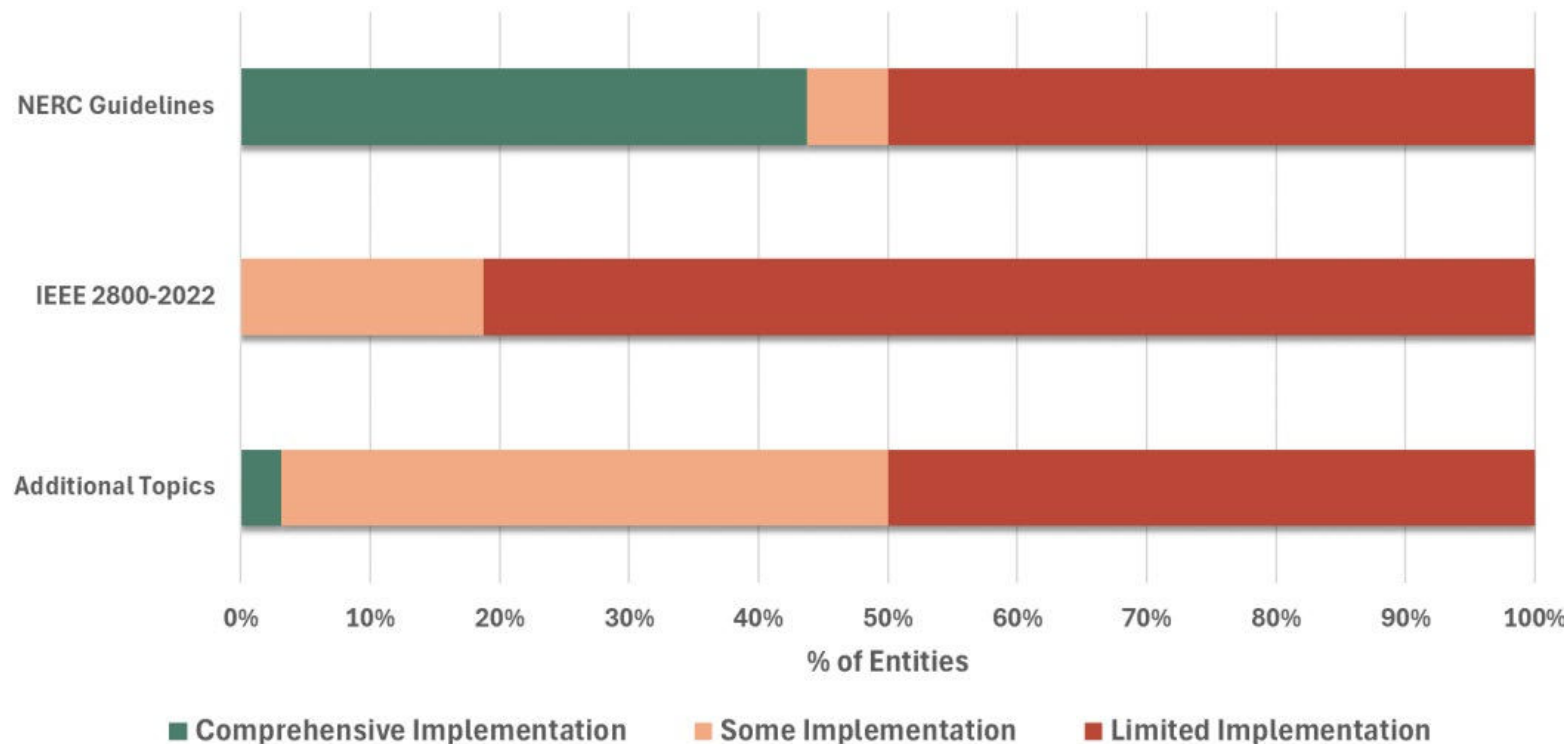
Is Industry Adopting Recommendations?

- As part of the risk assessment, we reviewed **32 Western Interconnection Facility Interconnection Requirements (FIRs)**
- In each FIR, we searched to see if the IBR Integration Risks were being addressed by:
 - Inclusion of NERC Reliability Guideline recommendations
 - Adoption of the IEEE 2800-2022 standard
 - Enhanced IBR-Applicable and IBR-Specific Requirements
 - Ride-Through Capability and Performance
 - Oscillations and Instability
 - Modeling and Model Validation
 - Electromagnetic Transient (EMT) Modeling
 - Inertia and System Strength
 - Event Analysis and Performance Validation
 - Disturbance Monitoring (PMU and DFR)
 - Power Quality
 - Grid Forming
 - Testing and Commissioning



Is Industry Adopting Recommendations?

- Few entities have fully addressed the IBR integration risks and challenges in their FIRs to date
- There is a lag between when industry publishes guidelines and standards to when entities adopt them, and this lag is a concern given the exponential growth of IBRs in the Western interconnection



What Else Can Be Done? (Recommendations)

Step-by-step guide to help Western entities accelerate the mitigation of IBR risks

Near Term

1-2 years

1. WECC more directly and closely support industry enhance Facility Interconnection Requirements for IBRs (standardized template for enhancements, ideally implementing IEEE 2800 standard)
2. WECC conduct targeted regional training (and engage technical industry with working groups) for IEEE 2800, IBRs, EMT, GFM, and more
3. FERC and/or NERC adopt and implement IEEE 2800-2022 in Reliability Standard(s) – harmonized requirements for IBR capability and performance
4. State PUCs emphasize need for proactive enhancement of interconnection requirements (e.g., adopting IEEE 2800-2022)

Medium Term

3-4 years

1. Proactive stakeholder-engaged risk mitigations by WECC for emerging systems integration challenges for IBRs
 - GFM, oscillations, decreasing system strength and inertia, etc.)
2. WECC support pilot projects for emerging IBR risk mitigations (e.g., GFM, EMT, etc.)
3. If no NERC/FERC adoption of IEEE 2800-2022, WECC create a Regional Reliability Standard adopting IEEE 2800-2022 (and future P2800.2)
 - Harmonized West-wide IBR req's.

Long Term

2030+

1. The West consider shifting toward regional grid code approach including:
 - Proactively develop risk mitigations ahead of them occurring (leverage WECC studies program)
 - Independently developed and/or stakeholder-driven (by technical group(s))
 - Technical details defined in code
 - Harmonized across Region
 - Supports smaller entities
 - Clear compliance obligations and enforcement
 - Flexibility for utility-/system-specific needs allowed
 - Applicable to large loads, VPPs, etc.

Key Players in West: WECC (and its members), Transmission Providers (TOs, ISO/RTOs, etc.), WIRAB, State PUCs

What Else Can Be Done? (Recommendations)

Recommendations for State Commissions

- Advocate for enhanced and harmonized Transmission Provider interconnection requirements for IBRs
- Inquire about and support adoption of IEEE 2800-2022 during RFPs and IRP/ISP hearings and filings
- Promote coordination between state and federal authorities by engaging in collaborative discussions with FERC, ISOs/RTOs, and utilities
- Encourage and support utility investment in grid modernization such as advanced technologies like FACTS devices, advanced modeling/studies, and long-term transmission upgrades
- Support streamlining interconnection processes to reduce unnecessary delays, avoid administrative burdens, and ensure only credible projects are introduced into the queue
- Stay informed on active industry efforts and developments in this area of IBRs and other emerging risks and challenges facing the industry



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Next Steps: WIRAB's IBR Risk Assessment Project



August:

Present Risk Assessment Analysis and Results at Monthly Meeting
Draft Recommendations



September:

Finalize Technical Report and Executive Summary



October:

Share Report and Proposed Recommendations at Monthly Meeting
Discuss Results and Recommendations at Joint CREPC-WIRAB Meeting



November:

Seek WIRAB Endorsement of the Recommendations to Develop Formal WIRAB Advice



December:

Discuss Results and Recommendations as WIRAB Advice to the WECC Board
Discuss Results and Recommendations with FERC during Western Delegation Visit

Upcoming Meetings



WIRAB Monthly Meeting

First Thursday of the Month

Next Meeting: November 7, 2024 at 11:00 AM MT

Fall 2024 Joint CREPC-WIRAB Meeting

October 22-24 in San Diego, CA

<https://www.westernenergyboard.org/meeting-calendar/>

Thank You!

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