

Coordinate Operations Standard

Steve McCoy

Standard Drafting Team Chair

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Coordinate Operations Purpose

- Ensure RA's operations coordinated → no adverse impact on other RA's
- Preserve the reliability benefits of interconnected operations



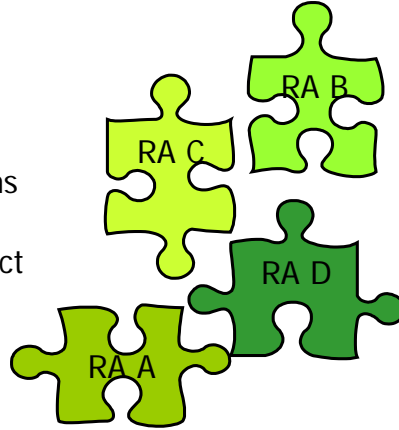
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What were we thinking?

- Other Standards Require:
 - Each RA must be Certified
 - Each RA must have procedures, processes & plans for own area
 - Each RA must monitor & direct others to protect own area

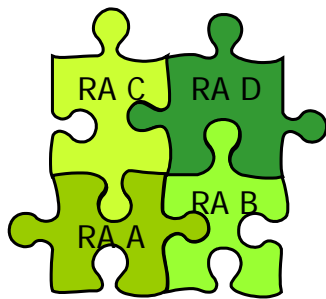


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Coordinate Operations Standard requires RAs to work together



- Agree to take actions **with other RAs** under specified conditions (documented in procedures, processes, plans)
- Exchange information **with other RAs**
- Notify **other RAs** of impactful conditions or events
- Coordinate actions **with other RAs**



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RA versus RC

- Functional Model Tech Reference:

“When the Control Area Criteria Task Force (the FMRTG’s predecessor) began developing the Functional Model in 1999, it assumed that the Reliability Authority would perform the role of the Reliability Coordinator.”

- The Coordinate Operations Standard assumes the RA displaces the RC



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Standard’s 3 Requirements

1. Develop, distribute, maintain procedures requiring notification, information exchange or coordination involving multiple RAs
2. Make notifications and exchange information with other RAs
3. Coordinate actions with other RAs



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Procedures, Processes, Plans Requirement:



- Ensure documents address all required topics
- Have latest approved version of each document available to system operators (includes those developed by other RAs)
- Have a Document Change Control Procedure
- Maintain and distribute documents according to Document Change Control Procedure
- Company-specific version of documents developed by other RAs may be developed to support (not replace) an RA to RA document but must:
 - Be available to system operators
 - Reference source document
 - Support source document



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Notifications and Information Exchange Requirement



- Follow approved procedures:
 - Notify other RAs of impactful issues
 - Participate in agreed-upon daily conference calls and other communications forums
- Provide reliability-related information upon request



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Coordination Requirement



- RA that identifies a problem notifies impacted RAs
- RAs involved agree on problem, solution, actions – document actions & notify others
- If RAs disagree – each re-evaluates conflicting information, takes action to preserve RA Area and Interconnection, documents actions & notifies others



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Compliance

- Used all 4 levels wherever possible
- **Procedures** – sanctions if the latest approved versions of all required documents weren't available for system operators real-time use
- **Notifications** – sanctions if information was not exchanged
- **Coordination** – minor sanctions for pattern of poor documentation – serious sanctions for not coordinating or for not following up when there is a conflict between system status or studies



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Send in Your Comments!



- Do you agree with the definitions and assumptions?
- Do you agree with the requirements, measures, compliance monitoring and levels of non-compliance?
- Does the standard include anything extra – is it missing anything?



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Definitions:

- **Procedure** - step by step directions for a specific operating goal
 - Alleviating high voltage on the Blackberry 230 kV tie line)
- **Process** - list of generalized steps for a generic operating goal
 - Alleviating high voltage on the 230 kV system
- **Plan** - group of activities to achieve a goal – may include procedures and processes –
 - Corporate Emergency Response Plan
- **Operating Scenario** – An operating contingency that if left untended, could have an adverse impact that extends beyond the boundaries of a single RA Area
- **Outage** – The planned or unplanned removal of equipment from service.



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- *Do you agree with these definitions?*

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Assumptions: RA Authority

- Documenting RA's authority to assist in resolving problems it caused another system addressed in RA Certification

RA Certification: Agreements must be in place defining the responsibilities and authority of the Reliability Authority with respect to all BAs, IAs, TOPs, TSPs and all other applicable functional entities within the reliability area and with other RAs. Agreements shall address both normal and emergency operations.

- *Do you agree that the RA's authority is addressed in RA Certification and does not need to be addressed again in the Coord Ops Standard?*



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Assumptions: Analyses

- IROL Standard requires analyses be conducted relative to IROLs
 - *Should Coord Ops Std include a requirement for additional analyses?*
 - *If yes, how would additional analyses be different from the System Operator's perspective?*



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Assumptions:

Outage Data

- RA Certification - Have procedures for coordinating and approving transmission outages – and for analyzing generation outages
- IROL Std - Conduct operational planning analyses with respect to IROLs (consider outages & known limitations)
- Coord Ops Standard (embedded in Procedures Requirement):
 - Have procedure for sharing outage data with other RAs
- Coord Ops Standard (embedded in Notifications Requirement):
 - Follow procedure for sharing data
- *Should sharing Outage Data be a stand-alone requirement?*



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Assumptions:

Limited to RA Coordination with other RAs

- Standard doesn't address coordination within an RA Area
- Sharing of documents limited to RAs, not all other entities
- The Coord Ops SAR DT recommended another SAR be developed to address coordination within the RA's Reliability Area. The SDT assumes coordination within the RA Area is outside the scope of this standard.
- *Do you agree with these assumptions?*



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Requirements: Procedures, Processes or Plans

The Coord Ops Standard requires the RA to have a procedure, process or plan for each of the following activities that requires notification, information exchange or coordination involving multiple RAs

- Normal and emergency system conditions
- 'Impactive' operating scenarios
- Other activities:
 - Daily communication and real-time notifications
 - Energy and capacity shortages
 - Outage information
 - System restoration
 - Voltage control
 - Information exchange to support reliability assessments



Do you agree with the scope of topics?

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Requirements: Procedures, Processes or Plans

- Other activities:
 - Daily communication and real-time notifications
 - Energy and capacity shortages
 - Outage information
 - System restoration
 - Voltage control
 - Information exchange to support reliability assessments
- *Should the Coord Ops Standard include more details on what is needed in the scope of each of these documents?*



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Requirements: Procedures, Processes or Plans

- RA shall have a Document Change Control Procedure (must address approvals, maintenance and distribution)
- *Is this requirement needed in the standard?*
- *If needed, should it include any of the following:*
 - *Review cycle – min 1/3 yrs*
 - *Methodology for distribution*
 - *Summary or identification of changes*
 - *Version control*



Requirements: Notifications & Info Exchange

- The RA shall participate in agreed upon daily conference calls and other communication forums.
- *Does this requirement need any of the following?*
 - *Require participation in conference calls with adjacent RAs? – (Some RAs have several adjacent RAs)*
 - *Identify what position can participate?*
 - *How many RAs should participate in each call (Should these be interconnection-wide?)*
 - *Should each interconnection set up a system for RA communication*
- *Do you have any ideas on how to measure compliance?*





Requirements: Coordination

- The RA that identifies a potential, expected, or actual problem that adversely impacts the reliability of one or more other RAs shall contact the other RA(s) to confirm problem & decide on solution
- If Agreement Reached:
 - All involved RAs document and take agreed-upon actions & notify impacted RAs of actions
- If Agreement Not Reached on Problem:
 - Each RA re-evaluates conflicting system status to determine which RA has correct information
- If Agreement Not Reached on Solution:
 - Each RA takes action in own RA Area to protect Interconnection



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Coord Ops Standard tries to tighten existing policy language

- **Policy 9: Special operating procedures.**

“Potential operating procedures that may be required shall be identified, including reconfiguration of the transmission system, re-dispatching of generation, or reduction or curtailment of Interchange Transactions to maintain transmission loading within acceptable limits.”



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Coord Ops Standard Procedures Requirement:

- The RA shall have a set of operating procedures processes or plans that **require RA to RA** notification, exchange of information or coordination of actions
- The RA shall have evidence that each document was **approved** by all of the RAs that must take actions as part of that document
- The RA shall have each of the latest approved version of each of these documents **available** to its system operators for real time use
- The RA shall **maintain and distribute** these documents according to its Document Change Control Procedure
- The RA shall have a document to address all required topics



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Coord Ops Standard Procedures Requirement - Required Topics

- Identified **normal and emergency system conditions** that require making notifications to other RAs, exchanging information with other RAs or the coordination of actions with other RAs.
- Identified **operating scenarios** within one RA Area that could have an **adverse impact** on another RA's Area.
- **Activities** that require notification, exchanging reliability-related information or coordinating actions between RAs:
 - **Daily communications** and **real-time notifications** (including conditions, process, data)
 - Resolution of energy and capacity **shortages**
 - Exchange of planned or unplanned **outage information**
 - **System restoration**
 - **Voltage control**
- Coordination of information exchange to support **reliability assessments**



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Related Blackout Findings:

- Need to communicate emergency conditions to neighbor systems
- Need to follow up when 2 RAs disagree on system status
- This standard **REQUIRES:**
 - **Procedure** (agreed-upon with other RAs) for making notifications
 - **Following procedure** in making notifications of anything 'impactive' to another RA's Area
 - Participation in agreed-upon **daily** calls & other forums
 - Each RA to **re-evaluate** conflicting system status or studies



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Questions?



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