

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Action Plan for Developing Risk- Informed Performance-Based Standards

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to ensure
the reliability of the
bulk power system

- Background
 - Genesis of Results-Based Standard (RBS) Initiative
 - Attributes
 - Adequate Level of Reliability
 - Types of Requirements
 - Items to Avoid
 - What RBS is not
- Accomplishments
 - Communication Plan
 - Scorecard
 - Proof of Concept
- Next Steps

Background – Genesis of RBS Initiative

- Attachment 2 of the Three-Year ERO Performance Assessment
- Comments from stakeholders
 - Focus on standards development that will lead to greatest increase in reliability
 - Focus on standards with critical impact to reliability
 - Convert non-essential requirements/standards to guidelines
 - Develop a more systematic process for prioritizing new reliability standards based on the risks to the Bulk Power System (BPS)

Background – RBS Attributes

- Ensure that NERC Reliability Standards have the greatest possible positive effect on BPS reliability
 - Achieve a portfolio of performance, risk, and competency-based requirements
 - Provide an effective defense-in-depth strategy
 - Achieve an adequate level of reliability
 - Identify a clear and measurable expected outcome
 - Structure in the form of *who, under what conditions (if any), shall perform what action, to achieve what particular result or outcome*

Background – Adequate Level of Reliability

- Each requirement should meet at least one of the following objectives:
 - The System is controlled to stay within acceptable limits during normal conditions.
 - The System performs acceptably after credible Contingencies.
 - The System limits the impact and scope of instability and cascading outages when they occur.

Background – Adequate Level of Reliability

- Each requirement should meet at least one of the following objectives:
 - The System's Facilities are protected from unacceptable damage by operating them within Facility Ratings.
 - The System's integrity can be restored promptly if it is lost.
 - The System has the ability to supply the aggregate electric power and energy requirements of the electricity consumers at all times, taking into account scheduled and reasonably expected unscheduled outages of system components.

Background –Types of Requirements

- Performance-based
 - Defined target for bulk power system performance
 - Measures
 - Periodic reporting of system data/results
 - System testing/simulation
 - Event-triggered response data/analysis

Background –Types of Requirements

- Risk-based
 - Necessary when consequences of failure or performance-based measures are too costly
 - Based on defined risk strategies and objectives
 - Measures
 - Bulk power system performance trends
 - Defined risk targets achieved
 - Performance records, logs, interviews, etc.

Background –Types of Requirements

- Competency-based
 - Defined competencies necessary to ensure reliable performance
 - Measures
 - Observe/test functionality
 - Records, logs, interviews, etc.

Background – Items to Avoid/ What RBS is Not

- Requirements/Standards to Avoid
 - Prescriptive (how to)
 - Administrative (document something)
 - Commercial (business practice)
- What we are not proposing
 - Get down to the 10 key reliability requirements
 - Reduce obligations for a reliable bulk power system
 - Water down standards to least common denominator
 - Reduce number of requirements for sake of reducing the number

- **Mission:** To inform and educate stakeholders about the results-based standards project, and promote input and participation.
- Approved by Standards Committee (SC) on January 14, 2010.
- Focus is not yet on how to draft a results-based standard

Accomplishments – Communication Plan Upcoming Activities

- Update to MRC and NERC Board
- Prepare presentation materials for industry outreach
- Conduct Webinar in March, 2010
- Individual outreach to trade associations, regional entity member forums, etc.

Accomplishments – Other Communication Activities

- Federal Energy Regulatory Commission
 - Gerry Cauley met with several Commissioners and Director, Office of Electric Reliability
- Industry Outreach
 - RBS team members positioned to discuss the initiative with many regional, trade, and other industry organizations
 - Strives to highlight this project at each possible opportunity

Accomplishments – Reliability Standards Scorecard

- Activity
 - Evaluate the existing approved requirements in the context of RBS framework
- Development
 - Full RBS Team contribution
 - Divided requirements among team members for categorization
 - Subsequent sub-team validation of initial categorizations

Accomplishments – Reliability Standards Scorecard

- **Uses**
 - Standard development prioritization tool
 - Requirement revision prioritization
 - Compliance monitoring prioritization reference tool

	A	B	C	D	E	F	G	
1	Standard	Req	Text of Requirement	This requirement is:	The reliability objective (or risk mitigation) achieved by this requirement is:	The most effective way to measure this requirement is:	The bulk power system is controlled to stay within acceptable limits during normal conditions.	The bulk power system is controlled to stay within acceptable limits during normal conditions.
	BAL-001-0.1a	R2.	Each Balancing Authority shall operate such that its average ACE for at least 90% of clock-ten-minute periods (6 non-overlapping periods per hour) during a calendar month is within a specific limit, referred to as L10. See Standard for Formula.	Performance-based (specifies a bulk power system outcome).	A bulk power system result that is clear in the requirement.	Evaluating bulk power system performance, data, or results.	YES	YES
4	BAL-001-0.1a	R3.	Each Balancing Authority providing Overlap Regulation Service shall evaluate Requirement R1 (i.e., Control Performance Standard 1 or CPS1) and Requirement R2 (i.e., Control Performance Standard 2 or CPS2) using the characteristics of the combined ACE and combined Frequency Bias Settings.	Performance-based (specifies a bulk power system outcome).	A bulk power system result that is clear in the requirement.	Evaluating performance of an activity or a record/log of that activity.		
5	BAL-001-0.1a	R4.	Any Balancing Authority receiving Overlap Regulation Service shall not have its control performance evaluated (i.e. from a control performance perspective, the Balancing Authority has shifted all control requirements to the Balancing Authority providing Overlap Regulation Service).	Administrative (requires only documenting/reporting something).	No reliability benefit is provided by the requirement.	Can only be measured through documentation.		
6	BAL-002-0	R1.	Each Balancing Authority shall have access to and/or operate Contingency Reserve to respond to Disturbances. Contingency Reserve may be supplied from generation, controllable load resources, or coordinated adjustments to Interchange Schedules.	Capability-based (provides necessary capability).	A risk mitigation objective that is clear in the requirement.	Evaluating capabilities, such as tools, systems, training records, etc.		YES
			A Balancing Authority may elect to fulfill its Contingency Reserve obligations by participating as a member of a Reserve Sharing Group. In such cases, the	Capability-based (provides necessary				

Accomplishments – Proof of Concept

- SC approved FAC-003 – Transmission Vegetation Management for proof of concept
 - Technical development largely completed
- Hired Ivy Hooks, Compliance Automation, Inc. to provide hands-on team support
 - Lengthy experience with NASA
 - Educate team on RBS approach
 - Re-write FAC-003 to be results-based

Accomplishments – Proof of Concept

- Key drafting team discussion
 - Results-based requirements – why they matter
 - Basic, proven approaches to ensure results-based requirements
 - Suggestions for getting to result-based requirements
 - Examples of rewrites of existing requirements
 - Practice in restating requirements and measures to be results-oriented.

Accomplishments – Proof of Concept

- Drafting team applied RBS criteria during small group exercises
- Completed a expedited rewrite of FAC-003-2
 - Team meets this week to finalize draft

Accomplishments – Proof of Concept

- Drafting team reaction
 - Supportive of approach
 - Cautiously optimistic
 - Greater clarity
 - Fewer administrative requirements
 - Retained the significant technical foundation
- SC approved use of informal comment period
- Completed ballot targeted for August, 2010

- Implement communication plan
 - Inform on proof of concept — FAC-003-2
 - Content and format changes
 - Development process modifications
 - Coordinate with regulatory authorities to promote value of results-based approach
- Finalize proof of concept
 - Determine proposed format of standard
 - Complete development and ballot by August, 2010

- Prioritize development of results-based standards
 - Identify additional projects for near-term development
 - Develop and integrate schedule into three-year development plan

- Train drafting teams in the development of results-based standards
 - Execute contract for development of tailored training program
 - Develop an orientation and training program for NERC staff and drafting teams on applying the results-based methodology
 - Identify next project for application of RBS to use as test case for training
 - Develop templates and other job aids to assist in constructing results-based standards
 - Perpetuate model using “train-the-trainer” mode



Question & Answer