

Consideration of Comments on 2nd Draft of SAR for Real-time Reliability Monitoring and Analysis Capabilities (Project 2009-02)

The Real-time Reliability Monitoring Analysis Capabilities SAR Drafting Team thanks all commenters who submitted comments on the 2nd draft of the standards for Real-time Reliability Monitoring and Analysis Capabilities (Project 2009-02). These standards were posted for a 30-day public comment period from January 19, 2010 through February 18, 2010. The stakeholders were asked to provide feedback on the standards through a special Electronic Comment Form. There were 30 sets of comments, including comments from more than 80 different people from over 40 companies representing 8 of the 10 Industry Segments as shown in the table on the following pages.

http://www.nerc.com/filez/standards/Project2009-02_Real-Time_Monitoring_Analysis_Capabilities.html

The SAR DT has made a few clarifying changes to the text of the SAR in response to industry comments and now feels that the project is ready for approval by the Standards Committee to move forward to the standards development stage.

Several entities indicated that the proposed project does not support the “results-based” approach to developing standards and the SAR DT disagrees. The report generated by the Results-based Ad Hoc Team includes the following description of the types of requirements recommended for results-based standards:

To achieve an adequate level of reliability, the team recommended a blended approach be used comprising of three types of requirements:

Performance-based — defines a particular reliability objective or outcome to be achieved. In its simplest form, a performance-based standard has four components: *who, under what conditions (if any), shall perform what action, to achieve what particular result or outcome?*

Risk-based — preventive requirements to reduce the risks of failure to acceptable levels. A risk-based reliability standard should be framed as: *who, under what conditions (if any), shall perform what action, to achieve what particular result or outcome that reduces a stated risk to the reliability of the bulk power system?*

Competency-based — defines a minimum set of capabilities an entity needs to have to demonstrate it is able to perform its designated reliability functions.

The proposed requirements are “Competency-based” as they define a set of capabilities needed to support reliable operations.

Some stakeholders are still stating that the items cited in the SAR should be part of a revised certification process accompanied by a new re-certification process. The SAR DT has no control over the certification/re-certification process and is working under the existing rules and procedures to fill a reliability gap.

Several comments were raised on the applicability of the Generator Operator. The Generator Operator is included here because it owns reliability data that is essential to the Transmission Operators and Balancing Authorities and the quality of that data is of concern. The focus on capabilities is different for the various reliability entities and the eventual SDT will need to define that focus. The SAR DT continues to believe that the eventual SDT needs to have the flexibility to include or not include the Generator Operator.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

¹ The appeals process is in the Reliability Standards Development Procedures:
<http://www.nerc.com/standards/newstandardsprocess.html>.

Index to Questions, Comments, and Responses

1. The Real-time Reliability Monitoring and Analysis Capabilities SAR DT has attempted to clarify the wording of the SAR to show that this SAR is focused on functionality and not on specific tools. In other words, this SAR addresses 'what' vs. 'how'. Do you agree that the revised SAR adequately allays industry concerns on being too prescriptive as to how the functionality will be addressed? If not, please provide recommended wording changes. 9
2. In the first set of questions, several entities suggested that this functionality should and could be handled through certification. The SAR DT has researched the issue and has compiled the following information: 21
3. The approach taken by the Standards Development Program is not to write new requirements that assess basic capabilities used to achieve performance measured through other requirements within the Reliability Standards. The SAR DT has researched the standards and concluded that other requirements do not presently exist to adequately cover the issues raised in the SAR. Do you agree with this position? If not, please identify existing standard requirements that would apply and explain how these requirements accomplish the goals of the proposed SAR (including the Order 693 directives). 28
4. Does the revised Detailed Description of the SAR provide sufficient details for the eventual Standard Drafting Team to execute the SAR? If not, please identify areas of insufficient detail and provide suggested wording for increased clarity..... 36

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The Industry Segments are:

- 1 — Transmission Owners
- 2 — RTOs, ISOs
- 3 — Load-serving Entities
- 4 — Transmission-dependent Utilities
- 5 — Electric Generators
- 6 — Electricity Brokers, Aggregators, and Marketers
- 7 — Large Electricity End Users
- 8 — Small Electricity End Users
- 9 — Federal, State, Provincial Regulatory or other Government Entities
- 10 — Regional Reliability Organizations, Regional Entities

		Commenter	Organization	Industry Segment											
				1	2	3	4	5	6	7	8	9	10		
1.	Group	Guy Zito	Northeast Power Coordinating Council												X
Additional Member		Additional Organization		Region		Segment Selection									
1.	Alan Adamson	New York State Reliability Council, LLC		NPCC		10									
2.	Gregory Campoli	New York Independent System Operator		NPCC		2									
3.	Roger Champagne	Hdro-Quebec TransEnergie		NPCC		2									
4.	Kurtis Chong	Independent Electricity System Operator		NPCC		2									
5.	Sylvain Clermont	Hydro-Quebec TransEnergie		NPCC		1									
6.	Chris de Graffenried	Consolidated Edison Co. of New York, Inc.		NPCC		1									
7.	Brian D. Evans-Mongeon	Utility Services		NPCC		8									
8.	Mike Garton	Dominion Resources Services, Inc.		NPCC		5									
9.	Brian L. Gooder	Ontario Power Generation Incorporated		NPCC		5									
10.	Kathleen Goodman	ISO - New England		NPCC		2									
11.	David Kiguel	Hydro One Networks Inc.		NPCC		1									
12.	Michael R. Lombardi	Northeast Utilities		NPCC		1									
13.	Randy MacDonald	New Brunswick System Operator		NPCC		2									
14.	Greg Mason	Dynergy Generation		NPCC		5									

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	Commenter	Organization	Industry Segment											
			1	2	3	4	5	6	7	8	9	10		
15.	Bruce Metruck	New York Power Authority	NPCC						6					
16.	Chris Orzel	FPL Energy/NextEra Energy	NPCC						5					
17.	Robert Pellegrini	The United Illuminating Company	NPCC						1					
18.	Saurabh Saksena	National Grid	NPCC						1					
19.	Michael Schiavone	National Grid	NPCC						1					
20.	Peter Yost	Consolidated Edison Co. of New York, Inc.	NPCC						3					
21.	Gerry Dunbar	Northeast Power Coordinating Council	NPCC						10					
22.	Lee Pedowicz	Northeast Power Coordinating Council	NPCC						10					
2.	Group	Jim Case	SERC OC Standards Review Group	X		X								
		Additional Member	Additional Organization	Region				Segment Selection						
1.	Chad Randall	E.ON.US							1, 3, 5					
2.	Gerald Beckerle	Ameren							1, 3					
3.	Randy Castello	Mississippi Power							1, 3, 5					
4.	Robert Thomasson	Big Rivers							1, 3, 5, 9					
5.	John Troha	SERC							10					
3.	Group	Carol Gerou	NERC Standards Review Subcommittee											X
		Additional Member	Additional Organization	Region				Segment Selection						
1.	Chuck Lawrence	American Transmission Company	MRO						1					
2.	Tom Webb	WPS Corporation	MRO						3, 4, 5, 6					
3.	Terry Bilke	Midwest ISO Inc.	MRO						2					
4.	Jodi Jenson	Western Area Power Administration	MRO						1, 6					
5.	Ken Goldsmith	Alliant Energy	MRO						4					
6.	Dave Rudolph	Basin Electric Power Cooperative	MRO						1, 3, 5, 6					
7.	Eric Ruskamp	Lincoln Electric System	MRO						1, 3, 5, 6					
8.	Joseph Knight	Great River Energy	MRO						1, 3, 5, 6					
9.	Joe DePoorter	Madison Gas & Electric	MRO						3, 4, 5, 6					
10.	Scott Nickels	Rochester Public Utilities	MRO						4					

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	Commenter	Organization	Industry Segment											
			1	2	3	4	5	6	7	8	9	10		
11.	Terry Harbour	MidAmerican Energy Company	MRO							1, 3, 5, 6				
4.	Group	Louis Slade	Dominion	X		X		X	X					
Additional Member		Additional Organization		Region			Segment Selection							
1. Jalal Babik		RFC					3, 5, 6							
2. Mike Garton		MRO					3, 5, 6							
5.	Group	Sam Ciccone	FirstEnergy	X		X	X	X	X					
Additional Member		Additional Organization		Region			Segment Selection							
1. Dave Folk		FE		RFC			1, 3, 4, 5, 6							
2. Doug Hohlbaugh		FE		RFC			1, 3, 4, 5, 6							
6.	Group	Linda Perez	Western Electricity Coordinating Council											X
Additional Member		Additional Organization		Region			Segment Selection							
1. Steve Rueckert		WECC		WECC			10							
7.	Group	Denise Koehn	Bonneville Power Administration	X		X		X	X					
Additional Member		Additional Organization		Region			Segment Selection							
1. Jim Burns		Transmission Technical Operations		WECC			1							
8.	Group	Kenneth D. Brown	Public Service Enterprise Group Companies	X		X		X	X					
Additional Member		Additional Organization		Region			Segment Selection							
1. Jeff Mueller		PSE&G		RFC			1, 3							
2. Ken Petroff		PSEG Nuclear		RFC			5							
3. Jim Hebson		PSEG ER&T		ERCOT			5, 6							
4. Dave Murray		PSEG Connecticut		NPCC			5							
9.	Group	Ben Li	IRC Standards Review Committee		X									
Additional Member		Additional Organization		Region			Segment Selection							
1. Patrick Brown		PJM		RFC			2							

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		Commenter	Organization	Industry Segment											
				1	2	3	4	5	6	7	8	9	10		
2.		Charles Yeung	SPP	SPP					2						
3.		James Castle	NYISO	NPCC					2						
4.		Mark Thompson	AESO	WECC					2						
5.		Matt Goldberg	ISO-NE	NPCC					2						
6.		Lourdes Estrada-Saliner	CAISO	WECC					2						
7.		Steve Myers	ERCOT	ERCOT					2						
10.	Individual	Scott Vidler	Hydro One Networks Inc.	X											
11.	Individual	Sandra Shaffer	PacifiCorp	X		X		X	X						
12.	Individual	James Vermillion	AECI System Operations	X		X		X							
13.	Individual	Brent Ingerigton	E.ON U.S.	X		X		X	X						
14.	Individual	Martin Bauer	US Bureau of Reclamation					X							
15.	Individual	Jon Kapitz	Xcel Energy	X		X		X	X						
16.	Individual	Kasia Mihalchuk	Manitoba Hydro	X		X		X	X						
17.	Individual	Greg Rowland	Duke Energy	X		X		X	X						
18.	Individual	Chris Scanlon	Exelon	X		X		X	X						
19.	Individual	Kathleen Goodman	ISO New England Inc		X										
20.	Individual	Roger Champagne	Hydro-Québec TransEnergie (HQT)	X											
21.	Individual	James H. Sorrels, Jr.	American Electric Power	X		X		X	X						
22.	Individual	Jason L. Marshall	Midwest ISO		X										

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				1	2	3	4	5	6	7	8	9	10	
23.	Individual	Mark Ringhausen	ODEC			X	X	X						
24.	Individual	James Sharpe	South Carolina Electric and Gas	X		X		X	X					
25.	Individual	Jeff Hackman	Ameren	X										
26.	Individual	Jason Shaver	American Transmission Company	X										
27.	Individual	Richard Kafka	Pepco Holdings, Inc.	X		X		X	X					
28.	Individual	Edward Davis	Entergy Services	X		X		X	X					
29.	Individual	Wayne Pourciau	Georgia System Operations Corporation			X	X							
30.	Individual	Dan Rochester	Independent Electricity System Operator		X									

- 1. The Real-time Reliability Monitoring and Analysis Capabilities SAR DT has attempted to clarify the wording of the SAR to show that this SAR is focused on functionality and not on specific tools. In other words, this SAR addresses 'what' vs. 'how'. Do you agree that the revised SAR adequately allays industry concerns on being too prescriptive as to how the functionality will be addressed? If not, please provide recommended wording changes.**

Summary Consideration: A majority of the commenters agree with the SAR DT's approach.

The SAR DT has made slight clarifying changes to the Purpose statement and the Detailed Description based on industry comments.

There were several commenters who are still expressing the opinion that certification/re-certification is the correct method to use. The SAR DT has no control over the certification/re-certification process and is working under the existing rules and procedures to fill a reliability gap.

The SAR DT does not see any point of conflict between the proposed results-based reliability standards effort and the proposed content of any eventual standard(s) or changes to existing standard(s) that this SAR might generate. Indeed, the SAR DT believes that the SAR directly addresses the competency element of the proposed results-based reliability standard effort.

Several comments were raised on the applicability of the Generator Operator. The Generator Operator is included here because it owns reliability data that is essential to the Transmission Operators and Balancing Authorities and the quality of that data is of concern. The focus on capabilities is different for the various reliability entities and the eventual SDT will need to define that focus. The SAR DT continues to believe that the eventual SDT needs to have the flexibility to include or not include the Generator Operator.

Purpose statement: The new or revised standard(s) will establish requirements for the functionality, performance, and maintenance of Real-time Monitoring and Analysis capabilities for Reliability Coordinators, Transmission Operators, Generator Operators, and Balancing Authorities for use by their System Operators in support of reliable System operations.

Detailed description: Develop or revise standard(s) to describe the capability characteristics, such as availability parameters, performance metrics, failure notification, and maintenance (vetted by the industry through the Reliability Standards comment process) of functionality for:

- Monitoring power System data in Real-time.
- Exchanging power System data in Real-time.
- Alerting System Operators in Real-time to events and conditions affecting the state of the Bulk Electric System (BES). This functionality shall include an independent process monitor.
- Determining the current state of the BES.

- Evaluating the impact of ‘what if’ events on the current state of the BES.

Organization	Yes or No	Question 1 Comment
Manitoba Hydro		<p>Changing the proposed Standard Title to Real-time Reliability Monitoring and Analysis Capabilities from Real-time Tools does capture the context of the Standard better, but the SAR’s purpose still does not shed enough light on what the SAR is trying to accomplish.</p> <p>Suggested change to Purpose: The new or revised standard(s) will establish the minimum (see note 1) requirements for the real time monitoring (see note 2), analysis (see note 3) and their procedural administration (see note 4) on the Interconnected Bulk Electric System for Reliability Coordinators, Transmission Operators, Generator Operators, and Balancing Authorities for use by their System Operators in support of reliable System operations.</p> <p>Suggested change to Brief Description: The scope of the SAR is to establish the minimum requirements for alarming and telemetry and the administration procedures of System Analysis provided to System Operators and used to support Real-time System Operations. The SAR addresses availability parameters, performance studies (see note 5), and procedures for failure notification, maintenance coordination, and procedural changes. The intent is to describe ‘what’ needs to be done but not ‘how’ to do it.</p> <p>Using the statement “minimum requirements’ should alleviate industry concerns about this requirement being too prescriptive and the statement makes the SAR more coincident with FERC Order 693 directive.</p> <p>NOTES</p> <ol style="list-style-type: none"> 1. Minimum - this word is used to more closely comply with FERC order 693, paragraph 905. Also inserting “minimum” doesn’t imply major change. 2. Real Time Monitoring - details specific function, whereas “functionally” is vague and open to interpretation. 3. Analysis - Another specific function is detailed, whereas “functionally” is vague and open to interpretation. 4. Procedural Administration - more clearly indicates that monitoring and analysis polices will be detailed in the SAR as opposed to “Change Management”. 5. Metrics - prefer studies. Using the statement “minimum requirements’ should alleviate industry concerns about this requirement being too prescriptive and the statement makes the SAR coincident with FERC Order 693 directive.
<p>Response: The SAR DT has made a change to the Purpose statement based on your comment and those of others but does not believe that a change to</p>		

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Organization	Yes or No	Question 1 Comment
		<p>'procedural administration' is the right phrasing or in line with the new results-based standards effort. 'Minimum' was not utilized as it is often interpreted to mean a least common denominator approach. The SAR DT has deleted 'change management' as suggested and replaced it with 'maintenance' which is what the intent of the statement was.</p> <p>Purpose statement: The new or revised standard(s) will establish requirements for the functionality, performance, and maintenance of Real-time Monitoring and Analysis capabilities for Reliability Coordinators, Transmission Operators, Generator Operators, and Balancing Authorities for use by their System Operators in support of reliable System operations.</p> <p>The SAR DT believes that 'monitoring and analysis' is more appropriate for the SAR as opposed to 'alarming and telemetry'. The SAR DT does not believe that 'administration procedures' or 'procedural changes' is the right phrasing or in line with the new results-based standards effort. 'Minimum' was not utilized as it implies a least common denominator approach which is not allowed. The SAR DT believes that 'metrics' is the correct terminology and in line with results-based standards. No change made.</p>
Dominion	No	<p>Despite SDTs response to comments concerning inclusion of Generator Operator, we remain unconvinced of the need to add this entity. In the Industry Need section the SDT cites the following, none of which indicates a need to include Generator Operators; Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations FERC Order 693 - paragraphs 905, 906 & 1660</p>
		<p>Response: The Generator Operator is included here because it owns reliability data that is essential to the Transmission Operators and Balancing Authorities and the quality of that data is of concern. The focus on capabilities is different for the various reliability entities and the eventual SDT will need to define that focus. For example, the Generator Operator would not be expected to perform network analysis. The SAR DT continues to believe that the eventual SDT needs to have the flexibility to include or not include the Generator Operator. No change made.</p>
Georgia System Operations Corporation	No	<p>The change in words and the explanation given does not change what this is. This is a project to develop additional mandatory requirements for entities to follow when there are already many existing requirements.</p> <p>There should be a separate certification process for obtaining and maintaining certification. This process should include capability requirements. Spending industry resource time on this capability SAR at this time takes away resources from the most important NERC project, the project to revise the entire set of standards to result in only the necessary risk-informed, performance-based requirements. Requiring specific capability is not prescribing what tool to use to achieve the capability. However, it is prescribing what capabilities to have and what performance, availability, and maintenance requirements to follow for these capabilities. That is still being prescriptive. A Reliability Standard requirement should be a requirement to provide for reliable operation of the bulk-power system including requirements for the operation of existing bulk-power system facilities and the design of planned additions or modifications to such facilities to the extent necessary to provide for reliable operation of the bulk-power system. It should not be a requirement to provide for reliable operation, functionality, performance, availability, and maintenance of a capability (a tool) used for reliable</p>

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Organization	Yes or No	Question 1 Comment
		<p>operation of the bulk-power system and facilities.</p> <p>The industry and the tool vendors should determine what tools and functionality are needed to provide for reliable operation of the bulk-power system in terms of their own system and the scope of their responsibilities and what is needed for reliable tools operation and maintenance. Capability requirements should not be in a mandatory reliability standard.</p> <p>The project to determine risk-informed, performance-based requirements should not include requirements for capabilities.</p> <p>See the response to no. 2 regarding a certification process.</p>
<p>Response: The existing certification process (which is standard-driven) or any future re-certification effort is outside the scope of the SAR DT. The SAR DT can only react to the certification/re-certification issue as it exists today. The SAR DT believes that this indicates that a standard(s) or changes to existing standard(s) is required to achieve desired reliability objectives. No change made.</p> <p>This SAR does not prevent an entity or its vendor from selecting a particular tool to use to provide the necessary capabilities. No change made.</p> <p>The SAR DT does not see any point of conflict between the proposed results-based reliability standards effort and the proposed content of any eventual standard(s) or changes to existing standard(s) that this SAR might generate. Indeed, the SAR DT believes that the SAR directly addresses the competency element of the proposed results-based reliability standard effort. No change made.</p> <p>Please see response to #2.</p>		
Hydro-Québec TransEnergie (HQT)	No	<p>The current draft of the SAR indicates the applicability to be intended to extend to RCs, BAs, TOPs, and GOPs. It also indicates the industry need was identified through the August 14 Blackout report and references FERC Order 693. This is misleading, because:</p> <ol style="list-style-type: none"> 1) The “tools” issues related to the August 14 Blackout were restricted to the TOP and RC functions and there was no indication that the BA or GOP tools were lacking in any respect. 2) FERC Order 693 stipulated (a) “ERO to modify IRO-002-1 to require a minimum set of tools that must be made available to the reliability coordinator” and “The Commission approves TOP-006-1 as mandatory and enforceable. <p>In addition, the Commission directs the ERO to develop modifications to TOP-006-1 through the Reliability Standards development process, as discussed below.” As referenced in the “Related Standards” section, this endeavor is best suited under the responsibility of existing drafting teams working on the RC and TOP Standards sets.</p> <p>Or, in the alternative, as was commented in the first round of posting, these could be easily addressed</p>

Organization	Yes or No	Question 1 Comment
		<p>through the Certification Process of the RC and TOP.</p> <p>We do not believe there is an industry need for this project and, to the contrary, would create re-work in the TOP and IRO Standards that are currently in-process. We must work diligently as an industry to eliminate such inefficiencies in the Process. The NERC BOT recently approved pursuing the Results/Performance Based standards development activity. Based on this recent decision, we believe the BOT has signaled their intent to move any from Standards and Requirements that dictate “capabilities” (as proposed) and focus on “outcome.”</p>
ISO New England Inc	No	<p>The current draft of the SAR indicates the applicability to be intended to extend to RCs, BAs, TOPs, and GOPs. It also indicates the industry need was identified through the August 14 Blackout report and references FERC Order 693. This is misleading, because:</p> <p>1) The “tools” issues related to the August 14 Blackout were restricted to the TOP and RC functions and there was no indication that the BA or GOP tools were lacking in any respect.</p> <p>2) FERC Order 693 stipulated (a) “ERO to modify IRO-002-1 to require a minimum set of tools that must be made available to the reliability coordinator” and “The Commission approves TOP-006-1 as mandatory and enforceable.</p> <p>In addition, the Commission directs the ERO to develop modifications to TOP-006-1 through the Reliability Standards development process, as discussed below.” As referenced in the “Related Standards” section, this endeavor is best suited under the responsibility of existing drafting teams working on the RC and TOP Standards sets.</p> <p>Or, in the alternative, as was commented in the first round of posting, these could be easily addressed through the Certification Process of the RC and TOP.</p> <p>We do not believe there is an industry need for this project and, to the contrary, would create re-work in the TOP and IRO Standards that are currently in-process. We must work diligently as an industry to eliminate such inefficiencies in the Process. Of final note, the NERC BOT recently approved the pursuing the Results/Performance Based standards development activity. Based on this recent decision, we believe the BOT has signaled their intent to move any from Standards and Requirements that dictate “capabilities” (as proposed) and focus on “outcome.”</p>
Northeast Power Coordinating Council	No	<p>The current draft of the SAR indicates the applicability to be intended to extend to RCs, BAs, TOPs, and GOPs. It also indicates the industry need was identified through the August 14 Blackout report and references FERC Order 693. This is misleading because:</p> <p>1) The “tools” issues related to the August 14 Blackout were restricted to the TOP and RC functions and there</p>

Organization	Yes or No	Question 1 Comment
		<p>was no indication that the BA or GOP tools were lacking in any respect.</p> <p>2) FERC Order 693 stipulated (a) “ERO to modify IRO-002-1 to require a minimum set of tools that must be made available to the reliability coordinator” and “The Commission approves TOP-006-1 as mandatory and enforceable.</p> <p>In addition, the Commission directs the ERO to develop modifications to TOP-006-1 through the Reliability Standards development process, as discussed below.” As referenced in the “Related Standards” section, this endeavor is best suited under the responsibility of existing drafting teams working on the RC and TOP Standards sets.</p> <p>Or, in the alternative, as was commented in the first round of posting, these could be easily addressed through the Certification Process of the RC and TOP.</p> <p>There isn't an industry need for this project, and would create re-work in the TOP and IRO Standards that are currently in-process. The industry must work diligently to eliminate such inefficiencies in the Process.</p> <p>The NERC BOT recently approved pursuing the Results/Performance Based standards development activity. Based on this recent decision, the BOT has signaled its intention to move any items from Standards and Requirements that dictate “capabilities” (as proposed), and focus on “outcome.”</p>
<p>Response: Recommendation 22 of the Blackout Report specifically cited the Reliability Coordinator and operators. The use of the term operators brings in the other entities cited in the SAR. No change made.</p> <p>As pointed out in the first posting comment response, the SDTs working on the revisions of the IRO (Project 2006-06) & TOP (Project 2007-03) standards disagree with your position as stated in the most recent project implementation plans. They have passed on the capability related requirements to this SAR DT. No change made.</p> <p>The existing certification process (which is standard-driven) or any future re-certification effort is outside the scope of the SAR DT. The SAR DT can only react to the certification/re-certification issue as it exists today. The SAR DT believes that this indicates that a standard(s) or changes to existing standard(s) is required to achieve desired reliability objectives. No change made.</p> <p>The SAR DT does not see any point of conflict between the proposed results-based reliability standards effort and the proposed content of any eventual standard(s) or changes to existing standard(s) that this SAR might generate. Indeed, the SAR DT believes that the SAR directly addresses the competency element of the proposed results-based reliability standard effort. No change made.</p>		
IRC Standards Review Committee	No	<p>The SAR indicates the applicability to be extended to RCs, BAs, TOPs, and GOPs. It also indicates the industry need was identified through the August 14 Blackout report and references FERC Order 693. This is misleading, because:</p> <p>1) The “tools” issues related to the August 14 Blackout were restricted to the TOP and RC functions and there</p>

Organization	Yes or No	Question 1 Comment
		<p>was no indication that the BA or GOP tools were lacking in any respect.</p> <p>2) FERC Order 693 stipulated (a) “ERO to modify IRO-002-1 to require a minimum set of tools that must be made available to the reliability coordinator” and “The Commission approves TOP-006-1 as mandatory and enforceable.</p> <p>In addition, the Commission directs the ERO to develop modifications to TOP-006-1 through the Reliability Standards development process, as discussed below.” As referenced in the “Related Standards” section, this endeavor is best suited under the responsibility of existing drafting teams working on the RC and TOP Standards sets.</p> <p>Or, in the alternative, as was commented in the first round of posting, these could be easily addressed through the Certification Process of the RC and TOP.</p> <p>We believe there is an industry need for this project but the project should involve revising the TOP and IRO Standards that are currently in-process, or better still, adding the necessary requirements to the Organization Certification Requirements for these entities. If the industry should support the need to develop similar capability requirements for the Balancing Authority, where justified, then we would suggest that such requirements be added to the Organization Certification Requirements for the BA as well.</p> <p>We do not believe the GOP needs to acquire similar capabilities in view of its scope of operation which we believe falls outside of the intent of the FERC Order.</p>
<p>Response: Recommendation 22 of the Blackout Report specifically cited the Reliability Coordinator and operators. The use of the term operators brings in the other entities cited in the SAR. No change made.</p> <p>As pointed out in the first posting comment response, the SDT’s working on the revisions of the IRO (Project 2006-06) & TOP (Project 2007-03) standards disagree with your position as stated in the most recent project implementation plans. They have passed on the capability related requirements to this SAR DT. No change made.</p> <p>The existing certification process (which is standard-driven) or any future re-certification effort is outside the scope of the SAR DT. The SAR DT can only react to the certification/re-certification issue as it exists today. The SAR DT believes that this indicates that a standard(s) or changes to existing standard(s) is required to achieve desired reliability objectives. No change made.</p> <p>The Generator Operator is included here because it owns reliability data that is essential to the Transmission Operators and Balancing Authorities and the quality of that data is of concern. The focus on capabilities is different for the various reliability entities and the eventual SDT will need to define that focus. For example, the Generator Operator would not be expected to perform network analysis. The SAR DT continues to believe that the eventual SDT needs to have the flexibility to include or not include the Generator Operator. No change made.</p>		
Midwest ISO	No	The Midwest ISO believes that a basic set of tools should be prescribed in the Reliability Standards for

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Organization	Yes or No	Question 1 Comment
		Reliability Coordinators.
<p>Response: FERC Order 693 specifically cites minimum capabilities for Reliability Coordinators in paragraph 1660 as opposed to a set of tools. The SAR DT agrees with the position espoused in Order 693 and has emphasized functionality accordingly. No change made.</p>		
US Bureau of Reclamation	No	<p>The purpose of the SAR was to implement the issues not covered by Projects 2006-02 and 2007-03, namely the FERC Order 693 directive pertaining to IRO-002 and TOP-006.</p> <p>That being said the Commission clearly indicated that the standards need to be modified to require a “minimum set of tools that must be available to the reliability coordinator” to perform its functions. The SAR should be very clear on that point to avoid unnecessary complexity. Furthermore the Commission ordered that a provision was needed for minimum set of analytic tools [minimum capabilities] “that are necessary to enable operators to deal with real-time situations...” This was further clarified as “(1) includes a new requirement related to the provision of minimum capabilities that are necessary to enable operators to deal with real-time situations and to ensure reliable operation of the Bulk-Power System and (2) clarifies the meaning of “appropriate technical information” concerning protective relays.” The language of the SAR needs to include this specific guidance.</p>
<p>Response: The SAR DT does not agree with the commenter’s statement on the Purpose of the SAR. The Purpose as stated in the SAR goes beyond that stated by the commenter by describing what the standard action will achieve in support of bulk power system reliability: “The new or revised standard(s) will establish requirements for the functionality, performance, and change management of Real-time capabilities for Reliability Coordinators, Transmission Operators, Generator Operators, and Balancing Authorities for use by their System Operators in support of reliable System operations.” No change made.</p> <p>FERC Order 693 specifically cites minimum capabilities in paragraph 1660 as opposed to a set of tools. The SAR DT agrees with the position espoused in Order 693 and has emphasized functionality accordingly. No change made.</p> <p>“Appropriate technical information” for protective relays is a FERC comment on TOP-006 and is not pertinent to this SAR. No change made.</p>		
Pepco Holdings, Inc.	No	<p>The SAR proposes to address an area that is already covered by the standards themselves. Current NERC standards mandate performance compliance. There is no need to create a standard to also mandate how to achieve that level of performance.</p> <p>Further the GOP should not be considered as an applicable entity because the GOP has no monitoring or analysis obligations.</p>
<p>Response: The SAR DT believes that the current standards do not address all levels of needed performance hence the effort to fill a reliability gap with this SAR. The SAR addresses items not presently covered in any existing or proposed reliability standard. The SAR DT envisions that standards developed or revised as a result of this SAR will address reliability gaps in terms of performance, risk, and competency. No change made.</p>		

Consideration of Comments on SAR — Project 2009-02

Organization	Yes or No	Question 1 Comment
<p>The Generator Operator is included here because it owns reliability data that is essential to the Transmission Operators and Balancing Authorities and the quality of that data is of concern. The focus on capabilities is different for the various reliability entities and the eventual SDT will need to define that focus. For example, the Generator Operator would not be expected to perform network analysis. The SAR DT continues to believe that the eventual SDT needs to have the flexibility to include or not include the Generator Operator. No change made.</p>		
Public Service Enterprise Group Companies	No	The SAR should be further clarified to specify that the standard should provide performance standards rather than tools themselves. The SAR language still contains elements of "how," such as specifying audio and visual signals.
<p>Response: The SAR DT has changed the wording in the 3rd bullet of the Detailed Description to accommodate your concerns.</p> <p>Detailed description: Develop or revise standard(s) to describe the capability characteristics, such as availability parameters, performance metrics, failure notification, and maintenance (vetted by the industry through the Reliability Standards comment process) of functionality for:</p> <ul style="list-style-type: none"> • Monitoring power System data in Real-time. • Exchanging power System data in Real-time. • Alerting System Operators in Real-time to events and conditions affecting the state of the Bulk Electric System (BES). This functionality shall include an independent process monitor. • Determining the current state of the BES. • Evaluating the impact of 'what if' events on the current state of the BES. 		
ODEC	No	While better, more focus on performance based requirements needs to be included in the standard.
<p>Response: This is a SAR and not a standard. There are no requirements at this point in time, just a reference for the future SDT. If this SAR is approved by the Standards Committee, it would move forward as a results-based standards effort. No change made.</p>		
Ameren	No	While the new language partially allays the concern, it still does not differentiate that these capabilities are a collection of defense-in-depth capabilities and that no one capability is critical to BES reliability.
<p>Response: This SAR deals with capabilities and concepts and does not attempt to define criticality. No change made.</p>		
FirstEnergy	No	While we agree the SAR DT has improved the SAR, we suggest further improvement by revising the purpose statement (Pg. 2) as follows to ensure the scope is limited to aspects related to the reliability of the BES: "The new or revised standard(s) will establish requirements for the functionality, performance, and change management of Real-time Monitoring and Analysis capabilities for Reliability Coordinators, Transmission

Organization	Yes or No	Question 1 Comment
		<p>Operators, Generator Operators, and Balancing Authorities for use by their System Operators in support of reliable Bulk Electric System operation.</p> <p>"In addition, the following bullet points under the detailed description (Pg. 3) should be revised as follows to ensure proper focus of the standard.</p> <ul style="list-style-type: none"> o Monitoring Bulk Electric System reliability-related data in Real-time. o Exchanging Bulk Electric System reliability-related data in Real-time.
<p>Response: The SAR DT has added the suggested wording to the Purpose statement as it lines up the purpose of the SAR with the name of the project.</p> <p>Purpose statement: The new or revised standard(s) will establish requirements for the functionality, performance, and maintenance of Real-time Monitoring and Analysis capabilities for Reliability Coordinators, Transmission Operators, Generator Operators, and Balancing Authorities for use by their System Operators in support of reliable System operations.</p> <p>The SAR DT believes that the bullets need to be read in context with the lead-in paragraph. Once that is done, the changes suggested are not necessary as it should be clear that the SAR is not citing what data needs to be supplied but the performance characteristics of the functions employed. No change made.</p>		
Bonneville Power Administration	Yes	<p>Additional Comments: Would be helpful if Directives were put into the Reference information.</p> <p>BPA supports having watchdog timers.</p> <p>BPA is uncertain about what wide area (Situational Awareness) is common to all TOP/BA that would be acceptable to all auditors.</p> <p>BPA would like clarity regarding what "procedure for failure notification" means (report to RC if link is down between TOP and RC or between station RTU and TOP ???)</p> <p>It appears that this SAR will add more documentation requirements.</p>
<p>Response: The SAR DT has included the paragraph numbers of the pertinent paragraphs in Order 693 and feels that this is sufficient as no other commenters have cited this as a problem. No change made.</p> <p>The SAR DT thanks you for your comment, however several entities objected to use of the term "watchdog" and this was removed from the revised SAR.</p> <p>The focus on capabilities such as situational awareness is different for the various reliability entities and the eventual SDT will need to define that focus. No change made.</p> <p>The SAR DT intended failure notification to mean something local to the affected entity, e.g., notification that a particular capability is not working as intended. No change made.</p> <p>There is almost certainly going to be some documentation requirements in the eventual standard(s) or revisions although the movement to results-based</p>		

Consideration of Comments on SAR — Project 2009-02

Organization	Yes or No	Question 1 Comment
<p>standards should minimize this. However, the SAR DT has deleted the words ‘... procedures for...’ in the failure notification phrasing as the intent is not a documented procedure but a notification.</p> <p>Detailed description: Develop or revise standard(s) to describe the capability characteristics, such as availability parameters, performance metrics, failure notification, and maintenance (vetted by the industry through the Reliability Standards comment process)of functionality for:</p> <ul style="list-style-type: none"> • Monitoring power System data in Real-time. • Exchanging power System data in Real-time. • Alerting System Operators in Real-time to events and conditions affecting the state of the Bulk Electric System (BES). This functionality shall include an independent process monitor. • Determining the current state of the BES. • Evaluating the impact of ‘what if’ events on the current state of the BES. 		
E.ON U.S.	Yes	Though generally supportive of the approach, E.ON U.S. believes it is incumbent upon the SDT to draft requirements that provide sufficient notice to registered entities of what it is they should or should not do to become or remain compliant.
<p>Response: This is still a SAR and the eventual SDT will take up the implementation plan for any new or revised standard(s). A sufficient lead time with stakeholder input would be part of their considerations. No change made.</p>		
AECI System Operations	Yes	
American Transmission Company	Yes	
Duke Energy	Yes	
Entergy Services	Yes	
Exelon	Yes	
Hydro One Networks Inc.	Yes	
Independent Electricity System	Yes	

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Organization	Yes or No	Question 1 Comment
Operator		
PacifiCorp	Yes	
SERC OC Standards Review Group	Yes	
South Carolina Electric and Gas	Yes	
Western Electricity Coordinating Council	Yes	
Xcel Energy	Yes	
American Electric Power	Yes	AEP appreciates the SDT's efforts to re-align the SAR to focus on the "what" rather than the "how."
NERC Standards Review Subcommittee	Yes	N/A
<p>Response: Thank you for your support.</p>		

2. In the first set of questions, several entities suggested that this functionality should and could be handled through certification. The SAR DT has researched the issue and has compiled the following information:

Certification is a one time process. New certification criteria do not apply to entities that have already been certified. There is no re-certification process nor are there any plans that the SAR DT is aware of to expand the certification process to include re-certification. Certification only proves that an entity had the functionality at a single point in time. There is no operational history associated with certification; therefore, certification criteria that deal with Real-time operations or data are only evaluated by the certification team to determine if the entity has adequate functionality to go operational. Certification relies on the Compliance Monitoring and Enforcement Program (CMEP) to prove compliance for this functionality on an on-going basis. However, CMEP can only evaluate compliance to requirements defined in the Reliability Standards. Therefore, the SAR is necessary to allow the creation of standard requirements to address the issues raised in the SAR so they will be evaluated by CMEP.

Furthermore, there are 2 directives in FERC Order 693 relating to tool capability that need to be addressed. The existing projects that would have handled these issues (Project 2006-02 for IRO-002 and Project 2007-03 for TOP-006) have clearly indicated that they expect this SAR (Project 2009-02) to address the issues raised by FERC. It is difficult to perceive how any additions or changes to the certification process could come up with a solution that would satisfy and sustain a mandatory and enforceable status for those directives. Therefore, this SAR needs to move forward or the existing projects need to take back the responsibility for addressing the directives.

Given this information, do you believe that the issues addressed in the proposed SAR belong in the certification process? If you respond 'Yes', please provide details as to how the goals of the proposed SAR (including the Order 693 directives) could be accomplished within the certification process given that there is no re-certification process to ensure that the goals of the proposed SAR will be met by all applicable entities including those already certified.

Summary Consideration: The majority of commenters agreed with the SAR DT's position. No changes were made to the SAR based on comments to this question.

There are a few commenters still suggesting that certification can be changed to accommodate the types of issues raised in the SAR. Those commenters have been directed to make their suggestions for changes to the certification process and/or institution of a re-certification process to the proper forum.

Organization	Yes or No	Question 2 Comment
IRC Standards Review Committee		As expressed in our previous comments, we believe that these capability requirements are best stipulated in the Organization Certification Requirements. The absence of a re-certification process is not a convincing

Organization	Yes or No	Question 2 Comment
		<p>reason for not pursuing this alternative since:</p> <p>a. The requirements to continuously maintain or periodically demonstrate the capability can be added to the certification process; or</p> <p>b. A proposal can be made to develop a re-certification process or certificate maintenance process which in many commenters' view is needed not just for this set of requirements but also for other "capability" type of requirements.</p> <p>That said, we would agree that in the essence of time to meet Order 693's directives, developing a standard to house these requirements may be an acceptable interim approach before a workable certification process is developed, for so long as the requirements focus on the "what's" but not the "how's".</p> <p>In addition, we suggest the SDT to present to the Standards Committee and the Compliance and Certification Committee our recommendation for putting these requirements into the Organization Certification Requirements, and to revisit the re-certification process to ensure periodic verification of the certified capability.</p>
<p>Response: A standard can always be deleted if future changes to certification would make the requirements moot. It is outside the scope of the SAR DT to suggest changes to the certification process. Nor is it a Standards Committee item. In order to make the arguments for certification heard in the proper forum, industry representatives should forward the changes proposed to the NERC Compliance and Certification Committee. The SAR DT appreciates the support indicated for proceeding with the standards effort at this time.</p>		
Independent Electricity System Operator	Yes	<p>As expressed in our previous comments, we believe that these capability requirements are best stipulated in the Organization Certification Requirements. The absence of a re-certification process is not a convincing reason for not pursuing this alternative since:</p> <p>a. The requirements to continuously maintain or periodically demonstrate the capability can be added to the certification process; or</p> <p>b. A proposal can be made to develop a re-certification process or certificate maintenance process which in many commenters' view is needed not just for this set of requirements but also for other "capability" type of requirements.</p> <p>That said, we would agree that in the essence of time to meet Order 693's directives, developing a standard to house these requirements may be an acceptable interim approach before a workable certification process is developed, for so long as the requirements focus on the "what's" but not the "how's".</p>
<p>Response: A standard can always be deleted if future changes to certification would make the requirements moot. The SAR DT appreciates the support indicated for proceeding with the standards effort at this time. No change made.</p>		

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Organization	Yes or No	Question 2 Comment
ISO New England Inc		<p>See answer to #1 above.</p> <p>Also, in a Results/Performance Based standards world, this is a moot point. If you do not have the necessary tools, whatever your company has determined that those may be, you will violation Standard Requirements. You will, for example, violate an IROL, fail to recover from a Reportable Event, etc.</p>
Hydro-Québec TransEnergie (HQT)		<p>See the response question 1 above.</p> <p>In a Results/Performance Based standards world, this is not a valid point. Without the necessary tools, whatever those have been determined to be, Standard Requirements will be violated. An IROL will be violated, failure to recover from a Reportable Event will result in a DCS violation, etc.</p>
Northeast Power Coordinating Council		<p>See the response to Question 1 above.</p> <p>In a Results/Performance Based standard this is not a valid point. Without the necessary tools (whatever those have been determined to be), Standard Requirements will be violated. An IROL will be violated, failure to recover from a Reportable Event will result in a DCS violation, etc.</p>
<p>Response: See response to #1 above.</p> <p>The SAR DT does not see any point of conflict between the proposed results-based reliability standards effort and the proposed content of any eventual standard(s) or changes to existing standard(s) that this SAR might generate. Indeed, the SAR DT believes that the SAR directly addresses the risk-based element of the proposed results-based reliability standard effort. In the presentation to the NERC Board of Trustees (Proposal to Develop Results-Based Reliability Standards), the following example was quoted: “The analogy in airline safety would be a performance based requirement to avoid plane crashes. The cost of failure is too high to rely solely on enforcing compliance after such a failure. Like airline safety, bulk power system reliability requires additional, preventive requirements to reduce the risks of failure to acceptable tolerance levels.” No change made.</p>		
AECI System Operations	No	
American Transmission Company	No	
Bonneville Power Administration	No	
Dominion	No	
Duke Energy	No	

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Organization	Yes or No	Question 2 Comment
Hydro One Networks Inc.	No	
PacifiCorp	No	
South Carolina Electric and Gas	No	
ODEC	No	Certification is a process that says the entity has the capability to meet the requirements applicable to them, but this does not mean that the entity will meet the requirements. The two are different and need to be kept that way. One time certification is fine, the region could ask for re-certification if they find deficiencies with the entity in their performance.
US Bureau of Reclamation	No	The Commission was very clear that the modification it was requesting for TOP-006 could involve new capabilities for the Balancing Authority, the Transmission Operators and possibly the Reliability Coordinator.
Midwest ISO	No	The Midwest ISO believes a basic set of tools should be required for Reliability Coordinators. We believe they should part of the Reliability Standards so they will be part of the three-year audit cycle to ensure that the Reliability Coordinators maintain this basic tool set.
Western Electricity Coordinating Council	No	We agree that certification should be a one-time process and that the compliance audits of entities every 3 years should adequately address the issue of capabilities without recertification.
Xcel Energy	No	Given that there is no re-certification process, the proposed SAR should address the tools required by entities to address the real time monitoring issues.
Response: Thank you for your comment.		
American Electric Power	No	<p>Given the limitations described, it seems appropriate to proceed with the standards development process to resolve these reliability issues as advocated by the SDT.</p> <p>AEP is hopeful that efforts will continue on the certification front to meet the reliability concerns expressed in this SAR as well. Ultimately, we believe that the NERC certification process of functional entities to ensure that the right tool set is in place and operating correctly is preferable to allowing, by administrative registration alone, to begin operating and then, afterwards, trying to invoke standards to address operating issues that could have been avoided up-front.</p>
Response: In order to make the arguments for certification heard in the proper forum, industry representatives should forward the changes proposed to the NERC		

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Organization	Yes or No	Question 2 Comment
Compliance and Certification Committee. The SAR DT appreciates the support indicated for proceeding with the standards effort at this time.		
FirstEnergy	No	While we agree the changes proposed in this SAR are not suited to the organization certification process, we are unclear as to why the Project 2007-03 SDT feels this project cannot be combined with theirs. Part of their responsibility appears to be managing the rules for the use of the System Operator tools. This SAR proposes to require a set of tool capability and performance. It would seem logical to expect the team responsible for specifying the use of system operator tools would have the skill set to determine the tool set make up and the performance needed from those tools to produce an outcome consistent with the reliability of the BES. If left as separate projects, a high degree of coordination seems necessary to ensure the tools required and the use of those tools are sufficiently covered by the standards.
<p>Response: The Project 2007-03 SDT thought it best to restrict the TOP family of standards to operating issues as opposed to mixing in capability requirements. Since the SAR for this project had been posted during the Project 2007-03 deliberations, the Project 2007-03 SDT saw an opportunity to achieve their goal of cleaning up the TOP family of standards to include only operating requirements. Both projects have the same NERC staff coordinator so coordination should not be a problem.</p>		
MRO NERC Standards Review Subcommittee	No	Wouldn't this be covered by NERC BOT approved PER-005-1 as a reliability related task?
<p>Response: No - Training operators on capabilities, as described in PER-005-1, does not address the items covered in this SAR such as performance metrics of those capabilities. No change made.</p>		
Entergy Services	Yes	
SERC OC Standards Review Group	Yes	Some of the requirements (to have a certain capability or if we are forced there by FERC, a certain type of tool) best belong in certification. However, we agree that a requirement to have greater than a minimum certain 12 month-ending availability of an analytical capability and a requirement to have greater than a certain minimum quality of solution as measured on a 12 month-ending basis could better be addressed as a Reliability Standard. That is, the existence of a capability belongs in certification. Operational attributes of this capability belong in Reliability Standards. A demonstration of the functionality should be in the certification process, however once an entity is certified then compliance to performance metrics, availability parameters, etc could be in a standard. If an entity meets the performance metrics then obviously they must have the tools.
E.ON U.S.	Yes	A demonstration of the functionality should be in the certification process, however once an entity is certified then compliance to performance metrics, availability parameters, etc could be in a standard. If an entity

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Organization	Yes or No	Question 2 Comment
		meets the performance metrics then obviously they must have the tools.
Response: Thank you for your support of moving forward with the standards process for performance metrics et al.		
Ameren	Yes	<p>First of all, the team asserts in this question that FERC Order 693 requires the team to address "tool capability". Yet it disingenuously has renamed itself to talk about capabilities and NOT tools. It therefore begs the question, "Why would this SAR be better to address 693's "tools".</p> <p>Just because recertification is not currently in the process does not mean it could not be added, especially in cases where fundamental qualifications change.</p>
<p>Response: The SAR DT is dealing directly with Order 693 in stating capabilities as cited in paragraph 1660: "...note that our intent was not to identify specific sets of tools, but rather the minimum capabilities that are necessary to enable operators to deal with real-time situations and to ensure reliable operation of the Bulk-Power System". Note that the use of minimum here does not imply a least common denominator approach as shown in paragraph 906: "We do not believe that the identification of minimum capabilities translates to "lowest common denominator". No change made.</p> <p>It is outside the scope of the SAR DT to suggest changes to the certification process. In order to make the arguments for certification heard in the proper forum, industry representatives should forward the changes proposed to the NERC Compliance and Certification Committee.</p>		
Pepco Holdings, Inc.	Yes	Performance based reliability standards will ensure compliance. There is no need for measuring the physical performance of the tools used to meet those reliability performance requirements.
<p>Response: The SAR DT does not believe that performance-based reliability standards, in and of themselves, ensure compliance. The SAR DT believes that the SAR directly addresses the competency element of the proposed results-based reliability standard effort. In the presentation to the NERC Board of Trustees (Proposal to Develop Results-Based Reliability Standards), the following example was quoted: "The analogy in airline safety would be a performance based requirement to avoid plane crashes. The cost of failure is too high to rely solely on enforcing compliance after such a failure. Like airline safety, bulk power system reliability requires additional, preventive requirements to reduce the risks of failure to acceptable tolerance levels." No change made.</p>		
Manitoba Hydro	Yes	Though the introduction of a new standard is not welcome, this appears to be the only way to ensure measurable and enforceable goals.
Response: Thank you for your support.		
Georgia System Operations Corporation	Yes	Yes, the issues addressed in the proposed SAR belong in a certification process. Why, because there is no adequate certification process today, should a certification issue be turned into a Reliability Standard issue? Having certain capabilities is a certification issue and should be addressed by fixing the certification process. Certification processes should apply criteria to entities that have already been certified. Certification should

Organization	Yes or No	Question 2 Comment
		<p>not be a one time process. There should be a certification and re-certification process. There was no operational history associated with mandatory reliability standards before June 2007. Such an operational history is being built now. After developing and putting in place an adequate certification program, then there will be an operational history associated with certification and re-certification. Certification criteria that deal with real-time operations or data should be evaluated by a certification team to determine if the entity has adequate functionality to be certified. Certification should not rely on the Compliance Monitoring and Enforcement Program (CMEP) to prove adequate functionality when there are violations of standards or on an on-going basis. There should be a separate certification (or capability verification) program to prove that. The issues raised by FERC should be addressed by first revamping all NERC requirements to risk-informed, performance-based requirements and developing a capability verification (certification) program. Then with a new slate of comprehensive, measurable, and auditable requirements and with a capability verification program, the original issues of FERC would be addressed. It is easy to perceive how having these things could eliminate the root problems and therefore the need to come up with solutions. That should satisfy and sustain a mandatory and enforceable status for those FERC directives.</p> <p>This SAR does not need to move forward to address the FERC directives.</p>
<p>Response: It is outside the scope of the SAR DT to suggest changes to the certification process. In order to make the arguments for certification heard in the proper forum, industry representatives should forward the changes proposed to the NERC Compliance and Certification Committee. The SAR DT does not believe that performance-based reliability standards, in and of themselves, ensure compliance. The SAR DT believes that the SAR directly addresses the risk-based element of the proposed results-based reliability standard effort. In the presentation to the NERC Board of Trustees (Proposal to Develop Results-Based Reliability Standards), the following example was quoted: “The analogy in airline safety would be a performance based requirement to avoid plane crashes. The cost of failure is too high to rely solely on enforcing compliance after such a failure. Like airline safety, bulk power system reliability requires additional, preventive requirements to reduce the risks of failure to acceptable tolerance levels.”</p> <p>The SAR DT has no control over the certification process and is working under the existing rules and procedures to fill a reliability gap. No change made.</p>		
Public Service Enterprise Group Companies	Yes	Yes, tools and tool capabilities are better handled within a certification process, that is, a certification that the entity has tools that are needed to meet the requirements of a standard. The certification process could be conducted initially and as a periodic re-certification if that is deemed necessary.
<p>Response: It is outside the scope of the SAR DT to suggest changes to the certification process. In order to make the arguments for certification heard in the proper forum, industry representatives should forward the changes proposed to the NERC Compliance and Certification Committee. No change made.</p>		

3. The approach taken by the Standards Development Program is not to write new requirements that assess basic capabilities used to achieve performance measured through other requirements within the Reliability Standards. The SAR DT has researched the standards and concluded that other requirements do not presently exist to adequately cover the issues raised in the SAR. Do you agree with this position? If not, please identify existing standard requirements that would apply and explain how these requirements accomplish the goals of the proposed SAR (including the Order 693 directives).

Summary Consideration: The majority of the commenters agreed with the SAR DT’s position. However, based on industry comments, the SAR DT has added the BAL family of standards to the list of applicable standards to be reviewed.

The SAR DT agrees with commenters who pointed out that duplication or conflict of requirements is to be avoided. Including the TOP, IRO, BAL, and COM-001 standards to the list of standards that the eventual SDT must review should obviate any concerns on duplication or conflict of requirements.

Organization	Yes or No	Question 3 Comment
Ameren	No	
Response: Without specific comments as to your reason for the ‘No’ comment, the SDT can’t respond.		
American Electric Power	No	<p>AEP believes that elements identified in the detailed description portion of the SAR are largely covered in the existing standards, including those shown below (Table 1). The roll-up of SAR functions from SAR version 1 to a higher level descriptor in SAR version 2 does not seem to limit the relevance of all of the listed standards that AEP has researched. We are concerned that repetition of requirements across multiple standards may create ambiguity if alternative requirements or methods are defined from one to the other. The repetition also establishes the possibility of compounding violations for a single infraction. To the extent that new requirements are needed to address operational gaps, we believe that these should be made in the next revision of the applicable existing standards.</p> <p>TABLE I - Existing NERC Reliability Standards addressing Alarming, Telemetry, Network Analysis, Related Performance Metrics (Availability and Quality), and Processes and Procedures supporting Real-Time Tools (Change Mgt., Maintenance Coordination, and Failure Notification) :</p> <p>Alarming</p> <p>COM-001-1.1 does have some language related to the alarming of vital telecommunications facilities for voice and data.</p>

Organization	Yes or No	Question 3 Comment
		<p>TOP-006-2 stress the importance of monitoring equipment to be used to 'alarm' or bring to the attention of operating personnel important deviations in operating conditions and to indicate, if appropriate, the need for corrective action.</p> <p>IRO-002-2, gives direction on the alarming management and awareness systems that need to be in place for the RC.</p> <p>Telemetry</p> <p>BAL-001-0, dealing with the ACE equation along with Control Performance Standards (CPS1 and CPS2)</p> <p>BAL-004-0, addressing Time Error Corrections</p> <p>BAL-005-0.1b, focuses on the telemetry components necessary for calculating the ACE equation</p> <p>BAL-006-1.1, tasks the Balancing Authorities to calculate and record hourly Inadvertent Interchange</p> <p>IRO-004-1, details the information that needs to be sent to the RC for reliability studies to be performed</p> <p>IRO-005-3, breaks down most of the parameters that a RC would need to receive for monitoring the BES</p> <p>TOP-002-2, highlights that changes in transmission facility status, along with ratings should be monitored and conveyed to the RC and BA</p> <p>TOP-005-2 is the Operational Reliability Information standard that lays out all of the data that needs to be updated at least every ten minutes</p> <p>TOP-006-2 is another standard focused on monitoring system conditions.</p> <p>VAR-001-1 also is offering details on what data should be pipelined back to the operating control centers from the BES.</p> <p>Network Analysis</p> <p>IRO-004-1, discusses the ability for the RC, TO, and BA to conduct next-day reliability analyses to ensure that the BES can be operated reliably</p> <p>TOP-002-2, looks at the performance of current-day, next-day, and studies operational studies in conjunction with neighboring BA(s) and TO(s).</p> <p>TOP-002-2, also address the thermal and voltage contingency analysis that needs to be performed.</p> <p>IRO-002-2, details the analysis that needs to take place via state estimation and other visualization tools.</p> <p>Performance Metrics for Availability and Quality Availability</p>

Organization	Yes or No	Question 3 Comment
		<p>BAL-005-0.1b, R8 looks at SCADA availability to gather data and calculate ACE. This requirement also addresses the availability of Frequency Metering equipment (99.95%).</p> <p>COM-001-1.1, stresses the diversity and redundancy of communication paths for the available exchange of Interconnection and operating information, internally and externally to AEP.</p> <p>EOP-008-0, emphasizes the development of a plan to ensure the monitoring and control of transmission, distribution and generation assets even with the loss of the Control Center.</p> <p>Quality</p> <p>BAL-005-0.1b, R17 breaks down the accuracy of the metering devices for time error and frequency measurements</p> <p>BAL-006-1.1 requires adjacent balancing authorities to have common megawatt-hour meters at the interconnection point.</p> <p>IRO-005-3, discusses the importance of operating to the most limiting element if there is a discrepancy between various entities monitoring the same facilities.</p> <p>TOP-006-2 generically states that sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions.</p> <p>Processes and Procedures supporting Real-Time Tools: Change Mgt., Maintenance Coordination, and Failure Notification Change Management</p> <p>FAC-009-1, obligates the communication to RC(s), PA(s), TP(s), and TO(s) for new facility ratings on the Bulk Electric System.</p> <p>TOP-002-2, implies that there should be a facility change notification system in place for neighboring entities to use uniform line identifiers when referring to interconnected facilities.</p> <p>BAL-004-0, addressing Time Error Corrections Maintenance Coordination</p> <p>FAC-009-1, it is implied that these changes will be applied to the real time computer model with alterations to facility ratings on the Bulk Electric System.</p> <p>TOP-002-2, talks about each BA and TO maintaining accurate computer models for analyzing and planning system operations. Failure Notification</p> <p>IRO-005-3, highlights the responsibility to identify significant issues with ACE that can attribute to other errors, such as frequency error and Time error.</p> <p>As the SDT has described, the directives in Order 693 relate to IRO-002 and TOP-006 and indicate a desire</p>

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Organization	Yes or No	Question 3 Comment
		for a minimum set of capabilities. If the present SDTs for the referenced projects do not currently have these reliability issues in their scope, it would seem appropriate for NERC to slate these improvements for the next version of these respective standards.
<p>Response: The SAR DT revised the SAR in the second posting to include the possibility of revising existing standards based on your research and comments. However, the SAR DT only included TOP, IRO, and COM standards. Upon further review, the SAR DT agrees that the BAL family of standards should be included in the list of applicable standards since they deal with reliability-based data. The other standards cited do not currently contain requirements addressing the capabilities envisioned in the SAR. The eventual SDT will have the ability to create new standards or revise existing standards. If they create new standards or revise existing standards, one of their responsibilities is to ensure that there will be no conflicting or redundant requirements in other standards. If one were to wait until the individual standards were to come up for revision, there would be a major coordination problem as some standards would be revised prior to others. In addition, there could be a lengthy period of time before these standards come up for revision again and the reliability gap from lack of requirements in this area will be open for that period of time. No change made.</p>		
South Carolina Electric and Gas	No	BAL-005 R8, R14, and R16 define the BAs requirements for monitoring real-time data for the operation of AGC. The new standard should not conflict with these requirements.
<p>Response: The SAR DT agrees that the BAL family of standards should be included in the list of applicable standards since they deal with reliability-based data.</p>		
SERC OC Standards Review Group	No	COM-002 R1 states "...voice and data links" shall be "...available for addressing a real-time emergency condition". The SDT should consider clarifying this point in relation to the performance metrics, availability parameters, etc as outlined in this SAR.
E.ON U.S.	Yes	COM-002 R1 states "...voice and data links" shall be "...available for addressing a real-time emergency condition". The SDT should consider clarifying this point in relation to the performance metrics, availability parameters, etc as outlined in this SAR.
<p>Response: The SAR DT does not see the applicability of this standard to the concepts expressed in the SAR. COM-002 is describing physical assets and the SAR is dealing with performance issues. No change made.</p>		
ISO New England Inc	No	See answer to #1 above. Also, in a Results/Performance Based standards world, this is a moot point. If you do not have the necessary tools, whatever your company has determined that those may be, you will violation Standard Requirements. You will, for example, violate an IROL, fail to recover from a Reportable Event, etc.
Hydro-Québec TransEnergie	No	See the response to question 1 above.

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Organization	Yes or No	Question 3 Comment
(HQT)		In a Results/Performance Based standards world, this is not a valid point. Without the necessary tools, whatever those have been determined to be, Standard Requirements will be violated. An IROL will be violated, failure to recover from a Reportable Event will result in a DCS violation, etc.
Northeast Power Coordinating Council	No	See the response to Question 1 above. In a Results/Performance Based standard this is not a valid point. Without the necessary tools (whatever those have been determined to be), Standard Requirements will be violated. An IROL will be violated, failure to recover from a Reportable Event will result in a DCS violation, etc.
<p>Response: See response to #1 above.</p> <p>The SAR DT does not see any point of conflict between the proposed results-based reliability standards effort and the proposed content of any eventual standard(s) or changes to existing standard(s) that this SAR might generate. Indeed, the SAR DT believes that the SAR directly addresses the competency element of the proposed results-based reliability standard effort. In the presentation to the NERC Board of Trustees (Proposal to Develop Results-Based Reliability Standards), the following example was quoted: “The analogy in airline safety would be a performance based requirement to avoid plane crashes. The cost of failure is too high to rely solely on enforcing compliance after such a failure. Like airline safety, bulk power system reliability requires additional, preventive requirements to reduce the risks of failure to acceptable tolerance levels.” No change made.</p>		
IRC Standards Review Committee	No	See comment under Q1 and Q2, above.
Pepco Holdings, Inc.	No	See response to Q1 and Q2
<p>Response: See responses to Q1 & Q2 above.</p>		
Georgia System Operations Corporation	No	The best use of NERC’s and the industry’s thinly stretched resources is to work on the project to revise the entire set of standards to result in only the necessary risk-informed, performance-based requirements. Then there should be no gap of requirements. The approach taken by the Standards Development Program, to not write new requirements that assess basic capabilities used to achieve performance measured through other requirements within the Reliability Standards, would result in no need for this SAR because all necessary performance (of the bulk power system) requirements would then be in the Reliability Standards. Rather than adding more requirements, NERC should eliminate unnecessary requirements to a number of important performance-based requirements. Resources are being stretched thinner and thinner. Resources spend time complying with the letter of unnecessary, poorly worded requirements rather than complying with the spirit of what should be required and the translation of that spirit into literal performance-based requirements. Much time is also spent reviewing, commenting, and voting on all of the other existing NERC projects. If it came to a

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Organization	Yes or No	Question 3 Comment
		<p>choice of performing only the project to revise the standards to result in only the necessary risk-informed, performance-based requirements or performing all of the other projects in NERC’s 3 year plan, it would do more good for reliability and for compliance enforcement to accomplish only that one performance-based project. In fact, rather than doing all of the projects, it would be best for the sake of the limited amount of resources to put a hold on most (if not all) of the other projects and to work only on this one comprehensive project. The “staffing” and content of the ongoing and existing projects should be reorganized to be merged into and organized around the comprehensive results-based project and not around the existing very many separate projects that sprang up at different times with different objectives and perspectives. Performing this project first would likely correct the issues or problems which lead to the creation of many of the existing projects. Many of the other projects could be cancelled.</p>
<p>Response: The Standards Committee sets the priority as to what projects are worked on. That is not within the scope of the SAR DT. If the Standards Committee decides that this SAR is not worthy of continuing, they will take the appropriate steps to curtail it.</p> <p>The SAR DT believes that the SAR directly addresses the competency element of the proposed results-based reliability standard effort. No change made.</p>		
Western Electricity Coordinating Council	No	<p>We believe the current requirements in the standards are adequate to address the basic capabilities required of the RCs. However, the requirements applicable to RCs are more specific in many cases than the requirements applicable to other entities.</p>
<p>Response: Order 693 directs the ERO to make changes to the standards to address identified reliability gaps in the IRO and TOP standards. This undermines the basis for the statement made by WECC. The SAR DT believes that the existing requirements for the Reliability Coordinator do not address the aspects of performance, maintenance, and capability that are the subject of this SAR and as pointed out do not apply to other functional entities. No change made.</p>		
Duke Energy	Yes	<p>However the Standards Drafting Team must be careful not to duplicate existing requirements in other standards, and until we see a draft it’s difficult to say there won’t be any duplication. For example, the Detailed Description of the SAR has a bullet “Evaluating the impact of ‘what if’ events on the current or future state of the BES.” This could duplicate TOP-002-2 Requirement R6 which states that “Each Balancing Authority and Transmission Operator shall plan to meet unscheduled changes in system configuration and generation dispatch (at a minimum N-1 Contingency planning) in accordance with NERC, Regional Reliability Organization, subregional, and local reliability requirements.</p>
<p>Response: The SAR DT agrees that duplication must be avoided. The eventual SDT will have the ability to create new standards or revise existing standards. If they create new standards or revise existing standards, one of their responsibilities is to ensure that there will be no conflicting or redundant requirements in other standards as identified in the SAR including the TOP standards. No change made.</p>		

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Organization	Yes or No	Question 3 Comment
Manitoba Hydro	Yes	As much as we desire NOT to see a new standard, by examining the SAR and related FERC Order 693, the following goals: Based on the SARS Detailed Description, the following goals are: o describe capability characteristics o availability parameters o performance metrics o failure notification o maintenance coordination o change management o independent process monitor (watchdog) o monitoring power system data in real time o exchanging power system date in real time and from FERC 693 905 - RC has minimum set of tools 906 - Identify minimum capabilities and not tools (tools become obsolete) 1660 - Minimum set of analytical tools (not specific tools)would require modification of requirements from quite a few different Standards.
Response: The SAR DT does not see that the changes suggested add any clarity to the Detailed Description. No change made.		
AECI System Operations	Yes	
American Transmission Company	Yes	
Bonneville Power Administration	Yes	
Dominion	Yes	
Entergy Services	Yes	
Exelon	Yes	
FirstEnergy	Yes	
Hydro One Networks Inc.	Yes	
Independent Electricity System Operator	Yes	
Midwest ISO	Yes	
PacifiCorp	Yes	

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Organization	Yes or No	Question 3 Comment
US Bureau of Reclamation	Yes	
Xcel Energy	Yes	
NERC Standards Review Subcommittee	Yes	N/A
Response: Thank you for your support.		

4. Does the revised Detailed Description of the SAR provide sufficient details for the eventual Standard Drafting Team to execute the SAR? If not, please identify areas of insufficient detail and provide suggested wording for increased clarity.

Summary Consideration: The majority of commenters agree that sufficient details have been provided. Two small clarifying changes have been made to the SAR based on suggestions made in response to this question.

Detailed description: Develop or revise standard(s) to describe the capability characteristics, such as availability parameters, performance metrics, failure notification, and maintenance (vetted by the industry through the Reliability Standards comment process) of functionality for:

- Monitoring power System data in Real-time.
- Exchanging power System data in Real-time.
- Alerting System Operators in Real-time to events and conditions affecting the state of the Bulk Electric System (BES). This functionality shall include an independent process monitor.
- Determining the current state of the BES.
- Evaluating the impact of 'what if' events on the current state of the BES.

Organization	Yes or No	Question 4 Comment
ISO New England Inc		See answer to #1 above.
Northeast Power Coordinating Council		See the response to Question 1 above.
Ameren	No	see general comment in 1
Hydro-Québec TransEnergie (HQT)	No	See the response to question 1 above.
Response: See response to #1 above.		
PacifiCorp	No	

Organization	Yes or No	Question 4 Comment
<p>Response: Without a specific comment, the SDT is unable to respond.</p>		
E.ON U.S.	No	<p>Bullet 5 of the Detailed Description references “...future state of the BES”. The SDT needs to be cautious in defining what this means or remove that language altogether. The other bullets clearly spell out “Real-time” which defined by the NERC Glossary is “Present time as opposed to future time”. Bullet 5 appears to contradict the other bullets in its timeframe.</p>
SERC OC Standards Review Group	No	<p>Bullet 5 of the Detailed Description references: “...future state of the BES”. The SDT needs to be cautious in defining what this means or remove that language altogether. The other bullets clearly spell out “Real-time” which defined by the NERC Glossary is “Present time as opposed to future time”. Bullet 5 appears to contradict the other bullets in its timeframe scope. “The comments expressed herein represent a consensus of the views of the above named members of the SERC OC Standards Review group only and should not be construed as the position of SERC Reliability Corporation, its board or its officers.”</p>
<p>Response: The SAR DT agrees that ‘future’ is not needed for Real-time Monitoring and Analysis Capabilities and has deleted that term from the SAR language.</p> <p>Detailed description: Develop or revise standard(s) to describe the capability characteristics, such as availability parameters, performance metrics, failure notification, and maintenance (vetted by the industry through the Reliability Standards comment process)of functionality for:</p> <ul style="list-style-type: none"> • Monitoring power System data in Real-time. • Exchanging power System data in Real-time. • Alerting System Operators in Real-time to events and conditions affecting the state of the Bulk Electric System (BES). This functionality shall include an independent process monitor. • Determining the current state of the BES. • Evaluating the impact of ‘what if’ events on the current state of the BES. 		
Public Service Enterprise Group Companies	No	<p>Monitoring is difficult to describe in a standard. The SAR has the potential to result in a standard that creates an undue administrative burden that is highly subjective, especially in the context of a compliance audit.</p> <p>Also, the subject matter of the SAR appears to be applicable to tasks necessarily performed by transmission operators but not necessary for generator operators. GOP should be eliminated from the applicable entities.</p>
<p>Response: The SAR DT understands your concern. However, this is just a SAR at this point and the rather generic language would seem to be appropriate here. There is almost certainly going to be some documentation requirements in the eventual standard(s) or revisions although the movement to results-based standards should minimize this. The eventual SDT will specify any Requirements and Measures needed and vet them with the industry through the comment and ballot</p>		

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Organization	Yes or No	Question 4 Comment
<p>periods. No change made.</p> <p>The Generator Operator is included here because it owns reliability data that is essential to the Transmission Operators and Balancing Authorities and the quality of that data is of concern. The focus on capabilities is different for the various reliability entities and the eventual SDT will need to define that focus. For example, the Generator Operator would not be expected to perform network analysis. The SAR DT continues to believe that the eventual SDT needs to have the flexibility to include or not include the Generator Operator. No change made.</p>		
<p>FirstEnergy</p>	<p>No</p>	<p>See comments provided in item 1 above.</p> <p>Also, on Pg. 2 of the SAR it would be more helpful if it specifically stated the following regarding FERC directives: 1. "In Par. 905 of Order 693 '... the Commission directs the ERO to modify IRO-002-1 to require a minimum set of tools that must be made available to the reliability coordinator. We believe that this requirement will ensure that a reliability coordinator has the tools it needs to perform its functions. Further, as noted by Dominion, such a requirement promotes a more proactive approach to maintaining reliability'." 2. "In Par. 1660 of Order 693, FERC directed modifications to TOP-006-1 1660 '... related to the provision of a minimum set of analytical tools. In response to LPPC and others, we note that our intent was not to identify specific sets of tools, but rather the minimum capabilities that are necessary to enable operators to deal with real-time situations and to ensure reliable operation of the Bulk-Power System. In response to APPA that the inclusion of specific analytical tools is counterproductive because the tools will become obsolete, we note that we are not seeking specific analytical tools, but rather minimum capabilities'."</p> <p>Also, it should be noted that the SDTs currently working on IRO-002 and TOP-006, Project 2006-06 and 2007-03, respectively, are proposing to retire both of these standards. Therefore, the eventual SDT for this Project 2009-02 will have to determine the appropriate standards to include new requirements for Real-time monitoring and analysis capabilities.</p>
<p>Response: See response to #1 above.</p> <p>The present wording of the SAR contains a reference to the appropriate paragraphs of Order 693 and the SAR DT feels that this is sufficient. No change made.</p> <p>The SAR DT agrees that the eventual SDT should have the capability to create or revise standards as deemed appropriate and be required to respond to all FERC directives on these issues. The language of the SAR assures that these obligations will be passed on to the eventual SDT. No change made.</p>		
<p>US Bureau of Reclamation</p>	<p>No</p>	<p>The SAR needs to incorporate the language from Order 693. The scope should be limited to the modification of respective standards.</p>
<p>Response: The present wording of the SAR contains a reference to the appropriate paragraphs of Order 693 and the SAR DT feels that this is sufficient. No change made.</p> <p>TOP-006 and IRO-002 are not the only standards that address the topics in the SAR. As pointed out by other industry commenters, BAL and COM-001 need to be</p>		

Organization	Yes or No	Question 4 Comment
<p>reviewed as well. In addition, the eventual SDT needs the flexibility to create new standards if they determine that all of the topics in the SAR can not be addressed by modifications to existing standards. No change made.</p>		
<p>South Carolina Electric and Gas</p>	<p>No</p>	<p>There are some terms used in the SAR that need to be clarified, such as "watch dog". Better define what is meant by "independent process monitor". Is the group specifying how the system should function or specific tool that should be used.</p>
<p>Response: The term 'watch dog' is only cited as a possible example and the SAR DT agrees that it is not needed in a SAR and has deleted the terminology. Detailed description: Develop or revise standard(s) to describe the capability characteristics, such as availability parameters, performance metrics, failure notification, and maintenance (vetted by the industry through the Reliability Standards comment process)of functionality for:</p> <ul style="list-style-type: none"> • Monitoring power System data in Real-time. • Exchanging power System data in Real-time. • Alerting System Operators in Real-time to events and conditions affecting the state of the Bulk Electric System (BES). This functionality shall include an independent process monitor. • Determining the current state of the BES. • Evaluating the impact of 'what if' events on the current state of the BES. <p>'Independent process monitor' is a well understood term and implies a process that is separate from what is being monitored. No change made.</p>		
<p>Western Electricity Coordinating Council</p>	<p>No</p>	<p>We are not certain we understand the meaning of the reference to a watch dog. This functionality shall include an independent process monitor (e.g., watchdog). The IRO standards cover the items listed in the detailed description, so the STD should not be duplicative of the IRO standards.</p>
<p>Response: The term 'watch dog' is only cited as a possible example and the SAR DT agrees that it is not needed in a SAR and has deleted the terminology. Detailed description: Develop or revise standard(s) to describe the capability characteristics, such as availability parameters, performance metrics, failure notification, and maintenance (vetted by the industry through the Reliability Standards comment process)of functionality for:</p> <ul style="list-style-type: none"> • Monitoring power System data in Real-time. • Exchanging power System data in Real-time. • Alerting System Operators in Real-time to events and conditions affecting the state of the Bulk Electric System (BES). This functionality shall include an 		

Organization	Yes or No	Question 4 Comment
		<p>independent process monitor.</p> <ul style="list-style-type: none"> Determining the current state of the BES. Evaluating the impact of 'what if' events on the current state of the BES. <p>The SAR DT agrees that duplication must be avoided. The eventual SDT will have the ability to create new standards or revise existing standards. If they create new standards or revise existing standards, one of their responsibilities is to ensure that there will be no conflicting or redundant requirements in other standards as identified in the SAR including the IRO standards. No change made.</p>
Manitoba Hydro	Yes	<p>Very tangible details such as telemetry, alarming, Network Analysis terms were removed from the SAR and replaced with vague terms such as:</p> <ul style="list-style-type: none"> o describe capability characteristics o availability parameters o performance metrics o failure notification o maintenance coordination o change management o independent process monitor (watchdog) o monitoring power system data in real time o exchanging power system data in real time. <p>If it wasn't for the SAR redline copy (that contained telemetry, alarming, Network Analysis) the above terminology would be difficult to assess.</p> <ol style="list-style-type: none"> 1. Capability characteristics of what, analytical tools, alarms, telemetry, all these items? 2. Availability parameters of what, analytical tools, alarms, telemetry, all these items? 3. Failure notification of what, analytical tools, alarms, telemetry, all these items? 4. Maintenance coordination of what, analytical tools, alarms, telemetry, all these items? 5. Change Management (See note 4 in question 1) of what, analytical tools, alarms, telemetry, all these items? 6. Under which of the above SAR details could you assume FERC order 693 "minimum set of analytical tools" falls under? 7. What does "Independent process monitor (watchdog)" mean is that an analytical tool or is that an RC? 8. Exchanging and monitoring power system data in real time, isn't that covered in TOP-005 1.1, "Attachment 1 - TOP-005-1.1"?
<p>Response: 1. through 4. The SAR DT was responding to a majority of industry comments and the FERC directives in changing the specific terminology in the first posting of the SAR. The capability characteristics, etc. refer to the subsequent bullets in the Detailed Description section of the SAR. No change made.</p> <p>5. The term 'change management' has been deleted based on earlier comments.</p> <p>6. In Order 693 where it seems to call for a minimum set of analytical tools, this is clarified later as capabilities in paragraph 1660. No change made.</p>		

Organization	Yes or No	Question 4 Comment
<p>7. The term 'watch dog' is only cited as a possible example and the SAR DT agrees that it is not needed in a SAR and has deleted the terminology.</p> <p>Detailed description: Develop or revise standard(s) to describe the capability characteristics, such as availability parameters, performance metrics, failure notification, and maintenance (vetted by the industry through the Reliability Standards comment process)of functionality for:</p> <ul style="list-style-type: none"> • Monitoring power System data in Real-time. • Exchanging power System data in Real-time. • Alerting System Operators in Real-time to events and conditions affecting the state of the Bulk Electric System (BES). This functionality shall include an independent process monitor. • Determining the current state of the BES. • Evaluating the impact of 'what if' events on the current state of the BES. <p>'Independent process monitor' is a well understood term and implies a process that is separate from what is being monitored. No change made</p> <p>8. The SAR DT agrees that duplication must be avoided. The eventual SDT will have the ability to create new standards or revise existing standards. If they create new standards or revise existing standards, one of their responsibilities is to ensure that there will be no conflicting or redundant requirements in other standards as identified in the SAR including the TOP standards. No change made.</p>		
AECI System Operations	Yes	
American Electric Power	Yes	
American Transmission Company	Yes	
Bonneville Power Administration	Yes	
Dominion	Yes	
Duke Energy	Yes	
Entergy Services	Yes	
Exelon	Yes	
Hydro One Networks Inc.	Yes	

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Organization	Yes or No	Question 4 Comment
Independent Electricity System Operator	Yes	
Midwest ISO	Yes	
Xcel Energy	Yes	
NERC Standards Review Subcommittee	Yes	N/A
Response: Thank you for your comment.		