

List of Directives and Related Standards

Please add any general comments you have to the end of this document. Thank you again!

General Comment 1: The Midwest Reliability Organization’s NERC Standards Review Subcommittee (NSRS) understands the position that the ERO is presently in when faced with the task of incorporating the Commissions directives as written in FERC Order 693. The NSRS agrees that there are “specific” directives that the Commission has presented to the industry and the ERO for inclusion into presently mandatory reliability Standards. The monumental task of providing Reliability Standards that incorporate a word for word placement would only provide an unjust burden on the adequate level of reliability of the Bulk Electric System. Upon the review of FERC Oder 693, the NSRS wishes to point out to the ERO that the Commission has stated in paragraph 186 of FERC Order 693 that;

186. Thus, in some instances, while we provide specific details regarding the Commission’s expectations, we intend by doing so to provide useful guidance to assist in the Reliability Standards development process, not to impede it. We find that this is consistent with statutory language that authorizes the Commission to order the ERO to submit a modification “that addresses a specific matter” if the Commission considers it appropriate to carry out section 215 of the FPA. In the Final Rule, we have considered commenter’s’ concerns and, where a directive for modification appears to be determinative of the outcome, the Commission provides flexibility by directing the ERO to address the underlying issue through the Reliability Standards development process without mandating a specific change to the Reliability Standard. Further, the Commission clarifies that, where the Final Rule identifies a concern and offers a specific approach to address the concern, we will consider an equivalent alternative approach provided that the ERO demonstrates that the alternative will address the Commission’s underlying concern or goal as efficiently and effectively as the Commission’s proposal.

Following the Commission’s guidance as stated in paragraph 186, the NSRS respectfully submits the following comments that are an equivalent alternative, thus providing an efficient and effective focus within the following mandatory reliability Standards.

Paragraph	Summary of Directive Language	Standard No.	NERC Comments	Reviewer Comments
321	Modify to make requirements R4.2 and R6.2 refer to NERC rather than the NERC Operating Committee.	BAL-002-0		

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321	Substitute regional entity for regional reliability organization as the compliance monitor	BAL-002-0		
330	Include a requirement that explicitly provides that DSM may be used as a resource for contingency reserves.	BAL-002-0		
335	DSM should be treated on a comparable basis and must meet similar technical requirements as other resources providing this service	BAL-002-0		
354	Requires any single reportable disturbance that has a recovery time of 15 minutes or longer be reported as a violation.	BAL-002-0		The bulk of ERO recommended changes are in areas outside of the Requirements. A Requirement is to give an applicable entity a clear understanding of what action is to be expected. The proposed rewrite has placed pseudo requirements in the areas of Section C (“Measurements”), Section D (“Compliance”), and the Violation Severity Levels. The NSRS recommends that only the Requirements are changed as directed.

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404	Change title to be neutral as to the source of regulating reserves and allows the inclusion of technically qualified DSM.	BAL-005-0		We recommend updating the acronym of (AGC) to (ARC) within the Purpose of the Standard.
415	Address comments of Xcel and FirstEnergy when the standard is revisited in the work plan.	BAL-005-0		In R17, we recommend that “common reference” be replaced with “suitable reference”. Many entities may have satellite enabled frequency measuring devices that cannot be adjusted or calibrated. The word change of “suitable” will give the entity the flexibility to ensure that their measuring device is accurate within manufacture recommendations.
420	Clarify R5 to specify the required type of transmission or backup plans when receiving regulation service from outside the BA when using non-firm service.	BAL-005-0		

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466	<p>The Commission affirms the NOPR directive and directs the ERO to incorporate a periodic review or updating of the sabotage reporting procedures and for the periodic testing of the sabotage reporting procedures. At this time, the Commission does not specify a review period as suggested by FirstEnergy and MRO and, rather, believes that the appropriate period should be determined through the ERO's Reliability Standards development process. However, the Commission directs that the ERO begin this process by considering a staggered schedule of annual testing of the procedures with modifications made when warranted formal review of the procedures every two or three years.</p>	CIP-001-1		<p>Recommend the following changes that will provide clarity to the applicable entities:</p> <p>R5. Each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and Load Serving Entity shall review and update their sabotage procedures (described in Requirements R1, R2, R3, and R4,) as specified below.</p> <p>R5.1 At least biennially, each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and Load Serving Entity shall test its procedures through the simulation of <u>for a local sabotage event within the applicable entity's area of responsibility.</u></p> <p>R5.2 At least triennially, each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and Load Serving Entity shall test its procedures through the simulation of a <u>for a multi-site-facility</u> sabotage event <u>within the applicable entity's area of responsibility</u> affecting <u>impacting</u> larger portions of the Interconnection <u>the reliability of the BES.</u></p> <p>R5.3 Within 6 months following each test above, the responsible entity shall update their procedures to address any identified failures in <u>improve</u> execution identified during the testing. [Violation Risk Factor: Lower] [Time Horizon: Long-term Planning, Operations Planning]</p> <p>R6. Each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator</p>

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				<p>Operator, and Load Serving Entity that recognizes a sabotage event on its facilities shall, without delay (but no more than <u>within</u> four hours following the recognition of the event), report that event to local Federal Bureau of Investigation (FBI) or Royal Canadian Mounted Police (RCMP) officials as appropriate and as specified in the reporting procedures required in Requirement R4. To the extent information is not yet complete, †The responsible Entity may provide a preliminary report, to be updated periodically as specified in the reporting procedures such time as a final report is completed. <i>[Violation Risk Factor: Medium]</i> <i>[Time Horizon: Real Time Operations]</i></p>

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468	"Include a requirement to report a sabotage event to the proper government authorities. Develop the language to specifically implement this directive.	CIP-001-1		R6. Recommend to change "recognizes" to "confirmed". A series of actions by the responsible entity occur once an event is discovered in either real time or upon discovery. Each event is investigated and after such investigation, it may be determined that the root cause was a malicious intent which would be considered a sabotage event. Each responsible entity always has the ability to notify local and jurisdictional authorities (FBI or RCMP) if they see fit and to inform their reporting hierarchy (RC, TOP, BA) of current system conditions thus providing situational awareness until sabotage can be determined.
470	Modify CIP-001-1 to require an applicable entity to contact appropriate governmental authorities in the event of sabotage within a specific period of time, even if it is a preliminary report.	CIP-001-1		

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470	The ERO should consider suggestions raised by commenters such as FirstEnergy and Xcel to define the specified period for reporting an incident beginning from when an event is discovered or suspected to be sabotage, and APPA's concerns regarding events at unstaffed or remote facilities, and triggering events occurring outside staffed hours at small entities	CIP-001-1		
512	Include distribution providers in the list of applicable entities.	COM-002-2	CHECK WITH HARRY BUT PROBABLY INCLUDE	
539	Address Santa Clara, FirstEnergy, and Six Cities concerns in the reliability standards development process.	COM-002-2		<p>R1.2, R2.2, R3.2, and R4.2 Recommend that "any" is replaced with "each" as this is specific to "each" real time emergency event.</p> <p>R1.2, R2.2, R3.2, and R4.2 Recommend that "situation " be replaced with "event" as this clearly defines the bright line when the Requirement is in effect.</p>

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565	Clarifies that the actual emergency plan elements, and not the “for consideration” elements of Attachment 1, should be the basis for compliance.	EOP-001-0		Attachment 1 is clearly written in R4 and the addition of “including emergencies that arise due to or concurrent with a lack of transmission capability” within R2.1 is not required since it is stated in R2.2.
573	Include all technically feasible resource options, including demand response and generation resources	EOP-002-2		R6.3 – replace “all available” with “applicable” identified and technically feasible” DSM options.
577	Ensure the TLR procedure is not used to mitigate actual IROL violations.	EOP-002-2	This was done in IRO-006, but we may need to file something explaining that.	Agree that handled in IRO-006. Remove from consideration from EOP-002
582	Address emergencies resulting not only from insufficient generation but also insufficient transmission capability, particularly as it affects the implement of the capacity and energy emergency plan.	EOP-002-2	Addressed in EOP-001, rather than EOP-002.	Agree that addressed in EOP-001. Remove from consideration from EOP-002
582	The issues raised by ISO-NE should be addressed through the Reliability Standards development process.	EOP-002-2		

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582	The Commission directs that the ERO to consider adding Measures and Levels of Non-compliance in the Reliability Standard.	EOP-002-2		
597	Require periodic drills of simulated load shedding.	EOP-003-1		<p>Recommend the following changes which will provide clarity and reduce any uncontrolled failure of the Interconnection.</p> <p>R3. Each Transmission Operator and Balancing Authority shall coordinate manual load shedding plans with <u>one of the follow:</u></p> <p>R3.1 <u>Physically connected</u> Adjacent Transmission Operators and <u>physically connected adjacent</u> Balancing Authorities <u>or, -</u></p> <p>R3.2 Regional Entities within whose electro-geographical boundaries they operate <u>or, -</u></p> <p>R3.3 Reliability Coordinator(s) associated with overseeing the operations of the Balancing Authority or Transmission Operator <u>and, -</u></p> <p>R3.4 Generator Owners within the Balancing Authority Area or Transmission Operator Area, as appropriate.</p> <p>R9. At least annually, each Transmission Operator and Balancing Authority shall test their <u>manual</u> load shedding plans, through simulation. <i>[Violation Risk Factor: Low[Time Horizon:</i></p>

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				<p><i>Long-term Planning, Operations Planning]</i></p> <p>R10. At least biennially, each Transmission Operator, Balancing Authority, Load Serving Entity, and Distribution Provider shall participate in a test of the applicable manual load shedding plans. Such test shall include 1) coordination between Load Serving Entities, Distribution Providers, and the initiator of the test, and 2) personnel deployment drills. [Violation Risk Factor: Low [Time Horizon: Long-term Planning, Operations Planning]</p> <p>Removing the word simulation provides clarity and does not impose any “simulation” as does BOT approved Standard, PER-005.</p> <p>R10, Recommend that “coordination” be replaced “communication” since communication is a present action.</p> <p>R10, Recommend deleting “2) personnel deployment drills” it is not clear what this is and in order to test, the responsible entity will have personnel on hand.</p>
601	Consider comments from APPA in the standards development process.	EOP-003-1		<p>R9 – Insert “manual” to test manual load shedding plans.</p> <p>R10 - Suggest changing biennially to “within two calendar years” as more definitive. Insert</p>

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				"manual" to the applicable manual load shedding plans.
612	Consider APPA's concern about generator operators and LSEs analyzing performance of their equipment and provide data and information on the equipment to assist others with analysis.	EOP-004-1		<p>R2, Recommend that the word "promptly" be deleted since it leads to an unbeneficial interpretation.</p> <p>R3, Recommend that the word "promptly" be deleted since it leads to an unbeneficial interpretation.</p> <p>R3.2, Recommend that this entire sub requirement be deleted. It is unclear what "additional analysis capabilities" are and why they would not be used in R3.1.</p>
615	The Commission directs the ERO to consider all comments (Xcel) in future modifications of the Reliability Standard through the Reliability Standards development process.	EOP-004-1	<p>3 issues.</p> <p>1.) What is a reportable event? Language has been drafted.</p> <p>2.) WECC's process takes more than 60 days, which would conflict with the standard? The best way to handle this is probably to ask WECC seek a variance (or change their process).</p> <p>3.) Shouldn't the standard require distribution of the report to all entities so they learn from others experiences? NERC handles said distribution.</p>	<p>R4, Recommend that a "reportable disturbance" is solely based on the presently written attachments.</p>

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616	The ERO should consider this issue (APPA) through the Reliability Standards development process	EOP-004-1		
693	Amend requirement R1.4 to require evaluation of system performance under both normal and contingency conditions by referencing TPL-001 through TPL-003.	FAC-002-0		
926	Our proposed directive is to augment the Requirement that the plans to alleviate SOL and IROL violations are assessed to ensure that the control actions can be implemented and effective within 30 minutes after a contingency.	IRO-003-2		A 30 minute time frame should not be placed on SOL's as SOL's and IROL's are fundamentally different. Incorrect application of this directive would reduce system capability and potentially introduce unneeded reliability risk as entities adjust to new unforeseen constraints imposed by changing regulatory definitions. SOL's are different than IROL as ultimately every piece of equipment has a thermal Security Operating Limit which would be its thermal rating. Since thermal ratings of equipment can have different time limits including several hours, arbitrarily placing a 30 minute time limit on SOLs would trap and strand system capability forcing entities to unnecessarily derate equipment or construct unnecessary facilities. Systems have been planned with certain longer term overload ratings (such as 2 or 7 hours) to provide system

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				<p>operators time to respond appropriately by slowly adjusting generation profiles. Enforcing fast generation profile changes could be problematic for large base load units.</p> <p>In R3, the word “contingencies as well as other events” should be replaced with “single contingency event”. The purpose of our change is to ensure consistent implementation and enforcement of the requirement. As written now, inconsistent implementation would lead to arbitrary enforcement.</p>
1249	<p>Include requirements for reporting of temperature and humidity along with the peak loads.</p>	MOD-017-0		<p>Additional Clarification is required and perhaps remove the word “forecast”:</p> <ol style="list-style-type: none"> 1. Every year a 10 year forecast is performed. Is the 10% error described in R2 against all past 10 year forecasts or the most recent? 2. Is this assuming the nominalized weather profile or is there a correction for extreme weather or uncontrollable economic downturns (For example in 2008 and 2009 unforecasted demand collapsed). 3. 10% of what? Any daily peak that is off, 10% of the month peak, or the percentages varies depending upon the planning horizon that is used. If you must keep a percentage, we recommend using 40% for near term and 50% for long term. 4. Why call it “error”? why not use the

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				<p>word "variance"?</p> <p>For R1.5, please specify what value you want for the day-ahead hourly value? Multiple values are created each day which one is the specific value that you are asking for here in R1.5?</p> <p>As long as you are revising this standard, revise "Planning Authority" to "Planning Coordinator".</p> <p>Considering Section 401.3 of the NERC Rules of Procedure, remove references to NERC and RRO.</p>
1250	<p>We agree, however, with APPA that certain types of load are not sensitive to temperature and humidity. We therefore find that the ERO should address Alcoa's concerns in its Reliability Standards development process.</p>	MOD-017-0		
1251	<p>Modify the Reliability Standard to require reporting of accuracy, error and bias of load forecasts compared to actual loads taking temperature and humidity conditions into account.</p>	MOD-017-0		

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1252	Add a Requirement that addresses correcting forecasts based on prior inaccuracies, errors and bias."	MOD-017-0		
1255	Expand the applicability to include transmission planners.	MOD-017-0		
1276	Require reporting of the accuracy, error, bias of controllable load forecasts.	MOD-019-0		<p>Additional Clarification is required and perhaps remove the word "forecast":</p> <ol style="list-style-type: none"> 1. Every year a 10 year forecast is performed. Is the 10% error described in R2 against all past 10 year forecasts or the most recent? 2. Is this assuming the nominalized weather profile or is there a correction for extreme weather or uncontrollable economic downturns (For example in 2008 and 2009 unforecasted demand collapsed). 3. 10% of what? Any daily peak that is off, 10% of the month peak, or the percentages varies depending upon the planning horizon that is used. If you must keep a percentage, we recommend using 40% for near term and 50% for long term. 4. Why call it "error"? why not use the word "variance"?

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1277	Add a new requirement to MOD-019-0 that would oblige resource planners to analyze differences between actual and forecasted demands for the five years of actual controllable load and identify what corrective actions should be taken to improve controllable load forecasting for the 10-year planning horizon.	MOD-019-0		See above
1287	Develop a modification to MOD-020-0 through the Reliability Standards development process to require reporting of the accuracy, error and bias of controllable load forecasts.	MOD-020-0		<p>Additional Clarification is required and perhaps remove the word "forecast":</p> <ol style="list-style-type: none"> 1. Every year a 10 year forecast is performed. Is the 10% error described in R2 against all past 10 year forecasts or the most recent? 2. Is this assuming the nominalized weather profile or is there a correction for extreme weather or uncontrollable economic downturns (For example in 2008 and 2009 unforecasted demand collapsed). 3. 10% of what? Any daily peak that is off, 10% of the month peak, or the percentages varies depending upon the planning horizon that is used. If you must keep a percentage, we recommend using 40% for near term and 50% for long term. 4. Why call it "error"? why not use the word "variance"?

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1300	Modify the title and purpose statement to remove the word “controllable.” We note that no commenter disagrees.	MOD-021-0		As long as you are revising this standard, revise “Planning Authority” to “Planning Coordinator”. Considering Section 401.3 of the NERC Rules of Procedure, remove reference to NERC from R3.
1469	The regional entity should develop procedures for corrective action plans.	PRC-004-1		In R1 and R3, we recommend that the owner of the protection system be responsible for the submittal of the Correction Action Plan. R1 and R3 do not require enhancements at this time.
1469	Consider ISO-NE’s suggestion that LSEs and transmission operators should be listed as applicable entities.	PRC-004-1		
1566	Consider FirstEnergy’s suggestions to revise requirement R1.3 as part of the standards development process.	PRC-022-1		

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1580	Consider adding other measures and levels of non-compliance.	TOP-001-1		
1603	Requires next-day analysis of minimum voltages at nuclear power plants auxiliary power buses.	TOP-002-2		R20 and R21 are handled in NUC-001 and should be deleted.
1603	Inform the nuclear plant operator in real-time if the auxiliary power bus voltages cannot be maintained.	TOP-002-2		R20 and R21 are handled in NUC-001 and should be deleted.
1604	Requires simulation contingencies to match what will actually happen in the field.	TOP-002-2		In R6, R7 and R8, we recommend that “(using Contingencies that match what would actually happen in the field)” be deleted and replaced with “(using Contingencies based on past or forecasted scenarios)”. Each responsible entity understand the capabilities and limitations within their respected areas.
1606	Commenters did not take issue with the proposed interpretation of the term “deliverability” as “the ability to deliver the output from generation resources to firm load without any reliability criteria violations for plausible generation dispatches.”[2] The Commission adopts this proposed interpretation. In order to ensure the necessary clarity, the term as used in	TOP-002-2		

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	Requirement R7 of TOP-002-2 should be understood in this manner.			
1608	Delete references to confidentiality in requirements R3 and R4.	TOP-002-2		
1648	Include information about the operational status of special protection systems and power system stabilizers in Attachment 1.	TOP-005-1		
1649	Delete references to confidentiality agreements and ensure critical energy infrastructure confidentiality is addressed separately from the standards development process.	TOP-005-1		

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1650	Consider FirstEnergy's modifications to Attachment 1 and ISO-NE's recommended revision to requirement R4 in the standards development process. ISO-NE recommends that the reference to "purchasing-selling entity" in Requirement R4 should be replaced with "generator owner, transmission owner, and LSE.	TOP-005-1		
1663	Clarify the meaning of "appropriate technical information" concerning protective relays.	TOP-006-1		<p>In R3, we recommend changing breaker type input and settings to "relay type, and element protected."</p> <p>In R3, we recommend that the word "identified" be placed before "operating personnel" since this will allow the responsible entity to identify who needs the technical training information.</p>
1664	Consider APPA's comments regarding missing measures in the standards development process.	TOP-006-1		
1681	Consider APPA's comments regarding missing measures in the standards development process.	TOP-008-1		

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1858	"Address reactive power requirements for LSEs on a comparable basis with purchasing-selling entities.	VAR-001-1		In R2, revise text "Such as" to "which may include but is not limited too".
1879	Include controllable load among the reactive resources to satisfy reactive requirements	VAR-001-1		In R5, revise text "Such as" to "which may include but is not limited too".
1879	Consider the comments of SoCal Edison with regard to reliability and SMA in its process for developing the technical capability requirements for using controllable load as a reactive resource in the applicable Reliability Standards	VAR-001-1	<p>SMA - supportive comment - no need to respond.</p> <p>SoCalEd - Expresses some concern with loss of load reducing gen - but we already have load shedding in the standard, so there is no more risk than what is currently in the standard. Entities are still expected to evaluate their options and implement the best choice(s) available to them.</p>	