

Project 2010-14.1 Balancing Authority Reliability-based Controls - Reserves BAL-002-2 Disturbance Control Performance - Contingency Reserve for Recovery from a Balancing Contingency Event Mapping Document

BAL-00)2-0 Manning to Proposed NER(C Reliability Standard BAL-002-2
Standard BAL-002-0 NERC Board Approved	Comment	Proposed Standard BAL-002-2
R1. Each Balancing Authority shall have access to and/or operate Contingency Reserve to respond to Disturbances. Contingency Reserve may be supplied from generation, controllable load resources, or coordinated adjustments to Interchange Schedules. R1.1. A Balancing Authority may elect to fulfill its Contingency Reserve obligations by participating as a member of a Reserve Sharing Group. In such	This Requirement has been moved into BAL-002-2 Applicability and "Additional Compliance Information" sections	Applicability 4.1. Balancing Authority 4.1.1 A Balancing Authority that is a member of Reserve Sharing Group is the Responsible Entity only in periods during which the Balancing Authority is not in active status under the applicable agreement or governing rules for the Reserve Sharing Group. 4.2. Reserve Sharing Group 1.4. Additional Compliance Information The Responsible Entity may use Contingency



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	cases, the Reserve Sharing Group		Reserve for any Balancing Contingency Event and	
	shall have the same		as required for any other applicable standards.	
	responsibilities and obligations as			
	each Balancing Authority with			
	respect to monitoring and			
	meeting the requirements of			
	Standard BAL-002.The Reliability			
	Coordinator and Planning			
	Authority shall each establish a			
	set of inter-regional and intra-			
	regional Transfer Capabilities			
	that is consistent with its current			
	Transfer Capability Methodology.			
R2.	Each Regional Reliability	This Requirement has been	This requirement falls under the Paragraph 81 rules. This	
	Organization, sub-Regional	removed from BAL-002-2	requirement defines a commercial agreement between the BA	
	Reliability Organization or Reserve		involved in the RSG. This requirement does not provide for an	
	Sharing Group shall specify its		reliability outcome and if violated would not cause separation,	
	Contingency Reserve policies,		instability or cascading outages.	
	including:			
	R2.1. The minimum reserve			
	requirement for the group.			
	R2.2. Its allocation among			
	members.			



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R2.3. The permissible mix of Operating Reserve – Spinning and Operating Reserve – Supplemental that may be included in Contingency Reserve.		
R2.4. The procedure for applying Contingency Reserve in practice.		
R2.5. The limitations, if any, upon the amount of interruptible load that may be included.		
R2.6. The same portion of resource capacity (e.g. reserves from jointly owned generation) shall not be counted more than once as Contingency Reserve by multiple Balancing Authorities.		



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R3.	Each Balancing Authority or Reserve Sharing Group shall activate sufficient Contingency Reserve to comply with the DCS. R3.1. As a minimum, the Balancing Authority or Reserve Sharing Group shall carry at least enough Contingency Reserve to cover the most severe single contingency. All Balancing Authorities and Reserve Sharing Groups shall review, no less frequently than annually, their probable contingencies to determine	This Requirement has been moved into BAL-002-2 Requirements R1 and Requirement R2	BAL-002-2 Requirement R1 1. The Responsible Entity experiencing a Reportable Balancing Contingency Event shall, within the Contingency Event Recovery Period, return its ACE to at least: [Violation Risk Factor: Medium][Time Horizon: Real-time Operations] • Zero, (if its Pre-Reporting Contingency Event ACE Value was positive or equal to zero): o less the sum of the magnitudes of all subsequent Balancing Contingency Events that occur prior to that value of Reporting ACE within the Contingency Event Recovery Period, and o Further reduced by the magnitude of the difference between (i) the Responsible Entity's		
	their prospective most severe single contingencies.		Most Severe Single Contingency (MSSC) and (ii) the sum of the magnitudes of the Reportable Balancing Contingency Event and all previous Balancing Contingency Events that have not completed their Contingency Reserve Restoration Period when the sum referenced in		



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		clause (ii) of this bullet is greater than MSSC, Or, Its Pre-Reporting Contingency Event ACE Value, (if its Pre-Reporting Contingency Event ACE Value was negative), oless the sum of the magnitudes of all subsequent Balancing Contingency Events that occur prior to that value of Reporting ACE within the Contingency Event Recovery Period, and		
		 Further reduced by the magnitude of the difference between (i) the Responsible Entity's Most Severe Single Contingency (MSSC) and (ii) the sum of the magnitudes of the Reportable Balancing Contingency Event and all previous Balancing Contingency Events that have not completed their Contingency Reserve Restoration Period when the sum referenced in clause (ii) of this bullet is greater than MSSC. 1.1. The required reporting form is CR Form 1. 1.2. This requirement (in its entirety) does not apply when the Responsible Entity experiencing a 		



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		Reportable Balancing Contingency Event is
		experiencing an Energy Emergency Alert Level 2 or Level 3.
		1. Except when an Energy Emergency Alert Level 2 or 3 is in effect, the Responsible Entity experiencing a Reportable
		Balancing Contingency Event shall demonstrate that
		within the Contingency Event Recovery Period the
		Responsible Entity returned its ACE to:
		 Zero, (if its Pre Reportable Contingency Event ACE
		Value was positive or equal to zero):
		 less the sum of the magnitudes of all
		subsequent Balancing Contingency Events that
		occur within the Contingency Event Recovery
		Period, and
		 further reduced by the magnitude of the
		difference between (i) the Responsible Entity's
		Most Severe Single Contingency (MSSC) and (ii)
		the sum of the magnitudes of the Reportable
		Balancing Contingency Event and all previous Balancing Contingency Events that have not
		completed their Contingency Event Restoration
		Period when the sum referenced in clause (ii)
		of this bullet is greater than MSSC,



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NERC BOATO Approved		Or, ■ Its Pre Reportable Contingency Event ACE Value, (if its Pre Reportable Contingency Event ACE Value was negative): □ Less the sum of the magnitude of all subsequent Balancing Contingency Events that occur within the Contingency Event Recovery Period, and □ Further reduced by the magnitude of the difference between (i) the Responsible Entity's Most Severe Single Contingency (MSSC) and	
		(ii) the sum of the magnitudes of the Reportable Balancing Contingency Event and all previous Balancing Contingency Events that have not completed their Contingency Event Restoration Period when the sum referenced in clause (ii) of this bullet is greater than MSSC.	
		BAL-001-2 Requirement R2 2. Except during the Contingency Event Recovery Period	



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			and Contingency Reserve Restoration Period, or during an Energy Emergency Alert Level 2 or Level 3, each Responsible Entity shall maintain an amount of Contingency Reserve at least equal to its Most Severe Single Contingency.	
R4.	A Balancing Authority or Reserve Sharing Group shall meet the Disturbance Recovery Criterion within the Disturbance Recovery Period for 100% of Reportable Disturbances. The Disturbance Recovery Criterion is:	This Requirement has been moved into BAL-002-2 Requirement R1 and into the "Contingency Event Recovery Period" and "Contingency Reserve Restoration Period" definitions.	BAL-002-0 Requirement R4 and R4.1 to BAL-002-2 Requirement R1 1. The Responsible Entity experiencing a Reportable Balancing Contingency Event shall, within the Contingency Event Recovery Period, return its ACE to at least: [Violation Risk Factor: Medium][Time Horizon: Real-time Operations] • Zero (if its Pre-Reporting Contingency Event ACE)	
	R4.1. A Balancing Authority shall return its ACE to zero if its ACE just prior to the Reportable Disturbance was positive or equal to zero. For negative initial ACE values just prior to the Disturbance, the Balancing Authority shall return ACE		 Zero, (if its Pre-Reporting Contingency Event ACE Value was positive or equal to zero): less the sum of the magnitudes of all subsequent Balancing Contingency Events that occur prior to that value of Reporting ACE within the Contingency Event Recovery Period, and Further reduced by the magnitude of the difference between (i) the Responsible Entity's 	



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	Comment	Most Severe Single Contingency (MSSC) and (ii) the sum of the magnitudes of the Reportable Balancing Contingency Event and all previous Balancing Contingency Events that have not completed their Contingency Reserve Restoration Period when the sum referenced in clause (ii) of this bullet is greater than MSSC, Or, Its Pre-Reporting Contingency Event ACE Value, (if its Pre-Reporting Contingency Event ACE Value was negative), less the sum of the magnitudes of all subsequent Balancing Contingency Events that occur prior to that value of Reporting ACE within the Contingency Event Recovery Period, and Further reduced by the magnitude of the difference between (i) the Responsible Entity's Most Severe Single Contingency (MSSC) and (ii)	
		difference between (i) the Responsible Entity	



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		Restoration Period when the sum referenced in	
		clause (ii) of this bullet is greater than MSSC.	
		1.1. The required reporting form is CR Form 1.	
		1.2. This requirement (in its entirety) does not apply	
		when the Responsible Entity experiencing a	
		Reportable Balancing Contingency Event is	
		experiencing an Energy Emergency Alert Level 2 or	
		<u>Level 3.</u>	
		1. Except when an Energy Emergency Alert Level 2 or 3 is in	
		effect, the Responsible Entity experiencing a Reportable	
		Balancing Contingency Event shall demonstrate that	
		within the Contingency Event Recovery Period the	
		Responsible Entity returned its ACE to:	
		 Zero, (if its Pre Reportable Contingency Event ACE 	
		Value was positive or equal to zero):	
		O less the sum of the magnitudes of all subsequent	
		Balancing Contingency Events that occur within the	
		Contingency Event Recovery Period, and	
		O further reduced by the magnitude of the	
		difference between (i) the Responsible Entity's	
		Most Severe Single Contingency (MSSC) and (ii) the	
		sum of the magnitudes of the Reportable	



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		Balancing Contingency Event and all previous
		Balancing Contingency Events that have not
		completed their Contingency Event Restoration
		Period when the sum referenced in clause (ii) of
		this bullet is greater than MSSC,
		Or,
		• Its Pre-Reportable Contingency Event ACE Value, (if its
		Pre-Reportable Contingency Event ACE Value was
		negative):
		O Less the sum of the magnitude of all subsequent
		Balancing Contingency Events that occur within the
		Contingency Event Recovery Period, and
		O Further reduced by the magnitude of the
		difference between (i) the Responsible Entity's
		Most Severe Single Contingency (MSSC) and (ii) the
		sum of the magnitudes of the Reportable
		Balancing Contingency Event and all previous
		Balancing Contingency Events that have not
		completed their Contingency Event Restoration
		Period when the sum referenced in clause (ii) of
		this bullet is greater than MSSC.

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		Contingency Event Recovery Period	
		A period beginning at the time that the resource output begins to decline within the first oneminute interval that defines a Balancing Contingency Event, and extends for fifteen minutes thereafter.	
		Contingency Reserve Restoration Period:	
		A period not exceeding 90 minutes following the end of the Contingency Event Recovery Period.	
R5. Each Reserve Sharing Group shall	This Requirement has been	BAL-002-2	
comply with the DCS. A Reserve Sharing Group shall be considered in a	moved into BAL-002-2	Requirement R1	
Reportable Disturbance condition	Requirement R1 and Reserve Sharing Group	1. The Responsible Entity experiencing a Reportable	
whenever a group member has	Reporting ACE	Balancing Contingency Event shall, within the	
experienced a Reportable Disturbance		Contingency Event Recovery Period, return its ACE to at	
and calls for the activation of		least: [Violation Risk Factor: Medium][Time Horizon:	
Contingency Reserves from one or more		<u>Real-time Operations]</u>	
other group members. (If a group member has experienced a Reportable		 Zero, (if its Pre-Reporting Contingency Event ACE 	
Disturbance but does not call for reserve		Value was positive or equal to zero):	
activation from other members of the		 less the sum of the magnitudes of all 	
Reserve Sharing Group, then that		subsequent Balancing Contingency Events that	
member shall report as a single		occur prior to that value of Reporting ACE	



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Balancing Authority.) Compliance may be demonstrated by either of the following two methods: R5.1. The Reserve Sharing Group		within the Contingency Event Recovery Period, and Further reduced by the magnitude of the difference between (i) the Responsible Entity's Most Severe Single Contingency (MSSC) and (ii)	
reviews group ACE (or equivalent) and demonstrates compliance to the DCS. To be in compliance, the group ACE (or its equivalent) must meet the Disturbance Recovery Criterion		the sum of the magnitudes of the Reportable Balancing Contingency Event and all previous Balancing Contingency Events that have not completed their Contingency Reserve Restoration Period when the sum referenced in clause (ii) of this bullet is greater than MSSC,	
after the schedule change(s) related to reserve sharing have been fully implemented, and within the Disturbance Recovery Period.		 Or, Its Pre-Reporting Contingency Event ACE Value, (if its Pre-Reporting Contingency Event ACE Value was negative), 	
or		 less the sum of the magnitudes of all subsequent Balancing Contingency Events that 	
R5.2. The Reserve Sharing Group reviews each member's ACE in response to the activation of		occur prior to that value of Reporting ACE within the Contingency Event Recovery Period, and	
reserves. To be in compliance, a member's ACE (or its equivalent) must meet the Disturbance		 Further reduced by the magnitude of the difference between (i) the Responsible Entity's Most Severe Single Contingency (MSSC) and (ii) 	



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Recovery Criterion after the schedule change(s) related to reserve sharing have been fully implemented, and within the Disturbance Recovery Period.		the sum of the magnitudes of the Reportable Balancing Contingency Event and all previous Balancing Contingency Events that have not completed their Contingency Reserve Restoration Period when the sum referenced in clause (ii) of this bullet is greater than MSSC. 1.1. The required reporting form is CR Form 1. 1.2. This requirement (in its entirety) does not apply when the Responsible Entity experiencing a Reportable Balancing Contingency Event is experiencing an Energy Emergency Alert Level 2 or Level 3. 2. Except when an Energy Emergency Alert Level 2 or 3 is in effect, the Responsible Entity experiencing a Reportable Balancing Contingency Event shall demonstrate that within the Contingency Event Recovery Period the Responsible Entity returned its ACE to: 2 Zero, (if its Pre-Reportable Contingency Event ACE Value was positive or equal to zero): Uess the sum of the magnitudes of all subsequent Balancing Contingency Events that occur within the Contingency Event Recovery	



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		Period, and	
		 further reduced by the magnitude of the difference between (i) the Responsible Entity's Most Severe Single Contingency (MSSC) and (ii) the sum of the magnitudes of the Reportable Balancing Contingency Event and all previous Balancing Contingency Events that have not completed their Contingency Event Restoration 	
		Period when the sum referenced in clause (ii) of this bullet is greater than MSSC, Or,	
		Its Pre Reportable Contingency Event ACE Value, (if its Pre-Reportable Contingency Event ACE Value was negative):	
		 Less the sum of the magnitude of all subsequent Balancing Contingency Events tha occur within the Contingency Event Recovery Period, and 	
		 Further reduced by the magnitude of the difference between (i) the Responsible Entity' Most Severe Single Contingency (MSSC) and (ii) the sum of the magnitudes of the 	
		Reportable Balancing Contingency Event and	



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	•		all previous Balancing Contingency Events that have not completed their Contingency Event Restoration Period when the sum referenced in clause (ii) of this bullet is greater than MSSC.
			Reserve Sharing Group Reporting ACE At any given time of measurement for the applicable Reserve Sharing Group, the algebraic sum of the ACEs (as calculated at such time of measurement) of all of the Balancing Authorities that make up the Reserve Sharing Group.
R6.	A Balancing Authority or Reserve Sharing Group shall fully restore its Contingency Reserves within the Contingency Reserve Restoration Period for its Interconnection.	This Requirement has been moved into the BAL-002-2 Requirement R1 and "Contingency Event Restoration Period" definition	Requirement R1 1. The Responsible Entity experiencing a Reportable Balancing Contingency Event shall, within the Contingency Event Recovery Period, return its ACE to at least: [Violation Risk Factor: Medium][Time Horizon:
	R6.1. The Contingency Reserve Restoration Period begins at		 Real-time Operations] Zero, (if its Pre-Reporting Contingency Event ACE)



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the end of the Disturbance		Value was positive or equal to zero):
Recovery Period.		 less the sum of the magnitudes of all
		subsequent Balancing Contingency Events that
R6.2. The default Contingency		occur prior to that value of Reporting ACE
Reserve Restoration Period		within the Contingency Event Recovery Period,
is 90 minutes.		<u>and</u>
		 Further reduced by the magnitude of the
		difference between (i) the Responsible Entity's
		Most Severe Single Contingency (MSSC) and (ii)
		the sum of the magnitudes of the Reportable
		Balancing Contingency Event and all previous
		Balancing Contingency Events that have not
		completed their Contingency Reserve
		Restoration Period when the sum referenced in clause (ii) of this bullet is greater than MSSC,
		<u>Or,</u>
		 Its Pre-Reporting Contingency Event ACE Value, (if
		its Pre-Reporting Contingency Event ACE Value was
		negative),
		 less the sum of the magnitudes of all
		subsequent Balancing Contingency Events that
		occur prior to that value of Reporting ACE
		within the Contingency Event Recovery Period,



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Standard BAL-002-0		and Further reduced by the magnitude of the difference between (i) the Responsible Entity's Most Severe Single Contingency (MSSC) and (ii) the sum of the magnitudes of the Reportable Balancing Contingency Event and all previous Balancing Contingency Events that have not completed their Contingency Reserve Restoration Period when the sum referenced in clause (ii) of this bullet is greater than MSSC. 1.1. The required reporting form is CR Form 1. 1.2. This requirement (in its entirety) does not apply when the Responsible Entity experiencing a Reportable Balancing Contingency Event is
		experiencing an Energy Emergency Alert Level 2 or Level 3.
		1. Except when an Energy Emergency Alert Level 2 or 3 is in effect, the Responsible Entity experiencing a Reportable Balancing Contingency Event shall demonstrate that
		within the Contingency Event Shair demonstrate that within the Contingency Event Recovery Period the Responsible Entity returned its ACE to:
		 Zero, (if its Pre-Reportable Contingency Event ACE



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		Value was positive or equal to zero):
		 less the sum of the magnitudes of all
		subsequent Balancing Contingency Events that
		occur within the Contingency Event Recovery
		Period, and
		 further reduced by the magnitude of the
		difference between (i) the Responsible Entity's
		Most Severe Single Contingency (MSSC) and (ii)
		the sum of the magnitudes of the Reportable
		Balancing Contingency Event and all previous
		Balancing Contingency Events that have not
		completed their Contingency Event Restoration
		Period when the sum referenced in clause (ii)
		of this bullet is greater than MSSC,
		Or,
		 Its Pre-Reportable Contingency Event ACE Value, (if
		its Pre-Reportable Contingency Event ACE Value was
		negative):
		 Less the sum of the magnitude of all
		subsequent Balancing Contingency Events that
		occur within the Contingency Event Recovery
		Period, and



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		Further reduced by the magnitude of the difference between (i) the Responsible Entity's Most Severe Single Contingency (MSSC) and (ii) the sum of the magnitudes of the Reportable Balancing Contingency Event and all previous Balancing Contingency Events that have not completed their Contingency Event Restoration Period when the sum referenced in clause (ii) of this bullet is greater than MSSC.
		Contingency Reserve Restoration Period: A period not exceeding 90 minutes following the end of the Contingency Event Recovery Period.