Background

The Determine Facility Ratings Standard Drafting Team thanks all those who submitted comments with the posting of the definition of 'contingency' for FAC-010 and FAC-011. After careful review and consideration of all comments received, the drafting team has removed the proposed definition of 'contingency' from FAC-010 and is asking the Standards Authorization Committee for approval to post FAC-010 and FAC-011 and the revised Implementation Plan for a 30-day review period, prior to ballot.

The drafting team posted its proposed definition of 'contingency' for comment from December 1, 2005 through January 17, 2006. The drafting team received 23 sets of comments from 80 commenters representing 55 different entities in six of the nine industry segments. The comments can be viewed in their original format at:

ftp://www.nerc.com/pub/sys/all_updl/standards/sar/Changed_Definition_of_Contingency_Comments_01Dec05.pdf

The comments indicate there is no consensus on the revised definition. Many commenters suggested that the definition of 'contingency' that was approved with Version 0 is preferable, and the drafting team has decided to move forward with that definition.

All of the comments received by the drafting team are contained in the attached document. Some commenters addressed areas of the standards that have already reached stakeholder consensus, and are outside the scope of the clarification the drafting team was attempting to achieve with this posting. These comments were primarily duplications of comments already considered by the drafting team. Several commenters suggested that the standard be revised to require consideration of all credible multiple contingencies in the development of system operating limits.

During the development of FAC-010, the drafting team did ask stakeholders for feedback on the consideration of credible multiple contingencies. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of only first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do not form a consistent subset of contingencies categorized as level C considerations across all regions. The wording in the posted draft of the standard provides:

- An enabler for regions to have credible multiple contingencies evaluated in the determination of system operating limits and for this list for contingencies to be less that the full set of Table 1 category C Contingencies. The list could have no entries or it could be as specific as detailing only certain contingencies at certain buses.
- A reduction in the need for a series of regional differences to be embedded in the standard. Similarly, there is a reduced need for those responsible for establishing the methodology for the calculation of system operating limits or those responsible for the determination of limits to have to be aware of regional standards and to develop methodologies consistent with both the NERC and the regional standard.
- An enabler for the regions to require different contingencies to be considered for planning and operating studies and for the criteria for evaluation of the contingencies to be different for each.
- While not a direct factor, this wording reflects current reliability practice and ensures that it can continue.

Note that there are no criteria for the establishment of SOLs used in the operating horizon, so developing a standard that does establish criteria is a step forward, not a reduction in reliability. The language in the proposed FAC-010-1 represents a compromise aimed at reaching the best consensus.

If you feel that the drafting team overlooked your comments, 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 Director of Standards, Gerry Cauley at 609-452-8060 or at gerry.cauley@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.
The Determine Facility Ratings drafting team wishes to thank all those who submitted comments on the definition of Contingency.

Commenters:

Commenter	Organization	Industry Segment								
		1	2	3	4	5	6	7	8	9
Darrell Pace (G1)	Alabama Electric Cooperative	x								
William J. Smith	Allegheny Power	x								
Ken Goldsmith (G7)	Alliant Energy		x							
John E. Sullivan	Ameren	x								
Peter Burke	ATC	x								
Dave Rudolph (G7)	BEPC		x							
Lisa Szot (G4)	CAISO		x							
Alan Gale	City of Tallahassee					x				
Brian Moss (G1)	Duke Power Co.	x								
Shamir Ladhani (G3)	ENMAX Power Corporation	x								
Joe Seabrook (G3)	ENMAX Power Corporation	x								
Kham Vongkhamchanh (G1)	Entergy	x								
H. Steven Myers	ERCOT		x							
Bill Bojorquez (G8)	ERCOT		x							
Sam Jones (G4)	ERCOT		x							
Gene Way (G6)	Florida Municipal PowerAgency			x						
Eric Senkowicz (G6)	FRCC		x							
Linda Campbell (G6)	FRCC		x							
Roger Westphal (G6)	Gainesville Regional Utilities			x						
Dick Pursley (G7)	GRE		x							
David Kiguel (G2)	Hydro One Networks	x								
Roger Champagne (I) (G2)	Hydro-Quebec TransEnergie	x								
Ron Falsetti	IESO		x							
Anita Lee (G4)	IESO		x							
Ron Falsetti (G4)	IESO		x							
Kathleen Goodman (I) (G2)	ISO-NE		x							
Pete Brandien (G4)	ISO-NE		x							
Bill Shemley (G2)	ISO-NE		x							
Gary Baker (G6)	JEA	x								
Dennis Florom (G7)	LES		x							
John Horakh	MAAC		x							
Robert Coish (G7)	MHEB		x							
Bill Phillips (G4)	MISO		x							
Terry Bilke (G7)	MISO		x							
Tom Mielnik (G7)	MRO		x							
Joe Knight (G7)	MRO		x							

Commenter	Organization	Industry Segment								
		1	2	3	4	5	6	7	8	9
Peter Lebro (G2)	National Grid	x								
Alden Briggs (G2)	New Brunswick ISO		x							
Ralph Rufrano (G2)	New York Power Authority		x							
Murale Gopinathan	Northeast Utilities	x								
Chuck Stigers	NorthWestern Energy	x								
David Little (G2)	Nova Scotia Power	x								
Guy V. Zito (G2)	NPCC		x							
Jerry Mosier (G2)	NPCC		x							
Brian Hogue (G2)	NPCC		x							
Al Boesch (G7)	NPPD		x							
Mike Calimano (I) (G4)	NYISO		x							
Alan Adamson	NYSRC		x							
Todd Gosnell (G7)	OPPD		x							
Bill Rouse (G6)	Orlando Utilities Commission	x								
Chifong Thomas (G3)	PG&E	x								
James K. Robinson	PPL Electric Utilities	x								
Eric Grant (G6)	Progress Energy - Florida	x								
Preston Pierce (G6)	Progress Energy - Florida	x								
Art Brown (G1)	SCPSA	x								
Pat Huntley (G1)	SERC		x							
Dilip Mahendra (G3)	SMUD	X								
Clay Young (G1)	South Carolina Electric & Gas Co			x						
Dana Cabbell (G3)	Southern California Edison	x								
Marc M. Butts (G5)	Southern Co Services	x								
Jim Viikinsalo (G5)	Southern Co Services	x								
Jim Busbin (G5)	Southern Co Services	x								
Wade Pugh (G5)	Southern Co Services	x								
Steve Corbin (G5)	Southern Co Services	x								
Roman Carter (G5)	Southern Co Services				x					
Terry Crawley (G5)	Southern Co Services					x				
Roger Green (G5)	Southern Co Services						x			
Bob Jones (G1)	Southern Co Services	x								
Wayne Guttormson (G7)	SPC		x							
Charles Yeung (G4)	SPP		x							
Ron Donahey (G6)	Tampa Electric	x								
Randall Hunt (G3)	TANC	x								
Peter Mackin (G3)	TANC	x								

Commenter	Organization	Industry Segment								
		1	2	3	4	5	6	7	8	9
Travis Sykes (G1)	TVA	x								
Al Corbet	TVA	x								
Kathleen A. Davis	TVA	x								
Mariam Mirzadeh (G3)	WAPA	x								
Darrick Moe (G7)	WAPA		x							
Jim Maenner (G7)	WPSC		x							
Pam Oreschnick (G7)	XEL		x							

"G" indicates comments submitted by one of the groups listed below

"I" indicates the individual submitted a set of comments as an individual in addition to comments submitted as part of a group.

G1 – SERC EC Planning Standards Subcommittee
G2 – NPCC CP9
G3 – WECC-Technical Studies Subcommittee
G4 – ISO/RTO Council
G5 – Southern Company Services
G6 – Florida Reliability Coordinating Council
G7 – Midwest Reliability Organization
G8 – NERC Standards Evaluation Subcommittee

1. Do you agree with the proposed change to the definition of 'Contingency'?

Summary Consideration: Stakeholders did not support the proposed definition of contingency, and so many stakeholders indicated a preference for the version of the definition that was approved with Version 0, that the drafting team has removed the proposed definition from the standard. The drafting team will recommend that the standard move forward to balloting. The definition of contingency that was approved with Version 0 is:

> The unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element.

Note that some commenters submitted recommendations that went beyond commenting on the definition of contingency. The drafting team believes it has already reached stakeholder consensus on the technical content of the requirements, measures and levels of non-compliance and did not solicit comments on the technical content of the standard. Most of the comments submitted by stakeholders are duplications of comments already submitted and already considered by the drafting team.

Several commenters suggested that the standard be revised to require consideration of all credible multiple contingencies in the development of system operating limits. During the development of FAC-010, the drafting team did ask stakeholders for feedback on the consideration of credible multiple contingencies. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of **only** first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do not form a consistent subset of contingencies categorized as level C considerations across all regions. The wording in the posted draft of the standard provides:

- An enabler for regions to have credible multiple contingencies evaluated in the determination of system operating limits and for this list for contingencies to be less that the full set of Table 1 category C Contingencies. The list could have no entries or it could be as specific as detailing only certain contingencies at certain buses.
- A reduction in the need for a series of regional differences to be embedded in the standard. Similarly, there is a reduced need for those responsible for establishing the methodology for the calculation of system operating limits or those responsible for the determination of limits to have to be aware of regional standards and to develop methodologies consistent with both the NERC and the regional standard.
- An enabler for the regions to require different contingencies to be considered for planning and operating studies and for the criteria for evaluation of the contingencies to be different for each.
- While not a direct factor, this wording reflects current reliability practice and ensures that it can continue.

Note that there are no criteria for the establishment of SOLs used in the operating horizon, so developing a standard that does establish criteria is a step **forward**, not a reduction in reliability. The language in the proposed FAC-010-1 represents a compromise aimed at reaching the best consensus.

Commenter	Yes	No	Comment
City of Tallahassee Alan Gale		✓	In the responses to vote comments, the Drafting Team wrote; "During the development of this standard, the drafting team asked stakeholders to consider whether credible multiple contingencies should be addressed in FAC-010. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of only first contingencies." The proposed definition is still treating the results of any event as a single contingency, no matter the severity, or the number of elements removed by that event, which contradicts the Drafting Teams statement. It is clear by the response to the vote comments that this is not the drafting team's intent, nor is it the desire of the

Commenter	Yes	No	Comment
			industry. The proposed definition is not "clear and unambiguous". It is muddying up the waters. I agree that a contingency is "the unexpected loss", but it is not "one or more", it is only one. Table 1 of TPL-002 and TPL-003 refer to Category C and D "events" resulting in the loss of more than 1 element. These are commonly referred to as "multiple contingency events". They are also refered to as such in R4.5. This view is further supported by the way it is used in R4.2, R4.3 and R4.5. I believe it is necessary to treat the results of the contingency separate from the cause of the contingency. To more accurately reflect the current use of the terminology deeply embedded in the industry I propose the following definitions: CONTINGENCY - The unexpected failure or outage of a single system component, such as a generator, transmission line, circuit breaker, switch, or other element. EVENT - The sequence of system response and/or outages caused by one or more CONTINGENCIES.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards.			
WECC Technical Studies Subcommittee		✓	The WECC Techanical Studies Subcommittee (TSS) prefers the old definition. WECC understands the term "event" could lead to the loss of an element due to electrical AND non-electrical reasons such as lightning, fires, airplanes, wind, etc. The proposed change could introduce confusion. For example, an unexpected loss of one Bulk Electric System Facility caused by a single initiating failure or outage could be interpreted as an N-2 contingency, or an N-1-1 contingency, and not an N-1 contingency as intended. The term "event" is used throughout the NERC Reliability Standards and in the NERC performance table. The WECC TSS suggests that definitions be developed for both single and multiple contingencies since both are referred to in the standard. WECC has individual definitions for single and multiple contingency as follows: Single Contingency - The loss of a single system element under any operating condition or anticipated mode of operation. Multiple Contingency Outages - The loss of two or more system elements caused by unrelated events or by a single low probability event occurring within a time interval too short (less than ten minutes) to permit system adjustment in response to any of the losses.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards.			
SERC EC Planning Standards Subcommittee		✓	The SERC PSS votes no due to our concern that the proposed definition of the term [contingency] is not consistent with the intended use of the term in these and other standards. For example, the use of the term in R4.2 of FAC-010-1 appears to be more in line with the original Version 0 definition.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the			

Commenter	Yes	No	Comment
standards forward using the definition of contingency that was approved with Version 0 standards.			
PPL Electric Utilities Jim Robinson		✓	A new item should be added to paragraph R4.2 "R4.2.4 For a stability limited system condition, a single line to ground fault plus a failure of a single component, which is challenged to operate, should not lead to cascading of system elements." Examples of "a failure of single component, which is challenged to operate, " would include but not be limited to 1) a stuck circuit breaker, or 2) failure of a high speed protective relay, which when challenged fails to operate properly.
Response: The existing standard includes the following language in a footnote to Requirement 4.2 to indicate that the list of contingencies identified in the standard is not intended to be all inclusive: The Contingencies identified in FAC-010 R4.2.1 through R4.2.3 are the minimum contingencies that must be studied but are not necessarily the only Contingencies that should be studied.			
Pepco Holdings John Horakh		✓	What I don't like about the changed definition: UNEXPECTED - A contingency need not be unexpected, an occasional fault should be expected LOSS - The loss of a facility is not the contingency, the initiating event is. -- also -- A loss sounds like the permanent destruction of a facility SINGLE - A contingency may be two or more related events OUTAGE - An outage is not an initiating event, it is the result of an initiating event. Here's my suggested definition, totally reworded: Contingency: An initiating fault, failure , unplanned event or device operation, or a combination thereof, causing the outage of one or more Bulk Electric System Facilities. I believe this definition is more logical and that it fits in with Standards TPL-002-0, TPL-003-0, TPL-004-0 and the included Table I for each.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards.			
NPCC CP9 Reliability Standards working Group		✓	NPCC participating members prefer the approved Version 0 definition that appears in the approved and posted NERC Glossary of Terms which corresponds to the N-1 Criterion. The definition is as follows; The unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element. Change of the definition during the development of a Reliability Standard without reviewing other standards for consistency is potentially problematic.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards. The drafting team will recommend to the Director, Standards and the SAC that a process be developed to address changes to already approved definitions.			

Commenter	Yes	No	Comment
Hydro-Québec–TransÉnergie Roger Champagne		✓	Hydro-Québec TransÉnergie (HQTÉ) prefers the Version 0 definition that appears in the approved and posted NERC Glossary of Terms which corresponds to the N-1 Criterion. The definition is: "The unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element." Change of the definition during the development of a Reliability Standard without reviewing other standards for consistency is potentially problematic. Additionally, a revision to the definition 'contingency' only, fails to fully capture concerns previously raised with this standard. Specifically it does not require consideration of credible multiple element contingencies as previously commented by the industry. We recognize that the Standards Drafting Team has included a provision in section R4.5 which permits a Region to establish criteria requiring consideration of credible multiple element contingencies. However, we believe that reliability standards recognizing this class of contingencies should be maintained in all of North America, not only certain Regions. A weakening of reliability standards in any Region could adversely affect the reliability in another Region, even if the other Region has adopted more stringent standards.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards. The drafting team will recommend to the Director, Standards and the SAC that a process be developed to address changes to already approved definitions. During the development of FAC-010, the drafting team did ask stakeholders for feedback on the consideration of credible multiple contingencies. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of **only** first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do not form a consistent subset of contingencies categorized as level C considerations across all regions. The wording in the posted draft of the standard provides: – An enabler for regions to have credible multiple contingencies evaluated in the determination of system operating limits and for this list for contingencies to be less that the full set of Table 1 category C Contingencies. The list could have no entries or it could be as specific as detailing only certain contingencies at certain buses. – A reduction in the need for a series of regional differences to be embedded in the standard. Similarly, there is a reduced need for those responsible for establishing the methodology for the calculation of system operating limits or those responsible for the determination of limits to have to be aware of regional standards and to develop methodologies consistent with both the NERC and the regional standard. – An enabler for the regions to require different contingencies to be considered for planning and operating studies and for the criteria for evaluation of the contingencies to be different for each. – While not a direct factor, this wording reflects current reliability practice and ensures that it can continue. Note that there are no criteria for the establishment of SOLs used in the operating horizon, so developing a standard that does establish criteria is a step **forward**, not a reduction in reliability. The language in the proposed FAC-010-1 represents a compromise aimed at reaching the best consensus.			
New York ISO Michael Calimano		✓	1) Change of the definition during the development of a Reliability Standard without reviewing other standards for consistency is potentially problematic.

Commenter	Yes	No	Comment
			The NYISO proposes that the approved Version 0 definition that appears in the approved and posted NERC Glossary of Terms be retained. The definition is as follows; "The unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element." The NYISO appreciates the need to modify the definition; however it should be done as a change to the Glossary of Terms with consideration give to all approved standards. 2) It needs to be clarified whether the exclusion of "loss of an element without a fault" from Requirement 4.2.2 is deliberate and its rationale, or include this requirement in R4.2.2. Standard FAC-010-1, requirement R4.2.2 is not totally consistent with standard TPL-002-0. TPL-002-0 requires that category "B" contingencies as listed in Table1 be observed. Table 1 of the standard includes requirements stated in FAC-010-1 R4.2.2 and 4.2.3, but also includes the "Loss of an Element without a Fault", as a requirement to be met. FAC-010-1 as currently written would appear to exclude the loss of any single bus or an inadvertent breaker opening. These are single contingencies that can remove additional bulk electricity system (BES) facilities or reconfigure the BES to the point where the BES could be in a cascading situation. It needs to be clarified whether the exclusion of a single bus or an inadvertent breaker operation from Requirement R4.2.2 was deliberate, or was it just an oversight. 3) Revise R4.2 to "Following the single Contingencies identified in FAC-010 Requirement 4.2.1 through Requirement 4.2.3, the system shall demonstrate transient, dynamic and voltage stability; all Facilities shall be operating within their Facility Ratings and within their applicable Normal and Emergency thermal ratings, voltage and stability limits, and Cascading Outages or uncontrolled separation shall not occur." Standard FAC-010-1 R4.2 states: "Following the single Contingencies identified in Requirements 4.2.1 through Requirements 4.2.3, the system shall demonstrate transient, dynamic and voltage stability; all Facilities shall be operating within their Facility Ratings and within their thermal, voltage and stability limits; and Cascading Outages or uncontrolled separation shall not occur". It does not make provision for respecting the applicable ratings as stipulated in Table 1 of TPL-002-1 The NYISO appreciates the opportunity to provide these comments and looks forward to participating further in the standards development process.

Response:

The drafting team will recommend to the Director, Standards and the SAC that a process be developed to address changes to already approved definitions.

Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards.

The existing standard includes the following language in a footnote to Requirement 4.2 to indicate that the list of contingencies identified in the standard is not intended to be all inclusive:

The Contingencies identified in FAC-010 R4.2.1 through R4.2.3 are the minimum contingencies

Commenter	Yes	No	Comment
that must be studied but are not necessarily the only Contingencies that should be studied.			
ISO New England Kathleen Goodman		✓	ISO-NE prefers the approved Version 0 definition that appears in the approved and posted NERC Glossary of Terms which corresponds to the N-1 Criterion. The definition is: "The unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element." Change of the definition during the development of a Reliability Standard without reviewing other standards for consistency is potentially problematic. Additionally, a revision to the definition 'contingency' only, fails to fully capture concerns previously raised with this standard; specifically it does not require consideration of credible multiple element contingencies as previously commented by the industry. We recognize that the Standards Drafting Team has included a provision in section R4.5 which permits a Region to establish criteria requiring consideration of credible multiple element contingencies. However, we believe that reliability standards recognizing this class of contingencies should be maintained in all of North America, not only certain Regions. A weakening of reliability standards in any Region could adversely affect the reliability in another Region, even if the other Region has adopted more stringent standards. We thank the standards drafting team for their efforts and commend the team for their work in developing this standard.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards. The drafting team will recommend to the Director, Standards and the SAC that a process be developed to address changes to already approved definitions. During the development of FAC-010, the drafting team did ask stakeholders for feedback on the consideration of credible multiple contingencies. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of **only** first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do not form a consistent subset of contingencies categorized as level C considerations across all regions. The wording in the posted draft of the standard provides: – An enabler for regions to have credible multiple contingencies evaluated in the determination of system operating limits and for this list for contingencies to be less that the full set of Table 1 category C Contingencies. The list could have no entries or it could be as specific as detailing only certain contingencies at certain buses. – A reduction in the need for a series of regional differences to be embedded in the standard. Similarly, there is a reduced need for those responsible for establishing the methodology for the calculation of system operating limits or those responsible for the determination of limits to have to be aware of regional standards and to develop methodologies consistent with both the NERC and the regional standard. – An enabler for the regions to require different contingencies to be considered for planning and operating studies and for the criteria for evaluation of the contingencies to be different for each. – While not a direct factor, this wording reflects current reliability practice and ensures that it can continue. Note that there are no criteria for the establishment of SOLs used in the operating horizon, so			

Commenter	Yes	No	Comment
developing a standard that does establish criteria is a step **forward**, not a reduction in reliability. The language in the proposed FAC-010-1 represents a compromise aimed at reaching the best consensus.			
Independent Electricity System Operator Ron Falsetti		✓	(1) Change of the definition during the development of a Reliability Standard without reviewing other standards for consistency is potentially problematic. The IESO nevertheless proposes the following definition to eliminate concerns raised regarding single or multiple initiating events, if it is to change. "Contingency: An unexpected event, which could result in the loss of one or more Bulk Electric System facilities." It is also the IESO's view a revision to the definition 'contingency' only, fails to fully capture concerns previously raised with this standard; specifically: 2). While, we recognize that the Standards Drafting Team has included a provision in section R4.5 which permits a Region to establish criteria requiring consideration of credible multiple element contingencies. We continue to believe that reliability standards recognizing this class of contingencies should be maintained in all of North America, not only certain Regions. A weakening of reliability standards in any Region could adversely affect the reliability in another Region, even if the other Region has adopted more stringent standards. We further believe it is inconsistent with a critical recommendation of the joint U.S.-Canada Power System Outage Task Force in its Final Report of the August 14, 2003 Blackout. Specifically, recommendation #25 which states that the NERC process to re-evaluate its standards should "not dilute the content of the existing standards. Standard FAC-010-1, in our view fails to meet this principle since it does not require consideration of credible multiple element contingencies. It is also in this context that we believe inconsistencies exist between FAC-010-1 and the existing Transmission Planning (TPL) series of standards, resulting in confusion in the industry. R2 of proposed standard FAC-010-1 states that the standard's required methodology "shall be applicable to development of SOLs during the planning horizon". However, the recently adopted transmission system planning standard TPL-003-0, "System Performance Following Loss of Two or More BES Elements", includes a requirement to assess Category C contingencies as listed in Table 1, i.e., events resulting in the loss of two or more (multiple) elements. Therefore, adoption of FAC-010-1 in its present form, without considering Category C contingencies, would be inconsistent with Standard TPL-003-0 and would thus result in a weakening of existing NERC standards. 3) Additionally, standard FAC-010-1, requirement R4.2.2 is not totally consistent with standard TPL-002-0. TPL-002-0 requires that category "B" contingencies as listed in Table1 be observed. Table 1 of the standard includes requirements stated in FAC-010-1 R4.2.2 and 4.2.3, but also includes the "Loss of an Element without a Fault", as a requirement to be met. FAC-010-1 as currently written would appear to exclude the loss of any single bus or an inadvertent breaker opening. Either of these are single contingencies that can remove additional BES facilities or reconfigure the BES to the point where the BES could be in a cascading situation. It needs to be

Commenter	Yes	No	Comment
			clarified whether the exclusion of a single bus or an inadvertent breaker operation is deliberate from Requirement R4.2.2. If not, Requirement R4.2.2 should include the missing categories specified in the "element" definition, or make reference to the TPL-002 standard, Table 1. We prefer to have reference to the TPL standard, which will eliminate the need to revise this standard should the other standard changes. [R4.2 states: "Following the single Contingencies identified in Reliability Standard FAC-010- 1_R4.2.1 through R4.2.3, the system shall demonstrate transient, dynamic and voltage stability; all Facilities shall be operating within their Facility Ratings and within their thermal, voltage and stability limits; and Cascading Outages or uncontrolled separation shall not occur"]. It excludes provision for respecting all the applicable ratings as stipulated in Table 1 of TPL-002-0 IESO Recommendations: 1). It needs to be clarified whether the exclusion of a single bus or an inadvertent breaker is deliberate from Requirement R4.2.2 and if so why? 2). We believe that we understand and agree with the goals of requirement R4.2, but do not support the requirement as stated. It currently states that "Following contingencies… all facilities shall be operating within their facility ratings and within their thermal, voltage and stability limits." It is impractical to expect to be operating within all limits immediately following a contingency. Assuming the goal is to clarify the standard we propose the following revised wording. R4.2 "Following the single Contingencies identified in FAC-010 Requirement 4.2.1 through Requirement 4.2.3, the system shall demonstrate transient, dynamic and voltage stability; all Facilities shall be operating within their Facility Ratings and within their applicable Normal and Emergency thermal ratings, voltage and stability limits within the applicable re-preparation time (Interconnection Reliability Operating Limit Tv (IROL Tv); and Cascading Outages or uncontrolled separation shall not occur." 3). We further suggest that, in order to be consistent with standard TPL-003, "Category C" contingencies be included in standard FAC-010-1 SOL methodology for use in developing SOL's, While we recognize that the SDT has included a provision in section R4.5 which permits a Region to establish criteria requiring consideration of credible multiple element contingencies. However, we believe that reliability standards recognizing this class of contingencies should be maintained in all of North America, not only certain Regions. A weakening of reliability standards in any Region could adversely affect the reliability in another Region, even if the other Region has adopted more stringent standards. We thank the standards drafting team for their efforts and commend the team for their word in developing this standard. The IESO appreciates the opportunity to table these comments and looks forward to participating further in the standards development process.
Response: The drafting team will recommend to the Director, Standards and the SAC that a process be			

Commenter	Yes	No	Comment
			developed to address changes to already approved definitions. Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards. The existing standard includes the following language in a footnote to Requirement 4.2 to indicate that the list of contingencies identified in the standard is not intended to be all inclusive: The Contingencies identified in FAC-010 R4.2.1 through R4.2.3 are the minimum contingencies that must be studied but are not necessarily the only Contingencies that should be studied. During the development of FAC-010, the drafting team did ask stakeholders for feedback on the consideration of credible multiple contingencies. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of **only** first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do not form a consistent subset of contingencies categorized as level C considerations across all regions. The wording in the posted draft of the standard provides: – An enabler for regions to have credible multiple contingencies evaluated in the determination of system operating limits and for this list for contingencies to be less that the full set of Table 1 category C Contingencies. The list could have no entries or it could be as specific as detailing only certain contingencies at certain buses. – A reduction in the need for a series of regional differences to be embedded in the standard. Similarly, there is a reduced need for those responsible for establishing the methodology for the calculation of system operating limits or those responsible for the determination of limits to have to be aware of regional standards and to develop methodologies consistent with both the NERC and the regional standard. – An enabler for the regions to require different contingencies to be considered for planning and operating studies and for the criteria for evaluation of the contingencies to be different for each. – While not a direct factor, this wording reflects current reliability practice and ensures that it can continue. Note that there are no criteria for the establishment of SOLs used in the operating horizon, so developing a standard that does establish criteria is a step **forward**, not a reduction in reliability. The language in the proposed FAC-010-1 represents a compromise aimed at reaching the best consensus.
New York State Reliability Council Alan Adamson		✓	The New York State Reliability Council (NYSRC) does not agree with the proposed modification of the definition of the term “contingency.” Contingencies on the bulk electric power system are not necessarily caused by a "failure or outage." Also, the "unexpected loss of one or more Bulk Electric Facilities" IS a failure or outage; therefore, the proposed definition defines a contingency as "an outage caused by an outage". For this reason the NYSRC prefers the definition as originally drafted prior to the first ballot, as follows: "The unexpected loss of one or more Bulk Electric System Facilities caused by a single initating event." Further, the NYSRC remains concerned that the required methodology for determining System Operating Limits (SOLs) in Draft #6 of FAC-010-1 continues to omit the requirement to consider credible multiple element contingencies. This concern was addressed in our comments on earlier drafts and during the balloting of this standard. The NYSRC does not believe that the Drafting Team satisfactorily responded to these comments and is disappointed that they were not considered in this new draft. The NYSRC believes that the proposed standard is not consistent

Commenter	Yes	No	Comment
			with a critical recommendation in the Final Report on the August 14, 2003 Blackout in the United States and Canada, prepared by the U.S.-Canada Power System Outage Task Force. Recommendation #25 states that the NERC process to reevaluate its standards should "not dilute the content of the existing standards." The report's support for this recommendation uses a quote from a commenter on the Interim Report as follows: "A strong transmission system designed and operated in accordance with weakened criteria would be disastrous. Instead, a concerted effort should be undertaken to determine if existing reliability criteria should be strengthened…Only through strong standards and careful engineering can unacceptable power failures like August 14, 2003 be avoided in the future." Standard FAC-010-1, because it does not require consideration of credible multiple element contingencies, does not meet this principle, for the following reasons: 1. Section R2 of proposed standard FAC-010-1 states that the standard's required methodology "shall be applicable to development of SOLs during the planning horizon". However, the recently adopted Version 0 transmission system planning standard TPL-003-0, "System Performance Following Loss of Two or More BES Elements", includes a requirement to assess so-called Category C contingencies, i.e., events resulting in the loss of two or more (multiple) elements. Therefore, adoption of FAC-010-1 in its present form, without considering Category C contingencies, would be inconsistent with Standard TPL-003-0 and would thus result in a weakening of existing NERC standards. 2. Category C contingencies should be applied to the operation of the bulk electric system, as well as to planning. The Drafting Team contended in its response to this concern that "the typical operating condition is to have one or more facilities out of service." We agree that frequently during the operation of the system one or more facilities are out of service, and as a result inclusion of Category C contingency criteria may at times result in overly stringent restrictions. Under such conditions, evaluation of Category C contingencies would not be warranted, and an exception to meeting this requirement would then be permitted. However, evaluation of Category C contingencies should be required for all other operating conditions. 3. NYSRC agrees that Category C contingencies need not be applied when key transmission elements are already out of service. Traditionally, NPCC members and many other systems have used "normal operating criteria," which include Category C contingencies, for determining SOLs when all key transmission elements are in service. When one or more key transmission elements are out of service, "emergency operating criteria," which do not include Category C (multi-element) contingencies, would be used. Since the latter condition would normally apply for only a small percentage of the total hours of the year, Category C (multi-element) contingencies would and should be used for determining SOLs most of the time. The same philosophy would be used in the case of serious resource inadequacy. 4. Another reason for requiring Category C contingencies to apply to c same system using weaker criteria as proposed in Standard FAC-010-1.

Commenter	Yes	No	Comment
			5. We recognize that the SDT has included a provision in section R4.4 reliability standards in any Region could adversely affect the reliability in another Region, even if the other Region has adopted more stringent standards. In conclusion, the NYSRC continues to strongly believe that adoption of proposed standard FAC-010-1, as proposed in Draft #6, would weaken present NERC criteria, and in light of 2003 Blackout lessons-learned, would result in an unacceptable reliability impact for the North American bulk electric system.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards. During the development of FAC-010, the drafting team did ask stakeholders for feedback on the consideration of credible multiple contingencies. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of **only** first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do not form a consistent subset of contingencies categorized as level C considerations across all regions. The wording in the posted draft of the standard provides: – An enabler for regions to have credible multiple contingencies evaluated in the determination of system operating limits and for this list for contingencies to be less that the full set of Table 1 category C Contingencies. The list could have no entries or it could be as specific as detailing only certain contingencies at certain buses. – A reduction in the need for a series of regional differences to be embedded in the standard. Similarly, there is a reduced need for those responsible for establishing the methodology for the calculation of system operating limits or those responsible for the determination of limits to have to be aware of regional standards and to develop methodologies consistent with both the NERC and the regional standard. – An enabler for the regions to require different contingencies to be considered for planning and operating studies and for the criteria for evaluation of the contingencies to be different for each. – While not a direct factor, this wording reflects current reliability practice and ensures that it can continue. Note that there are no criteria for the establishment of SOLs used in the operating horizon, so developing a standard that does establish criteria is a step **forward**, not a reduction in reliability. The language in the proposed FAC-010-1 represents a compromise aimed at reaching the best consensus.			
Northwestern Energy Chuck Stigers		✓	The WECC Techanical Studies Subcommittee (TSS) prefers the old definition. WECC understands the term "event" could lead to the loss of an element due to electrical AND non-electrical reasons such as lightning, fires, airplanes, wind, etc. The proposed change could introduce confusion. For example, an unexpected loss of one Bulk Electric System Facility caused by a single initiating failure or outage could be interpreted as an N-2 contingency, or an N-1-1 contingency, and not an N-1 contingency as intended. The term "event" is used throughout the NERC Reliability Standards and in the NERC performance table. The WECC TSS suggests that definitions be developed for both single and multiple contingencies since both are referred to in the standard. WECC has individual definitions for single and multiple contingency as follows: Single Contingency - The loss of a single system element under any operating condition or anticipated mode of operation. Multiple Contingency Outages - The loss of two or more system elements caused by unrelated events or by a single low probability event occurring within a time interval too short (less than ten minutes) to

Commenter	Yes	No	Comment
			permit system adjustment in response to any of the losses.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards.			
Florida Reliability Coordinating Council		✓	We appreciate the effort at addressing the earlier comments with regard to the definition of "contingency" and agree that " failure or outage" are preferable to "event", but we still prefer the current definition contained in the Reliability Standards glossary. The new definition seems to add ambiguity. Current Definition: "The unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element."
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards.			
Midwest Reliability Organization		✓	The MRO commends the DFRDT on their continuing efforts to clarify FAC-010-1 and FAC-011-1. The MRO has the following comments: a. The MRO notes that contingency is currently defined in the existing NERC Glossary of Terms Used in Reliability Standards (NERC Glossary) as the unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element. The word contingency appears 103 times in current NERC Reliability Standards including 14 times in defining other NERC terms in the existing NERC Glossary. A change requires a careful examination of the use of the word contingency in all these other NERC standards. Also, the MRO notes that the proposed definition is not necessarily consistent with the requirements in the standards. For example, Requirement 4.2 of FAC-010-1 requires that checking for single contingencies consisting of faults or outages that cause the loss of single electric elements. Are faults assumed to be equivalent to failures? The MRO believes that the definition contingency does not need to refer to the event causing the contingencies but rather the event itself, namely "the unexpected failure or outage of a system component" as provided in the current definition of contingency included in the NERC Glossary. Further, the proposed definition requires that single events which cause one or more element outages is a single contingency. This would say that potentially a single contingency could even be five outages that are caused by a single "failure or outage." This is not consistent with the way in which Bulk Electric Systems in NERC have been planned or operated historically. Therefore, the MRO recommends that the DFRDT leave the definition for contingency unchanged from the current definition in the NERC Glossary. The MRO does not support the revised definition as well as the original definition offered in the proposed FAC-010-1. b. Although the DFTDT has not asked for comments beyond the definition for contingency, the MRO offers the following additional

Commenter	Yes	No	Comment
			comments on the FAC-010-1 Standard: FAC-010-1 R8 - There is no measurement for this requirement. This requirement should be incorporated into R7. FAC-010-1 R2.1 – The application of the term System Operating Limit, specifically regarding the word Operating, to the Planning Horizon is confusing and should be clarified. FAC-010-1 R1 - The roles of the: Reliability Coordinator, Planning Authority, Regional Reliability Organization, Transmission Service Provider, Transmission Operator, Transmission Owner, and Transmission Planner need to be clarified with respect to System Operating Limits. The SDT needs to recognize the risk of inconsistency with these standards as well as other standards currently under development.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards. The drafting team did ask stakeholders to comment on the concept of requiring consideration of all credible multiple contingencies in earlier postings and there was no consensus to support requiring consideration of all credible multiple contingencies. The language in the proposed standard FAC-010 represents a compromise of all the various views that exist in the industry, and moves the industry forward from having no standard in place to address the development of SOLs and IROLs to a point where entities are required to have a documented methodology that addresses a minimum set of criteria. The proposed standard does require that any RRO identified credible multiple contingencies be considered, but does not require consideration of every credible multiple contingency. The drafting team believes that the proposed standard is a marked improvement over having no standard. The compliance monitor can review the information needed to measure compliance with R8 from the evidence in M2. R8 is applicable to the RC and the PA – R7 is only applicable to R8 – therefore incorporating R8 into R7 is not appropriate. System Operating Limits developed by Transmission Planners for use in conducting planning assessments, would be an example of a SOL developed for use in the Planning Horizon. The drafting team believes that stakeholders have agreed to the requirements contained within FAC-010 and FAC-011 with respect to accountability. The accountability for each requirement is clearly stated.			
Northeast Utilities Murale Gopinathan		✓	The standard does not adequately require the Reliability Coordinator to evaluate credible multiple contingency events when determining system operating limits. Section R4.5 does not give equal weight to the regional difference that was provided to the Western Interconnection in Section E. Defining different levels of requirements based on geographical location is not conducive to the development of a national standard. As seen on August 14, 2003 adjacent areas of the country operating to different levels of reliability can lead to disastrous results. We recognize the Western Interconnection Regional Differences are similar to existing operating practices in northeastern United States and recommend these requirements be afforded to all regions who adopt multiple contingency planning and operating practices. The definition of Contingency shall be similar to those contained in the TPL standards.
Response: During the development of FAC-010, the drafting team did ask stakeholders for feedback on the consideration of credible multiple contingencies. From comments, it was clear that the minimal standard for evaluation of limits was a consideration of **only** first contingencies. It is also clear that system reliability requires further considerations in some regions but these considerations do not form a consistent subset of contingencies categorized as level C considerations across all regions. The			

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wording in the posted draft of the standard provides: – An enabler for regions to have credible multiple contingencies evaluated in the determination of system operating limits and for this list for contingencies to be less that the full set of Table 1 category C Contingencies. The list could have no entries or it could be as specific as detailing only certain contingencies at certain buses. – A reduction in the need for a series of regional differences to be embedded in the standard. Similarly, there is a reduced need for those responsible for establishing the methodology for the calculation of system operating limits or those responsible for the determination of limits to have to be aware of regional standards and to develop methodologies consistent with both the NERC and the regional standard. – An enabler for the regions to require different contingencies to be considered for planning and operating studies and for the criteria for evaluation of the contingencies to be different for each. – While not a direct factor, this wording reflects current reliability practice and ensures that it can continue. Note that there are no criteria for the establishment of SOLs used in the operating horizon, so developing a standard that does establish criteria is a step **forward**, not a reduction in reliability. The language in the proposed FAC-010-1 represents a compromise aimed at reaching the best consensus. Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards.			
American Transmission Company		✓	ATC commends the DFRDT on their continuing efforts to clarify FAC-010-1 and FAC-011-1. ATC endorses the comments submitted by the MRO, which are as follows: The MRO notes that contingency is currently defined in the existing NERC Glossary of Terms Used in Reliablity Standards (NERC Glossary) as the unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element. The word contingency appears 103 times in current NERC Reliability Standards including 14 times in defining other NERC terms in the existing NERC Glossary. A change requires a careful examination of the use of the word contingency in all these other NERC standards. Also, the MRO notes that the proposed definition is not necessarily consistent with the requirements in the standards. For example, Requirement 4.2 of FAC-010-1 requires that checking for single contingencies consisting of faults or outages that cause the loss of single electric elements. Are faults assumed to be equivalent to failures? The MRO believes that the definition contingency does not need to refer to the event causing the contingencies but rather the event itself, namely "the unexpected failure or outage of a system component" as provided in the current definition of contingency included in the NERC Glossary. Further, the proposed definition requires that single events which cause one or more element outages is a single contingency. This would say that potentially a single contingency could even be five outages that are caused by a single "failure or outage." This is not consistent with the way in which Bulk Electric Systems in NERC have been planned or operated historically. Therefore, the MRO recommends that the DFRDT leave the definition for contingency unchanged from the current definition in the NERC Glossary.

Commenter	Yes	No	Comment
			The MRO does not support the revised definition as well as the original definition offered in the proposed FAC-010-1.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards.			
Southern Company Services, Inc.		✓	We prefer a definition of greater clarity, which does not include multiple facilities in close proximity (such as common R-O-Ws or double-circuit towers) to be considered as a single contingency. Therefore, we propose to leave unchanged the definition of Contingency as presently listed in the --Glossary of Terms Used in Reliability Standards--.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards.			
Electric Reliability Council of Texas H. Steven Myers	✓		The key here is that the "initiating failure or outage" is something of unexpected nature. The SDT has discussed the intent of the language multiple times and there is no intent to change from existing meanings of common useage of the term contingency. There will always be a need to examine all failures to determine whether they were multiple contingencies. By far the majority of contingencies are common events such as a breaker trip, a line tripping out of service, or a generator tripping off line. There is no feasible way to completely describe all contingencies that could occur and summarize them in a brief definition.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards.			
NERC Standards Evaluation Committee Bill Bojorquez	✓		The SES supports this revised definition with the provision that the SDT has reviewed all previously adopted Version 0 standards and has determined that new definitions for Contingency and Bulk Electric System Facilities will require no additional revisions or modifications to any Version 0 Reliabiltiy Standards already approved and adopted.
Response: Stakeholders indicated that the definition of contingency that was approved with Version 0 standards is preferred over the definitions proposed by the drafting team; the drafting team will move the standards forward using the definition of contingency that was approved with Version 0 standards. There is no process in place to address modifications to already approved definitions. The drafting team will recommend to the Director, Standards and the SAC that this issue be addressed.			
Allegheny Power William J. Smith	✓		None
Tennessee Valley Authority Kathleen A. Davis Al Corbet – TVA	✓		None
Ameren John E. Sullivan	✓		