

Consideration of Comments on Draft 5 of FAC-003-2

Project 2007-07 Vegetation Management — September 30, 2011

Background

The Transmission Vegetation Management Drafting Team thanks all commenters who submitted comments on the 5th Draft of FAC-003-2 Transmission Vegetation Management standards. These standards were posted for a 30-day public comment period from January 27, 2011 through February 28, 2011. The stakeholders were asked to provide feedback on the standards through a special Electronic Comment Form. There were 41 sets of comments, including comments from more than 106 different people from approximately 63 companies representing 9 of the 10 Industry Segments as shown in the table on the following pages.

Summary of Changes

In order to be consistent with the latest version of NERC's Results Based Standards template, the heading "Objective" was replaced with "Purpose," and the numbering, headings, and sections were reformatted as necessary.

One repeated concern was whether or not "danger trees" rights outside the Right-of-Way (ROW) should be an extension of the ROW. The SDT has limited the definition of Right-of-Way to a corridor of land with a defined width to operate a transmission line, which does not include danger tree rights.

Another repeated concern was reference to the term "blowout standard" and commenters were asking for more clarification and/or a specific definition of that term. To this line of comments the SDT responded, "the definition includes a series of options that give the Transmission Owner latitude in establishing ROW width. It does not require selecting a single method for its system. The term blowout standard is not capitalized and is not a defined term, and is intended to represent whatever conductor "blow out" (as opposed to vegetation "blow in") design criteria were used when the line was constructed. This phrase in the definition allows a Transmission Owner to use its internal engineering standards or the general engineering standards that were in effect when the line was constructed to determine the ROW width."

A request was made to include the definition of MVCD within the definition section of the standard. The SDT agreed with the commenter's request and used the appropriate portion of the existing language in the rationale text box associated with R1 for the MVCD definition. The SDT understands that this term will be added to the NERC glossary coincident with this standard becoming effective. This is not a substantive change to the standard, it is merely procedural.

The SDT made minor changes to the footnotes in response to several requests.

There was some concern expressed regarding the relationships between the VSLs and language in the requirements. The SDT revised the language in the Rationale box to explain the program performance relationships between types of encroachments, faults and outages, and various types of failed maintenance, and how the various types of failed maintenance have historically been associated with known vegetation related events.

One commenter requested that “of applicable lines” be added to the requirements and VSL verbiage to clearly denote applicability within the requirements and VSL verbiage. The SDT made those changes as requested to the requirements, measures and VSLs.

Two commenters requested an example be added to the Guidelines and Technical Basis similar to the examples in R6 to clarify that the % calculations should be based on the Annual Plan as modified; the SDT added the example as requested.

[http://www.nerc.com/filez/standards/Vegetation-Management Project 2007-7.html](http://www.nerc.com/filez/standards/Vegetation-Management%20Project%202007-7.html)

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Herb Schrayshuen, at 404-446-2563 or via email at herb.schrayshuen@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

¹ The appeals process is in the Standard Processes Manual:
<http://www.nerc.com/standards/newstandardsprocess.html>.

Index to Questions, Comments, and Responses

1. The SDT proposes a revised NERC Glossary definition for Right-of-Way (ROW). This revised definition will be used in lieu of the Active Transmission Line ROW. Do you agree? If answer is no, please explain. 10

2. In R1 and R2 and their associated VSLs, the SDT added the phrase “in order of increasing severity” and added the sentence “The types of encroachments are listed in order of increasing degrees of severity in non-compliant performance as it relates to a failure of a TO’s vegetation maintenance program.” to the Rationale boxes for R1/R2. Do you agree? If answer is no, please explain. 28

3. In response to comments received regarding the term “investigation” in M1/M2, the SDT substituted “confirmation...by the Transmission Owner..” in its place, among other minor edits to these measures. Do you agree? If answer is no, please explain. 38

4. In response to comments received that requirement R3 is unclear with respect to intent, the SDT added “maintenance strategies”. Do you agree this clarifies the intent? If answer is no, please offer alternative language..... 46

5. The SDT added clarifying language in M7 to explain how the annual work plan percentage complete calculation is to be performed. Is this adequate? If no, please provide improved examples. 53

Additional Comments from NERC:..... 67

The Industry Segments are:

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

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
1.	Group	Joe Spencer	SERC Vegetation Management sub-committee										X
	Additional Member	Additional Organization	Region	Segment Selection									
	1. Fatima Ahmed	SEPA	SERC										
	2. Gerry Beckerie	Ameren	SERC										
	3. Todd Bennett	AECI	SERC										
	4. Brent Davis	Entergy	SERC										
	5. Richard Dearman	TVA	SERC										
	6. Jack Gardner	Progress Energy	SERC										
	7. Jeff Hackman (chair)	Ameren	SERC										
	8. Ralph Hale	Entergy	SERC										
	9. Jerry Lindler	SCANA	SERC										
	10. Larry Rodriguez	Entegra Power	SERC										
	11. Joe Spencer	SERC Reliability	SERC										
	12. John Troha	SERC Reliability	SERC										
	13. Marc Tunstall	Fayetteville Public Works Com	SERC										
	14. Terry Wilson	Power South	SERC										
2.	Group	Sasa Maljukan	Hydro One Networks	X									

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
Additional Member Additional Organization Region Segment Selection													
1.	David Kiguel	Hydro One Networks Inc	NPCC	1									
2.	Jonathan Marriott	Hydro One Networks Inc.		1									
3.	Group	Guy Zito	Northeast Power Coordinating Council										X
Additional Member Additional Organization Region Segment Selection													
1.	Alan Adamson	New York State Reliability Council, LLC	NPCC	10									
2.	Gregory Campoli	New York Independent System Operator	NPCC	2									
3.	Kurtis Chong	Independent Electricity System Operator	NPCC	2									
4.	Sylvain Clermont	Hydro-Quebec TransEnergie	NPCC	1									
5.	Bohdan M. Dackow	US Power Generating Company (USPG)	NPCC	NA									
6.	Chris de Graffenried	Consolidated Edison Co. of New York, Inc.	NPCC	1									
7.	Gerry Dunbar	Northeast Power Coordinating Council	NPCC	10									
8.	Brian Evans-Mongeon	Utility Services	NPCC	8									
9.	Mike Garton	Dominion Resources Services, Inc.	NPCC	5									
10.	Brian L. Gooder	Ontario Power Generation Incorporated	NPCC	5									
11.	Kathleen Goodman	ISO - New England	NPCC	2									
12.	David Kiguel	Hydro One Networks Inc.	NPCC	1									
13.	Michael R. Lombardi	Northeast Utilities	NPCC	1									
14.	Randy MacDonald	New Brunswick Power Transmission	NPCC	1									
15.	Bruce Metruck	New York Power Authority	NPCC	6									
16.	Chantel Haswell	FPL Group, Inc.	NPCC	5									
17.	Lee Pedowicz	Northeast Power Coordinating Council	NPCC	10									
18.	Robert Pellegrini	The United Illuminating Company	NPCC	1									
19.	Saurabh Saksena	National Grid	NPCC	1									
20.	Michael Schiavone	National Grid	NPCC	1									
21.	Wayne Sipperly	New York Power Authority	NPCC	5									
22.	Donald Weaver	New Brunswick System Operator	NPCC	2									
23.	Ben Wu	Orange and Rockland Utilities	NPCC	1									
24.	Peter Yost	Consolidated Edison Co. of New York, Inc.	NPCC	3									
4.	Group	Deborah Schaneman	Platte River Power Authority Substation Maintenance Group		X		X		X	X			
Additional Member Additional Organization Region Segment													

Group/Individual	Commenter	Organization	Registered Ballot Body Segment											
			1	2	3	4	5	6	7	8	9	10		
Selection														
1.	Scott Rowley	Platte River Power Authority WECC	1, 3, 5, 6											
2.	Gary Whittenberg	Platte River Power Authority WECC	1, 3, 5, 6											
3.	Aaron Johnson	Platte River Power Authority WECC	1, 3, 5, 6											
5.	Group	Denise Koehn	Bonneville Power Administration	X		X		X	X					
Additional Member			Additional Organization	Region	Segment Selection									
1.	Charles Sheppard	BPA, Transmission Field Services	WECC	1										
2.	Steven Narolski	BPA, Transmission Field Services	WECC	1										
3.	Frank Weintraub	BPA, Transmission Lign Design	WECC	1										
4.	Jennifer Bailey	BPA, Transmission, Construction Mgmt and Inspect	WECC	1										
5.	Don Swanson	BPA, Transmission TLM Technical Services	WECC	1										
6.	Steve Bottemiller	BPA, Transmission, Real Property Support Svcs	WECC	1										
7.	Vince Ierulli	BPA, Transmission Lign Design	WECC	1										
8.	Mike Staats	BPA, Transmission Engineering	WECC	1										
9.	Jenifur Rancourt	BPA, FERC Compliance	WECC	1, 3, 5, 6										
6.	Group	Doug Keegan	NERC Staff											
7.	Group	David Thorne	Pepco Holdings Inc and Affiliates	X		X								
Additional Member			Additional Organization	Region	Segment Selection									
1.	Dana Small		RFC	1										
2.	Lisa E Pfeifer		RFC	1										
3.	Pat J Byrne		RFC	1										
8.	Group	Sam Ciccone	FirstEnergy	X		X	X	X	X					
Additional Member			Additional Organization	Region	Segment Selection									
1.	Rebecca Spach	FE	RFC	1										
2.	Doug Hohlbaugh	FE	RFC	1, 3, 4, 5, 6										
3.	Dave Folk	FE	RFC	1, 3, 4, 5, 6										

Group/Individual	Commenter	Organization	Registered Ballot Body Segment											
			1	2	3	4	5	6	7	8	9	10		
4. Mike Ferncez	FE	RFC 1												
5. Shawn Standish	FE	RFC 1												
6. Katrina Schnobrich	FE	RFC												
9. Group	Mike Garton	Dominion Electric Market Policy	X		X		X	X						
Additional Member	Additional Organization	Region	Segment Selection											
1. Michael Gildea	Dominion Resources Services, Inc.	NPCC	5											
2. Louis Slade	Dominion Resources Services, Inc.	SERC	5											
3. Connie Lowe	Dominion Resources Services, Inc.	RFC	6											
4. Michael Crowley	Dominion Virginia Power	SERC	1, 3											
10. Individual	JT Wood	Southern Company Transmission	X		X									
11. Individual	Janet Smith, Regulatory Affairs Supervisor	Arizona Public Service Company	X		X		X	X						
12. Individual	Cynthia Oder	Salt River Project	X		X		X	X						
13. Individual	Luke Diruzza	Tampa Electric Company	X		X		X	X						
14. Individual	Silvia Parada Mitchell	NextEra Energy	X		X		X	X						
15. Individual	Jennifer Wright	SDG&E	X		X		X							
16. Individual	JAMES SMITH	ASSET MANAGEMENET	X											
17. Individual	Si Truc PHAN	Hydro-Quebec TransEnergie (NCR07112)	X											
18. Individual	Michael Gammon	Kansas City Power & Light	X		X		X	X						
19. Individual	Joe Petaski	Manitoba Hydro	X											

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
20.	Individual	Weston Davis	Central Maine Power Company - IberdrolaUSA	X									
21.	Individual	Gordon Rawlings	BC Hydro	X	X	X		X					
22.	Individual	Andrew Puztai	American Transmission Company, LLC	X									
23.	Individual	Thad Ness	American Electric Power	X		X		X	X				
24.	Individual	William Rees	Baltimore Gas and Electric Co.	X									
25.	Individual	Jason Regg	TVA	X									
26.	Individual	Michael Schiavone	Niagara Mohawk Power Corporation (dba National Grid)			X							
27.	Individual	Michael Pakeltis	CenterPoint Energy	X									
28.	Individual	Greg Rowland	Duke Energy	X		X		X	X				
29.	Individual	RoLynda Shumpert	South Carolina Electric and Gas	X		X		X	X				
30.	Individual	Darryl Curtis	Oncor Electric Delivery Company LLC	X									
31.	Individual	Kirit Shah	Ameren	X		X		X	X				
32.	Individual	Amy Kupferberg	Individual	NA									
33.	Individual	George Czerniewski	Consolidated Edison Company of New York, Inc. - Transmission Line Maintenance	X									

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
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34.	Individual	andres lopez	USACE					X				X	
35.	Individual	CJ Ingersoll	CECD			X							
36.	Individual	Edward J Davis	Entergy Services, Inc	X		X		X	X				
37.	Individual	David Burke	Orange and Rockland Utilities, Inc.	X		X							
38.	Individual	Saurabh Saksena	National Grid	X		X							
39.	Individual	Steve Rueckert	Western Electricity Coordinating Council										X
40.	Individual	Jody Nelson	Georgia Transmission Corp.	X									
41.	Individual	T. Wiley	Northern Indiana Public Service Company	X		X							

1. **The SDT proposes a revised NERC Glossary definition for Right-of-Way (ROW). This revised definition will be used in lieu of the Active Transmission Line ROW. Do you agree? If answer is no, please explain.**

Summary Consideration: There are 40 comments; 29 of those comments were in agreement with the definition, and 11 were in disagreement.

One repeated concern in the disagreements was whether or not “danger trees” rights outside the Right-of-Way (ROW) should be an extension of the ROW. The SDT responded “The SDT has limited the definition of Right-of-Way to a corridor of land with a defined width to operate a transmission line. This does not include danger tree rights.”

Another repeated concern in the disagreements was reference to the term “blowout standard” and commenters were asking for more clarification and/or a definition of that term. To this line of comment the SDT responded “The definition includes a series of options that gives the Transmission Owner latitude in establishing ROW width. It does not require selecting a single method for its system. The term blowout standard is not capitalized and is not a defined term, and is intended to represent whatever conductor “blow out” (as opposed to vegetation “blow in”) design criteria were used when the line was constructed. This phrase in the definition allows a Transmission Owner to use its internal engineering standards or the general engineering standards that were in effect when the line was constructed to determine the ROW width.”

A request was made to include the definition of MVCD within the definition section of the standard. The SDT agreed with the commenter’s request and used the appropriate portion of the existing language in the rationale text box associated with R1 for the MVCD definition. The SDT understands that this term will be added to the NERC glossary coincident with this standard becoming effective. This is not a substantive change to the standard, it is merely procedural.

A request was made to remove the existing and future definition of ROW from the glossary. The SDT understands that this is not consistent with the NERC intent for each repeated acronym used in multiple requirements to be available in the glossary for ready reference.

A request was made to change the definition of ROW to include special permissions given by some property owners. To this the SDT responded “The SDT has limited the definition of Right-of-Way to a corridor of land with a defined width to operate a transmission line. The SDT does not propose to change the definition because of the numerous and varied special property owner permissions that may exist, and which are not always legally binding.”

A concern within one disagreement was related to possible misuse of the “pre-2007 vegetation maintenance records.” The SDT explained that this term was placed in the definition as a method to cover situations where the other alternatives are not viable. The SDT will address this issue in the Technical Reference Document.

Organization	Yes or No	Question 1 Comment
SERC Vegetation Management sub-committee	No	We agree with the proposed definition as a replacement for active transmission ROW, however, in a review of NERC standards, the term ROW is not used except in FAC-003. It is therefore recommended that the term be removed from the NERC glossary. r
<p>Response: The SDT thanks you for your comments. The SDT considered your request but cannot implement it because it is not consistent with the NERC Standards Development Process for defining the use of a term solely within a standard itself. All defined terms must be included in the glossary.</p>		
Hydro One Networks	No	The revised definition of ROW is unclear in regards to the application of standards and/or historic records as a means of determining ROW width; is it necessary for a TO to select one method to apply in all cases, or can each span be treated in the manner deemed most appropriate by the TO? Additionally “blowout Standard” has not been defined in the document or in the technical paper, and therefore it is not clear exactly how this method would be applied, and subsequently defended under scrutiny.
<p>Response: The SDT thanks you for your comments. The definition includes a series of options that give the Transmission Owner latitude in establishing ROW width. It does not require selecting a single method for its system. The term blowout standard is not capitalized and is not a defined term, and is intended to represent whatever conductor “blow out” (as opposed to vegetation “blow in”) design criteria were used when the line was constructed. This phrase in the definition allows a Transmission Owner to use its internal engineering standards or the general engineering standards that were in effect when the line was constructed to determine the ROW width.</p>		
Northeast Power Coordinating Council	No	There was no definition of ROW listed in FAC-003-1. The revised definition of ROW in FAC-003-2 is unclear regarding the application of standards and/or historic records as a means of determining

Organization	Yes or No	Question 1 Comment
		<p>ROW width. Is it necessary for a TO to select one method to apply in all cases, or can each span be treated in the manner deemed most appropriate by the TO? “Blowout standard” has not been defined in the document, technical paper, or NERC Glossary and it is not clear what this method is, and exactly how it would be applied. It could not be defended under scrutiny. It is still unclear whether Danger Tree rights are included in this definition. In the NERC Glossary of Terms, Right-of-Way (ROW) is defined as “A corridor of land on which electric lines may be located. The Transmission Owner may own the land in fee, own an easement, or have certain franchise, prescription, or license rights to construct and maintain lines.” Propose keeping this definition. Is encroachment into the MVCD, or (MVCD plus additional distance as defined by the TO)? MVCD, as specified within the body of FAC-003-2 "is a calculated minimum distance stated in feet (meters) to prevent flashover between conductors and vegetation, for various altitudes and operating voltages." MVCD should be “formally” defined in this document, and the NERC Glossary. Can a list/database be established in 2011 that lists the widths for the pre-2007 vegetation management records?</p>
<p>Response: The SDT thanks you for your comments. The existing ROW definition in the glossary was created by and for the FAC-003-1 and was moved there when that standard was adopted. The definition includes a series of options that give the Transmission Owner latitude in establishing ROW width. It does not require selecting a single method for its system. The term blowout standard is not capitalized and is not a defined term, and is intended to represent whatever conductor “blow out” (as opposed to vegetation “blow in”) design criteria were used when the line was constructed. This phrase in the definition allows a Transmission Owner to use its internal engineering standards or the general engineering standards that were in effect when the line was constructed to determine the ROW width. The SDT has limited the definition of Right-of-Way to a corridor of land with a defined width to operate a transmission line. This does not include danger tree rights.</p> <p>The definition of the MVCD is now added to this Standard. While use of the pre-2007 records is a compliance issue and is not in the purview of the SDT, it is the intent of the language in the definition that you could use this information.</p>		
Platte River Power Authority Substation Maintenance Group	No	<p>We agree that the ROW width in no case exceeds the TO’s legal rights but may be less. We do not agree that the revised NERC Glossary definition for Right-of-Way addresses paragraph 734 of FERC Order 693 “that rights-of-way be defined to encompass the required clearance areas instead of the</p>

Organization	Yes or No	Question 1 Comment
		<p>corresponding legal rights, and that the standards should not require clearing the entire right-of-way when the required clearance for an existing line does not take up the entire right-of-way". The engineering or construction standards for establishing the width of the corridor outlined in the definition are in most cases not useful. We will continue to rely on our easements and legal rights with this definition. We believe the Active Transmission Line ROW definition in the previous version more clearly addressed paragraph 734 of FERC Order 693.</p>
<p>Response: The SDT thanks you for your comments. The standard covers lines that have been built over many years where records could be lost. The ROW definition provides three alternatives to determine the width of the corridor to be maintained.</p>		
NERC Staff	No	<p>NERC supports a revised definition and prefers the definition in Draft 5 over the Active Transmission Line ROW definition used in Draft 4. NERC believes the use of the term "pre-2007 vegetation maintenance records" in the proposed definition is ambiguous and will likely be interpreted differently throughout the industry. Therefore, NERC supports this change subject to removing the aforementioned term.</p>
<p>Response: The SDT thanks you for your comments. The phrase "...pre-2007 vegetation maintenance records..." was placed in the definition as a method to cover situations where the other alternatives are not viable. The SDT has addressed this issue in detail in the Technical Reference Document.</p>		
FirstEnergy	No	<p>Although for the most part we agree with the changes to the definition of ROW, we suggest the following changes.</p> <ol style="list-style-type: none"> 1. The last sentence of the definition states "The ROW width in no case exceeds the Transmission Owner's legal rights but may be less based on the aforementioned criteria." We do not agree with the phrase "in no case exceeds the Transmission Owner's legal rights" because there could be instances where special permission has been granted by landowners to the TO. We suggest revising this statement to "The ROW width may be less than the Transmission Owner's granted rights based on the aforementioned criteria."

Organization	Yes or No	Question 1 Comment
		<p>2. Regarding the phrase "blowout standard" used in the definition, we are assuming this is in reference to the company specific calculations for sag and sway on not on any one specific industry standard. We suggest clarification such as "Transmission Owner's specific blowout or sag and sway analysis in effect when the line was built".</p>
<p>Response: The SDT thanks you for your comments. The SDT has limited the definition of Right-of-Way to a corridor of land with a defined width to operate a transmission line. The SDT does not propose to change the definition because of the numerous and varied special property owner permissions that may exist, and which are not always legally binding.</p> <p>The term blowout standard is not capitalized and is not a defined term, and is intended to represent whatever conductor “blow out” (as opposed to vegetation “blow in”) design criteria were used when the line was constructed. This phrase in the definition allows a Transmission Owner to use its internal engineering standards or the general engineering standards that were in effect when the line was constructed to determine the ROW width.</p>		
Central Maine Power Company - IberdrolaUSA	No	<p>The definition does not define transmission owner responsibility for areas covered by “danger tree” rights. This area is outside the maintained width but for economic and social reasons the transmission owner can not remove all danger trees. Utilities have procedures in place to remove the hazard trees but it is not practical to remove all danger trees that have the potential to violate the MVCD should they fail. This area of the definition requires clarification.</p>
<p>Response: The SDT thanks you for your comments. The SDT has limited the definition of Right-of-Way to a corridor of land with a defined width to operate a transmission line. This does not include danger tree rights.</p>		
TVA	No	<p>I suggest that "arboricultural activities or horticultural or agricultural activities be removed and changed to installation, removal or digging of vegetation.</p>
<p>Response: The SDT thanks you for your comments. The changes have been made in the footnotes.</p>		
Niagara Mohawk Power Corporation (dba National	No	<p>It is still unclear whether Danger Tree rights are included in this definition. Additional question: Can we establish a list/database in 2011 stating the widths for the pre-2007 vegetation</p>

Organization	Yes or No	Question 1 Comment
Grid)		management records? There is no definition of ROW listed in FAC-003-1, however in the NERC Glossary of Terms, Right-of-Way (ROW) is defined as “A corridor of land on which electric lines may be located. The Transmission Owner may own the land in fee, own an easement, or have certain franchise, prescription, or license rights to construct and maintain lines.” We propose keeping this definition.
<p>Response: The SDT thanks you for your comments. The SDT has limited the definition of Right-of-Way to a corridor of land with a defined width to operate a transmission line. This does not include danger tree rights. While use of the pre-2007 records is a compliance issue and is not in the purview of the SDT, it is the intent of the language in the definition that you could use this information.</p>		
CenterPoint Energy	No	<p>CenterPoint Energy agrees with the removal of “Active Transmission Line ROW” as a defined term. The change in the NERC Glossary definition for Right-of-Way (ROW) alone, however, does not address all of the remaining interpretation issues within the Standard that still exist.</p> <p>The following issues still require resolution:</p> <ol style="list-style-type: none"> 1. The “force majeure” was moved from the Applicability section to a footnote, and is no longer an encompassing exception for each Requirement. Therefore, the “force majeure” footnote needs to be applied not only to R1, R2, R6, and R7 but also R4 and R5. For R4, notification to the control center would likely be restricted during a natural disaster. For R5, correction action by the control center may not be possible during a natural disaster. 2. The exception for applicability beyond the “Rating and all Rated Electrical Operating Conditions” should be included not only in R1, R2, and R3, but also R5 and R7. For R5 and R7, the encroachment into the MVCD should consider whether the line is operating within its design limits. 3. The use of the term “Fault” in M1 and M2 should be revised to “Sustained Outage”. A “Fault” can be associated with a Momentary Outage or a Sustained Outage. The scope of R1 and R2 is specific to Sustained Outages only. The Periodic Data Submittal is specific to Sustained Outages only as well. If a later confirmation of a “Fault” by the Transmission Owner indicates that a vegetation encroachment into the MVCD was due to a fall-in from inside the ROW, yet caused only

Organization	Yes or No	Question 1 Comment
		<p>a Momentary Outage, the Transmission Owner would be in violation of R1 because M1 considers it to be the equivalent of a Real-time observation. The current scope of the Standard is not intended to include Momentary Outages. If it was, the Periodic Data Submittal would capture this type of outage, which it does not.</p> <p>4. In the Introduction Section 5 - Background, fall-ins are characterized as “statistically intermittent” and “these types of events are highly unlikely to cause large-scale grid failures”. CenterPoint Energy agrees and therefore recommends that fall-ins be excluded from the Requirements R1, R2, and Periodic Data Submittal of outages. This would negate the need for determining the limits of the ROW, thus simplifying the Standard to a great margin while not sacrificing the emphasis of the Standard. The Draft 5 Background Information states the criteria for developing a results-based reliability standard such that “each requirement should identify a clear and measurable expected outcome.” When the determination of the limits of the ROW goes beyond the interpretation of the legal limits of the ROW, it adds a level of complexity that may be unclear and not deterministically measurable.</p> <p>5. For R6, CenterPoint Energy believes the detailed rationale and studies used for the determination of the required one year inspection cycle should be included in the Guidelines and Technical Basis. The explanation provided in the Rationale that it is “based upon average growth rates across North America and on common utility practice” are unfounded and arbitrary without a specific reference to a North American study.</p> <p>6. R7 contains the phrase, “provided they do not put the transmission system at risk of a vegetation encroachment”. CenterPoint Energy recommends this phrase be replaced with the more specific terminology used in the Rationale for R7 and R3: “provided they do not allow encroachment of vegetation into the MVCD.”</p> <p>7. CenterPoint Energy believes the Periodic Data Submittal should be clarified as to the specific conditions under which Sustained Outages are reported. There is a reference to footnote 2 regarding the exclusion for the “force majeure”; however, the exclusion for lines operating outside their design limits as mentioned in R1, R2, and R3 is missing. CenterPoint Energy believes the</p>

Organization	Yes or No	Question 1 Comment
		<p>wording should be changed to include all applicable exclusions for added clarity and recommends the following wording: “The Transmission Owner will submit a quarterly report to its Regional Entity, or Regional Entity’s designee, identifying all Sustained Outages of applicable transmission lines operating within their Facility Rating and all Rated Electrical Operating Conditions as determined by the Transmission Owner to have been caused by vegetation, except as excluded in footnote 2, which includes as a minimum, the following:”</p> <p>8. The Guidelines and Technical Basis and the Technical Reference with the Gallet Equation should be combined into one document as a supplement to the Standard to avoid duplication in wording and misinterpretation of context.</p> <p>9. The Guideline and Technical Basis under Requirement R6 refers to the “percentage of the required ROW inspections completed” and should be revised to match the wording of R6 and the VSL for R6 as the “percentage of applicable transmission line inspections completed.”</p> <p>10. CenterPoint Energy agrees that the Rationale test boxes should be deleted from the Standard and applicable explanatory text be included within the Guidelines and Technical Basis.</p> <p>11. The Guidelines and Technical Basis should contain specific examples for determining if a fall-in is considered inside or outside the ROW.</p> <p>12. CenterPoint Energy recommends modifying the Technical Reference section regarding “Selecting a Maintenance Approach” to delete the sentences beginning with, “If constraints cannot be overcome and if design clearances are sufficient...” and continuing through to, “identified early for rectification.” This example may lead the public to inappropriately ask the utilities for exceptions to allow vegetation beneath the transmission lines, and it also does not address the dynamics of future modifications to the transmission lines (e.g. higher operating temperatures or new conductors) that may necessitate reduced clearances to ground, thus requiring removal of now mature vegetation. The example should not be included in a Standard intended to reduce vegetation risks to the transmission system. It is also in conflict with later statements in the Technical Reference regarding Set Objectives which emphasize maintaining access and clear lines of</p>

Organization	Yes or No	Question 1 Comment
		<p>sight.</p> <p>13. In general, CenterPoint Energy strongly believes the proposed FAC-003-2 has gone far beyond what was contemplated by the Commission in FERC Order 693. The Commission's determination dealt with the following areas: (1) applicability; (2) inspection cycles; and (3) minimum clearances on National Forest Service lands. For instance, in Paragraph 729, the Commission states, "As proposed in the NOPR, the Commission approves Reliability Standard FAC-003-1 with no proposed modification on the issue of clearances. The Commission reaffirms its interpretation that FAC-003-1 requires sufficient clearances to prevent outages due to vegetation management practices under all applicable conditions..." Rewriting the minimum clearances introduces a new set of confusing definitions, and further burdens the Transmission Owners with new documentation requirements while providing little, if any, benefit when compared to the Clearance 2 concept in the existing Standard. A preferred approach would be to incorporate the following few items into the existing Standard FAC-003-1: (1) the RC versus the RRO; (2) the designation of a specific inspection frequency; (3) the Gallet equation; and (4) the applicability to National Forest Service lands.</p>
<p>Response: The SDT thanks you for your comments: For clarity the SDT separated various items in your comments and repeated them below with the numbered responses:</p> <p>CenterPoint Energy agrees with the removal of "Active Transmission Line ROW" as a defined term. The change in the NERC Glossary definition for Right-of-Way (ROW) alone, however, does not address all of the remaining interpretation issues within the Standard that still exist. The following issues still require resolution:</p> <p>1. The "force majeure" was moved from the Applicability section to a footnote, and is no longer an encompassing exception for each Requirement. Therefore, the "force majeure" footnote needs to be applied not only to R1, R2, R6, and R7 but also R4 and R5. For R4, notification to the control center would likely be restricted during a natural disaster. For R5, correction action by the control center may not be possible during a natural disaster.</p> <p>Response: Thank you for your comment. The SDT considers the term "without intentional delay" to be adequate coverage for force majeure issues in R4. R5 requires that if you cannot perform work regardless of the reason you must come up with a plan to ensure that you prevent</p>		

Organization	Yes or No	Question 1 Comment
		<p>encroachments, therefore a force majeure exemption is not applicable.</p> <p>2. The exception for applicability beyond the “Rating and all Rated Electrical Operating Conditions” should be included not only in R1, R2, and R3, but also R5 and R7. For R5 and R7, the encroachment into the MVCD should consider whether the line is operating within its design limits.</p> <p>Response: The SDT thanks you for your comments. The SDT made the suggested changes to remove references to arboricultural, horticultural or agricultural activities from the footnote 2, but did not adopt the suggestion for the new footnote 6 which replaces the footnote 4 to which you refer” because that footnote 4 is concerned with completing the annual work plan, The SDT does not envision that actions by property owners such as installation, or removal or digging of vegetation as a valid impediment to completion of the annual work plan. However this term is relevant in R1 and R2 and as such is within foot note 2 because such actions do occur from time to time without the transmission Owner’s knowledge and do then result in conditions that could lead to encroachments and outages before the Transmission Owner has the opportunity to rectify the condition.</p> <p>3. The use of the term “Fault” in M1 and M2 should be revised to “Sustained Outage”. A “Fault” can be associated with a Momentary Outage or a Sustained Outage. The scope of R1 and R2 is specific to Sustained Outages only. The Periodic Data Submittal is specific to Sustained Outages only as well. If a later confirmation of a “Fault” by the Transmission Owner indicates that a vegetation encroachment into the MVCD was due to a fall-in from inside the ROW, yet caused only a Momentary Outage, the Transmission Owner would be in violation of R1 because M1 considers it to be the equivalent of a Real-time observation. The current scope of the Standard is not intended to include Momentary Outages. If it was, the Periodic Data Submittal would capture this type of outage, which it does not.</p> <p>Response: Thank you for your comment. The reporting of Sustained Outages is simply to fulfill routine data submission. The SDT does not intend to create a system that requires a root cause analysis of all Faults which are not Sustained Outages. The SDT did intend for those Faults as referenced in M1 and M2 to be considered the equivalent of an encroachment observed in real time. The SDT also notes that the term Fault is an existing defined term and momentary interruption is not.</p> <p>4. In the Introduction Section 5 - Background, fall-ins are characterized as “statistically intermittent” and “these types of events are highly unlikely to cause large-scale grid failures”. CenterPoint Energy agrees and therefore recommends that fall-ins be excluded from the Requirements R1, R2, and Periodic Data Submittal of outages. This would negate the need for determining the limits of the ROW, thus simplifying the Standard to a great margin while not sacrificing the emphasis of the Standard. The Draft 5 Background Information states the criteria for developing a results-based reliability standard such that “each requirement should identify a clear and measurable expected outcome.” When the determination of the limits</p>

Organization	Yes or No	Question 1 Comment
		<p>of the ROW goes beyond the interpretation of the legal limits of the ROW, it adds a level of complexity that may be unclear and not deterministically measurable.</p> <p>Response: Thank you for your comment. Fall-ins from inside the ROW are indicators of a poor performing vegetation management program. The definition of Right-of-Way identifies methods to define the width of the corridor establishing whether vegetation was located within the ROW and subject to the Transmission Owner’s legal rights.</p> <p>5. For R6, CenterPoint Energy believes the detailed rationale and studies used for the determination of the required one year inspection cycle should be included in the Guidelines and Technical Basis. The explanation provided in the Rationale that it is “based upon average growth rates across North America and on common utility practice” are unfounded and arbitrary without a specific reference to a North American study.</p> <p>Response: Thank you for your comment. The SDT established an inspection cycle at least once per calendar year and with no more than 18 months between inspections on the same ROW. This cycle was based on industry comments submitted to Draft 1 of this standard ending on 11-25-2008</p> <p>6. R7 contains the phrase, “provided they do not put the transmission system at risk of a vegetation encroachment”. CenterPoint Energy recommends this phrase be replaced with the more specific terminology used in the Rationale for R7 and R3: “provided they do not allow encroachment of vegetation into the MVCD.”</p> <p>Response: Thank you for your comment. The SDT agrees and has made the requested change to the draft standard.</p> <p>7. CenterPoint Energy believes the Periodic Data Submittal should be clarified as to the specific conditions under which Sustained Outages are reported. There is a reference to footnote 2 regarding the exclusion for the “force majeure”; however, the exclusion for lines operating outside their design limits as mentioned in R1, R2, and R3 is missing. CenterPoint Energy believes the wording should be changed to include all applicable exclusions for added clarity and recommends the following wording: “The Transmission Owner will submit a quarterly report to its Regional Entity, or Regional Entity’s designee, identifying all Sustained Outages of applicable transmission lines operating within their Facility Rating and all Rated Electrical Operating Conditions as determined by the Transmission Owner to have been caused by vegetation, except as excluded in footnote 2, which includes as a minimum, the following:”</p> <p>Response: Thank you for your comment. The SDT added your recommended language on “within its Rating and all Rated Electrical Operating</p>

Organization	Yes or No	Question 1 Comment
		<p>Conditions”.</p> <p>8. The Guidelines and Technical Basis and the Technical Reference with the Gallet Equation should be combined into one document as a supplement to the Standard to avoid duplication in wording and misinterpretation of context.</p> <p>Response: Thank you for your comment. The Guideline and Technical section is part of the NERC Results Based Standard format. The Technical Reference is a supplemental document that explains the VMSDT thought process in developing the requirements and applies to this version of the standard.</p> <p>9. The Guideline and Technical Basis under Requirement R6 refers to the “percentage of the required ROW inspections completed” and should be revised to match the wording of R6 and the VSL for R6 as the “percentage of applicable transmission line inspections completed.”</p> <p>Response: Thank you for your comment. VSL’s for R6 has been changed to align with the NERC Standard Development guidelines to “a Transmission Owner failed to inspect”.</p> <p>10. CenterPoint Energy agrees that the Rationale test boxes should be deleted from the Standard and applicable explanatory text be included within the Guidelines and Technical Basis.</p> <p>Response: Thank you for your comment.</p> <p>11. The Guidelines and Technical Basis should contain specific examples for determining if a fall-in is considered inside or outside the ROW.</p> <p>Response: Thank you for your comment. The SDT established the definition of a ROW and a fall-in resulting from vegetation would be determined through investigation of the sustained outage.</p> <p>12. CenterPoint Energy recommends modifying the Technical Reference section regarding “Selecting a Maintenance Approach” to delete the sentences beginning with, “If constraints cannot be overcome and if design clearances are sufficient...” and continuing through to, “identified early for rectification.” This example may lead the public to inappropriately ask the utilities for exceptions to allow vegetation beneath the transmission lines, and it also does not address the dynamics of future modifications to the transmission lines (e.g. higher operating temperatures or new conductors) that may necessitate reduced clearances to ground, thus requiring removal of now mature vegetation. The example should not be</p>

Organization	Yes or No	Question 1 Comment
		<p>included in a Standard intended to reduce vegetation risks to the transmission system. It is also in conflict with later statements in the Technical Reference regarding Set Objectives which emphasize maintaining access and clear lines of sight.</p> <p>Response: Thank you for your comment. This verbiage is part of an example describing a combination of strategies which may be utilized by a Transmission Owner.</p> <p>13. In general, CenterPoint Energy strongly believes the proposed FAC-003-2 has gone far beyond what was contemplated by the Commission in FERC Order 693. The Commission's determination dealt with the following areas: (1) applicability; (2) inspection cycles; and (3) minimum clearances on National Forest Service lands. For instance, in Paragraph 729, the Commission states, "As proposed in the NOPR, the Commission approves Reliability Standard FAC-003-1 with no proposed modification on the issue of clearances. The Commission reaffirms its interpretation that FAC-003-1 requires sufficient clearances to prevent outages due to vegetation management practices under all applicable conditions...." Rewriting the minimum clearances introduces a new set of confusing definitions, and further burdens the Transmission Owners with new documentation requirements while providing little, if any, benefit when compared to the Clearance 2 concept in the existing Standard. A preferred approach would be to incorporate the following few items into the existing Standard FAC-003-1: (1) the RC versus the RRO; (2) the designation of a specific inspection frequency; (3) the Gallet equation; and (4) the applicability to National Forest Service lands.</p> <p>Response: Thank you for your comment. The SDT believes the FAC 003-2 is an improvement over Version 1 and followed the SAR establishing that the SDT should revise the standard.</p>
Duke Energy	Yes	
South Carolina Electric and Gas	Yes	
Oncor Electric Delivery Company LLC	Yes	
Ameren	Yes	

Organization	Yes or No	Question 1 Comment
Individual		<p>My Comments do not relate to the question asked, however, I saw no other place to add my comment.</p> <p>I would like to thank NERC for allowing the public to participate in the process of improving the reliability standard FAC-003-1. I became interested in Vegetation Management requirements for Transmission Lines, after Con Edison clear cut the ROW behind my home. I appreciate the importance of safe and reliable electrical service, and recognize how an effective TVMP contributes to this goal.</p> <p>In this whole process, what has dispirited me the most, is the inaccurate information being conveyed about why the clear cutting was necessary and, the causes of the August 14th, 2003 blackout. The narrative goes something like.."a tree falling onto transmission lines caused the black out of 2003." I find it harmful because it misdirects the focus from the grid's short fallings, and impedes upgrading the system to improve reliability.</p> <p>I found this same philosophy in the initial pages of CN Utility's document, UTILITY VEGETATION MANAGEMENT FINAL REPORT MARCH 2004. It suggests that had the trees been adequately maintained, the blackout would have most "likely" not happened. Now I am aware of the qualification of the word "likely," but the document is heavily weighted on the contribution of tree contact to the blackout. We know that de-regulation and the physical nature of A.C. current had more to do with the causes of the blackout, than tree contact. The timeline shows a range of cascading system failures that created the catastrophic event. The trouble began at 1:58 p.m. when First Energy generating plant in Eastlake, Ohio, shuts down. At 3:06 p.m. a First Energy 345-kV transmission line fails. As a result, at 3:17 p.m voltage dips temporarily on the Ohio portion of the grid. Controllers take no action, but power shifted onto another power line, overloading it and, causing it to sag into a tree and go offline at 3:32 p.m. Mid West ISO and First Energy controllers fail to inform system controllers in nearby states. At 3:41 and 3:46 p.m., two breakers connecting First Energy's grid with American Electric Power are tripped. 4:05 p.m., a sustained power surge on some Ohio lines signals more trouble building. At 4:09:02 p.m., voltage sags deeply, as Ohio draws 2 GW of power from Michigan. 4:10:34 p.m., many transmission lines trip out, beginning in</p>

Organization	Yes or No	Question 1 Comment
		<p>Michigan and then in Ohio, blocking the eastward flow of power. Generators go down, creating a huge power deficit, in seconds, power surges out of the East, tripping East coast generators, and the rest is history.</p> <p>The U.S.-Canada Power System Outage Task Force: Final Report on Implementation of Recommendations, September 2006, states that “Inadequate reactive supply was a factor in most of the events.” and “the assumed contribution of dynamic reactive output of system generators was greater than the generators actually produced, resulting in more significant voltage problems.” The backup generators were not adequate to handle the amperage load or voltage needed. A lack of coordination of System Protection Programs(relays tripping), inadequate communication between Utilities/TOs, and lack of "training of operating personnel in dealing with severe system disturbances" are all the causes for the blackout.</p> <p>With respect to vegetation management, the findings from The U.S.-Canada Power System Outage Task Force: Final Report on Implementation of Recommendations, September 2006, clearly did not intend for transmission owners to develop a one-size-fits-all standard.</p> <p>The Energy Policy Act of 2005, initiated NERC to draft and adopt the standard FAC-003-1. When I read through the standard, it all seems very reasonable. I can understand the stiff penalties for noncompliance because it seems, like an easy fix, compared to the necessary, major changes in infrastructure. The principles further outlined in ANSI A300 VII, and “Best Practices” IVM, seem very reasonable too. There is mention of the environment, property owners, even proper pruning techniques. The wire zone clearance of 10 feet and, allowing low growing compatible vegetation in the boarder zone, seems to retain more vegetation, than remove.</p> <p>However, in practice, the TOs are simply clear cutting the ROW, with no regard for the enviroment, the trees that they are cutting, or the abutting properties. It took Con Edison 2 1/2 half days to clear 450 tress form behind our home. We are now forced to see and hear 93,000 cars a day from the Sprain Parkway. Following the clearing, our real estate broker dropped the asking price by 30%. The house remains empty and unsold. Apparently, no one is interested in spending 32,000K a year in property taxes to look at transmission towers/lines and live on a highway. This has been</p>

Organization	Yes or No	Question 1 Comment
		<p>devastating to our family, and thousands of others in Westchester County. They removed a buffer of trees that were 150 feet away from wires and towers, on a downward slope. These trees would have never made contact with conductors.</p> <p>Con Edison’s defense is that they did it because it was in their right to. Moreover, they use the NERC fine structure to defend their behavior. I went through the Notice of Penalties that NERC has issued from 6/2/08-2/01/11. Out of 646 Notice of Penalties, 1700 violations were sited, 36 out of 1700 penalties were issued for violations to the FAC- 003-1 standard. Some NOPs had multiple violations-18 R1 violations were cited and 29 penalties were issued for R2 violations. Out of the 29 R2 penalties, 20 involved tree contact. Some outages were caused by sagging wires, some were caused by arcing electricity looking for a ground fault, but none were caused by a tree falling onto the transmissions wires. The numbers should put into perspective how immaterial the problem of tree contact really is.</p> <p>Think about it... 20 out of 1700 involved tree contact, and none of them resulted in a sustained outage. That means 1680 violations were issued due to other system failures. To use these penalties as an excuse is a complete over exaggeration. What is missing from the standard and the fine structure, are penalties for over cutting and violations to other stipulations, such as proper communication, training, and aftercare of the affected areas. The problems that have arisen from current TVMP activities being executed nationally on our ROWs, is not a public perception problem. Rather, TOs are not complying with standards that are meant protect the environment and they are not respecting the property rights of the neighboring homeowners.</p> <p>I appreciate the opportunity to share my views, and would take any opportunity to further participate in protecting the rights of property owners, and the environment, while working to secure safe and reliable electrical service. Most respectfully, Amy M Kupferberg - Utility Whisperer</p>
<p>Response: The SDT thanks you for your comments. You raise a host of issues regarding the operations of electric transmission systems as well as recounting the blackout of 2003. We agree there seems to be wide public opinion of what actually was the cause of the blackout. Relative to your recommendations for our team, we note that appropriate NERC standards contain requirements regarding training and communications among</p>		

Organization	Yes or No	Question 1 Comment
<p>other things. For example, requirement R4 of this standard contains language which requires communication when certain vegetation conditions are discovered. As you know training and communications were just two of the many issues addressed in the blackout report.</p> <p>In response to your comment “What is missing from the standard and the fine structure, are penalties for over cutting and violations to other stipulations, such as proper communication, training, and aftercare of the affected areas,” this Standard is meant to define what needs to be accomplished to achieve reliability; it is up to the Transmission Owner to perform the vegetation maintenance in a manner to accomplish that goal consistent with applicable environmental concerns and local regulations.</p>		
Consolidated Edison Company of New York, Inc. - Transmission Line Maintenance	Yes	
USACE	Yes	
CECD	Yes	
Entergy Services, Inc	Yes	The revised Glossary definition of ROW helps to clarify the intent of what is expected and/or considered ROW stipulations. This is a beneficial addition/clarification.
<p>Response: The SDT thanks you for your comments.</p>		
Orange and Rockland Utilities, Inc.	Yes	
National Grid	No	The revised ROW definition emphasizes the ROW width needed to operate the transmission line(s). It is National Grid’s interpretation that the width established when the line was constructed is the width to be maintained. This width is documented in engineering drawings, per-2007 vegetation records or blow-out standards. This definition does not imply that danger tree rights beyond the constructed and maintained width are incorporated in the definition; therefore fallins - from

Organization	Yes or No	Question 1 Comment
		outside the ROW but within within an area with danger tree rights would not be considered fall-ins from within the ROW. National Grid would like the SDT to comment on this interpretation in its response to these comments.
<p>Response: The SDT thanks you for your comments. Your interpretation is consistent with the intent of the definition that the SDT provided. However the definition includes a series of options that give the Transmission Owner latitude in establishing ROW width. It does not require selecting a single method for its system. This phrase in the definition allows a TO to use its internal engineering standards or the general engineering standards that were in effect when the line was constructed to determine the ROW width. The SDT has limited the definition of Right-of-Way to a corridor of land with a defined width to operate a transmission line. This does not include danger tree rights.</p>		
Western Electricity Coordinating Council	Yes	
Georgia Transmission Corp.	Yes	
Northern Indiana Public Service Company	Yes	

2. In R1 and R2 and their associated VSLs, the SDT added the phrase “in order of increasing severity” and added the sentence “The types of encroachments are listed in order of increasing degrees of severity in non-compliant performance as it relates to a failure of a TO’s vegetation maintenance program.” to the Rationale boxes for R1/R2. Do you agree? If answer is no, please explain.

Summary Consideration: 32 of the 38 responses agreed with the changes. The SDT made changes to the footnotes in response to 4 requests. Three of the “yes” response comments included positive references to the improved clarity, alignment with results based standards, reinstatement of Category 3 outages and the importance of investigations which will be necessary to categorize violations across the various VSLs.

The disagreements included concerns over the relationships between the VSLs and language in requirements. The SDT revised the language in the Rationale box to explain the program performance relationships between types of encroachments, faults and outages, and various types of failed maintenance, and how the various types of failed maintenance have historically been associated with known vegetation related events.

In response to a request to exchange the order of severity levels of the failure to maintain vegetation to prevent encroachments from blowing together versus fall-ins, the SDT explained that the blowing together is considered a higher severity level of failed maintenance since the sway of the conductor is in most cases more determinable and less variable than the more complex geometry associated and numerous variables associated with fall-ins.

In response to a comment that there was no need for R1 and R2, the SDT explained that removal of R1 and R2 could be viewed as lessening the reliability of the standard.

One comment recommended that the standard include language to allow any encroachment found and removed, absent a Fault or Sustained Outage, to not be considered a violation. The SDT noted that the MVCD is a component that must be considered in the “building block” approach inherent in the standard, and as such, any encroachment inside the MVCD indicates a significant failure in overall vegetation program approach.

One comment requested a return to the Clearance 1 in the existing standard to support work that is resisted by property owners and other parties that do not want vegetation to be adequately maintained. The SDT referenced the problem associated with a fill-in-the-blank requirement, and explained how this standard does not preclude a utility from removing or pruning vegetation well beyond the MVCD, but primarily focuses on determining when a violation occurs. The SDT asserts that vegetation maintenance must

address the many variables that exist such as growth rates, vegetation maintenance cycles, conductor sag and sway, etc. that could result in an encroachment of the MVCD which would be a direct violation of the standard. The vegetation program must factor in delays and/or mitigation measures associated with stakeholder concerns, but must clearly communicate the need for maintenance to ensure strict compliance with this zero-tolerance standard.

Organization	Yes or No	Question 2 Comment
SERC Vegetation Management sub-committee	Yes	
Hydro One Networks	Yes	
Northeast Power Coordinating Council	Yes	
Platte River Power Authority Substation Maintenance Group	Yes	
Bonneville Power Administration	Yes	BPA prefers the stratified levels of violation severity presented in the table for R1 and R2. Foot note #2 on page 8 needs to be clarified with respect to arboricultural activities or horticultural or agricultural activities. What specifically does this phrase refer to? Foot note #4 on page 12 needs to be clarified with respect to arboricultural activities or horticultural or agricultural activities. What specifically does this phrase refer to?
<p>Response: The SDT thanks you for your comments.</p> <p>The SDT has changed footnote 2 to read as follows:</p> <p>This requirement does not apply to circumstances that are beyond the control of a Transmission Owner subject to this reliability standard,</p>		

Organization	Yes or No	Question 2 Comment
<p>including natural disasters such as earthquakes, fires, tornados, hurricanes, landslides, wind shear, fresh gale, major storms as defined either by the Transmission Owner or an applicable regulatory body, ice storms, and floods; human or animal activity such as logging, animal severing tree, vehicle contact with tree, or installation, removal, or digging of vegetation. Nothing in this footnote should be construed to limit the Transmission Owner’s right to exercise its full legal rights on the ROW.</p> <p>The SDT has changed footnote 4 (now footnote 6 in the revised standard) to read as follows:</p> <p>Circumstances that are beyond the control of a Transmission Owner include but are not limited to natural disasters such as earthquakes, fires, tornados, hurricanes, landslides, ice storms, floods, or major storms as defined either by the TO or an applicable regulatory body.</p>		
NERC Staff	No	<p>The sentence was added to the rationale but the phrase “in order of increasing severity” is not in the requirement or their associated VSLs. NERC staff does not support the language in the rationale box which differentiates the VSL based on skill level of maintenance personnel rather than the impact to reliability of the encroachment. The VSL should be based on whether or not the owner managed the vegetation to prevent encroachment and therefore be binary. See additional comments submitted separately regarding combining R1 and R2.</p>
<p>Response: The SDT thanks you for your comments. VSLs should not be assigned based on the impact to reliability, as is proposed by the commenter. NERC’s VSL Guidelines state the following regarding VSLs: “This is not the same as saying that the requirement is really important and any noncompliance would have an adverse reliability impact – the impact to reliability should be addressed through the VRF, not the VSL.” However, the SDT has made changes to reword the rationale in R1 and R2 to further explain how program performance must successfully account for the relationships between types of encroachments, faults and outages, various types of failed maintenance, and how the various types of failed maintenance have historically been associated with known vegetation related events.</p>		
Pepco Holdings Inc and Affiliates	Yes	
FirstEnergy	No	<p>For the Requirement R1 and R2 VSLs, we suggest that the proposed Moderate (fall-ins) and High (blowing together) VSL be interchanged. We believe that fall-ins are more severe encroachments than blowing together and the categories listed in the compliance section support this point.</p>

Organization	Yes or No	Question 2 Comment
		Category 1 (grow-ins) is most severe, followed by Category 2 & 3 (fall-ins) and Category 4 (blowing together).
<p>Response: The SDT thanks you for your comments. The choice of the VSL for the fall-ins versus the blowing together was made by the SDT using logic in the language in the rationale text box for R1: “The types of failure to manage vegetation are listed in order of increasing degrees of severity in non-compliant performance as it relates to a failure of a TO’s vegetation maintenance program, since the encroachments listed require different and increasing levels of skills and knowledge and thus constitute a logical progression of how well, or poorly, a TO manages vegetation relative to this Requirement.”</p>		
Dominion Electric Market Policy	Yes	
Southern Company Transmission	Yes	
Arizona Public Service Company	No	This is a reliability standard and the TO should know what its clearance needs are at all rated conditions, especially considering today’s technology. If the TO manages to this standard there is no need for R1 and R2.
<p>Response: The SDT thanks you for your comments. Elimination of R1 and R2 would be considered as a lessening of the standard.</p>		
Salt River Project	Yes	
Tampa Electric Company	Yes	Adds clarity to the VSL from an audit perspective, this is an improved description to the Standard.
<p>Response: The SDT thanks you for your comments.</p>		
NextEra Energy	Yes	Although NextEra Energy Inc. (NextEra), including Florida Power & Light Company, agrees with the changes referenced for R1 and R2, NextEra is concerned that the exemptions identified in footnote

Organization	Yes or No	Question 2 Comment
		<p>2 for “...arboricultural activities or horticultural or agricultural activities...,” and similar language in footnote 4, are too broad. For example, this language appears to include an exemption for a landowner, who, during arboricultural activities or horticultural or agricultural activities, causes a vegetation contact with a transmission line (e.g., cutting or lifting a tree into a transmission line). This places the Transmission Owner in the difficult position of a landowner arguing it is exempt from a controllable risk. Thus, the “...arboricultural activities or horticultural or agricultural activities...” references should be removed from footnote 2, and the similar language in footnote 4</p>
<p>Response: The SDT thanks you for your comments. The SDT made the suggested changes.</p>		
SDG&E	Yes	
ASSET MANAGEMENET	Yes	
Hydro-Quebec TransEnergie (NCR07112)	Yes	
Kansas City Power & Light	No	<p>These proposed Requirements, Measures and Violation Severity Levels as written do not give credit to the Transmission Owners for effectively monitoring their systems and taking appropriate actions in regard to vegetation clearing. Why does it make sense to punish and penalize a Transmission Owner for discovering an encroachment when they take the appropriate actions to remedy the condition before any facility outage occurs that results in compromising the reliability of the Bulk Electric System? These Requirements, Measures and VSL’s should recognize the good practices of effective response to a vegetation condition and penalize ineffective response. Recommend the SDT consider including appropriate language to recognize effective remedial actions by Transmission Owners and by doing so, recognize effective efforts instead of punishing them. In addition, proving encroachments have not occurred will pose audit challenges in determining that encroachments have not occurred for the Auditors as well as Registered Entities. If no encroachments occur, then there is nothing to report or record. This is a weak platform to stand</p>

Organization	Yes or No	Question 2 Comment
		<p>compliance on. Facility interruption events caused by vegetation contacts is definitively measurable and recordable. Recommend the SDT reconsider the concept of compliance with FAC-003 on the basis of sustained outages and remove the references regarding encroachments only. Recommend the SDT remove the LOWER VSL language from Requirements R1 and R2 and revise the Requirements and Measures to reflect the same.</p>
<p>Response: The SDT thanks you for your comments. The MVCD was established as a beginning of a series of “building blocks” for a good program. R3 requires that a TO add to MVCD distances with further considerations for the variables of conductor movement and the variables associated with vegetation growth when designing the TO’s overall vegetation management approach(s). The net result of this “building block” approach is the management of vegetation at clearance distances much greater than the MVCD distances. Other related requirements of this “Defense in Depth” Standard serve to address any number of scenarios which may arise or hinder the TO’s ability to always strictly adhere to the management approach(s) established within R3. Thus the other requirements of this Standard provide the latitude for “appropriate actions to remedy the condition” without penalty. Further, it is obvious that trees which have encroached inside of the MVCD are clear evidence of a failed vegetation management program.</p>		
Manitoba Hydro	Yes	
Central Maine Power Company - IberdrolaUSA	Yes	
BC Hydro	Yes	
American Transmission Company, LLC	Yes	
American Electric Power	No	<p>American Electric Power believes that the phrase "arboricultural activities or horticultural or agricultural activities" was mistakenly introduced into Footnotes 2 and 4, and should be deleted from both footnotes. If the phrase remains in the Standard, it may empower orchard growers, landowners and others to plant trees on the right of way and challenge Transmission Owners'</p>

Organization	Yes or No	Question 2 Comment
		rights to perform maintenance on the presumption that the standard will exempt the TO from violating the outage or encroachment requirements.
Response: The SDT thanks you for your comments. The SDT made the suggested changes.		
Baltimore Gas and Electric Co.	Yes	
TVA	Yes	
Niagara Mohawk Power Corporation (dba National Grid)	Yes	
CenterPoint Energy	Yes	
Duke Energy	Yes	<p>We agree with the drafting team’s approach, and also agree with reinstating reporting of Category 3 (Fall-ins from outside the ROW) in the Additional Compliance Information section. The SDT responded to comments submitted with the last ballot that: “Zero tolerance for vegetation caused outages is a stated goal of FERC and NERC as it relates to this standard. This policy is part of FAC-003-1 and in concept did not change with the proposed version. The SDT recognizes this concern and has developed gradation taking into account line criticality in VRF’s and type of outage not contained in the current version FAC-003-1. Finally, it is also important to note that each and every incident or potential violation is investigated and addressed based on the specific circumstances surrounding the particular event. These investigations should necessarily take into consideration and recognize the utility’s individual efforts in responding to an encroachment situation.” In addition, we believe that clarifying changes need to be made to footnotes 2 and 4. Clarify footnote 2 by removing the phrase “arboricultural activities or horticultural or agricultural activities” and replacing it with the phrase “installation of”. Similarly, clarify footnote 4 by removing the phrase “arboricultural, horticultural or agricultural activities”, and replacing it with the phrase “or human</p>

Organization	Yes or No	Question 2 Comment
		activities such as installation, or removal or digging of vegetation.”
<p>Response: The SDT thanks you for your comments. The SDT made the suggested changes to remove references to arboricultural, horticultural or agricultural activities from the footnote 2, but did not adopt the suggestion for the new footnote 6 which replaces the footnote 4 to which you refer” because that footnote 4 is concerned with completing the annual work plan, The SDT does not envision that actions by property owners such as installation, or removal or digging of vegetation as a valid impediment to completion of the annual work plan. However this term is relevant in R1 and R2 and as such is within foot note 2 because such actions do occur from time to time without the transmission Owner’s knowledge and do then result in conditions that could lead to encroachments and outages before the Transmission Owner has the opportunity to rectify the condition.</p>		
South Carolina Electric and Gas	Yes	
Oncor Electric Delivery Company LLC	Yes	
Ameren	Yes	This is more in alignment with a results-based reliability standard.
<p>Response: The SDT thanks you for your comments.</p>		
Individual		
Consolidated Edison Company of New York, Inc. - Transmission Line Maintenance	Yes	
USACE	Yes	

Organization	Yes or No	Question 2 Comment
CECD	Yes	
Entergy Services, Inc	Yes	
Orange and Rockland Utilities, Inc.	Yes	
National Grid	Yes	
Western Electricity Coordinating Council	Yes	
Georgia Transmission Corp.	Yes	
Northern Indiana Public Service Company	No	<p>While there are some enhancements to the organization and content of the standard such as the addition of the Guidelines and Technical Basis section, clarification of what constitutes evidence of compliance, and tailoring of VSL severity levels for the requirements based on the risk each poses to the likelihood of contributing to a cascade, too many elements present in FAC-003-1 and which are vital to preventing vegetation caused outages and maximizing system reliability, have been eliminated from FAC-003-2. Specifically, the elimination of concrete, declared and audited clearance standards between vegetation and conductors (the existing Clearance 1 and Clearance 2 (R1.2)) Requirements) in the revised standard is a major defect that will decrease system reliability. It has been indispensable for NIPSCO when communicating with stake holders (governments, interest groups, land owners, the public, etc.) to point to these clearance standards to give credibility and support to the kind of tree removal and trimming that is necessary to achieve the stated objective of zero preventable tree caused outages. Without these declared clearance standards in the NERC standard, utility vegetation managers will constantly be challenged by stake holders to show them that such work is required rather than an elective choice on the utility's part. One of the key lessons learned from the 2003 blackout and First Energy's overgrown ROW tree</p>

Organization	Yes or No	Question 2 Comment
		<p>problem was that individual land owners, local governments, and interest groups will exert pressure on the utility to only do the minimum amount of vegetation management. Without external and enforceable Vegetation Clearance Standards and by returning to a pre-2003 regime where the extent of vegetation clearing is left to the individual discretion and pressures at each utility, there is no doubt that tree clearance conditions will deteriorate over time and put system reliability at greater risk of vegetation contact.</p>
<p>Response: The SDT thanks you for your comments. At the request of FERC in Order 693, the SDT was asked to eliminate the fill-in-the-blank clearance requirements that are currently in FAC-003-1. A proven Engineering calculation was utilized to determine when a transmission line could spark over to vegetation without direct contact. Based on this calculation, each utility must determine what clearance levels need to be maintained as part of their TVMP. The current version does not preclude a utility from removing or pruning vegetation well beyond the MVCD, it just establishes a line in the sand that determines when a violation occurs. Individual TOs must establish a program that addresses the many variables that exist such as growth rates, vegetation management cycles, conductor sag and sway, etc. that could result in an encroachment of the MVCD which would be a direct violation of the standard. Establishing a specific clearance value to be attained during vegetation management activities is too prescriptive and is in direct conflict with the Results-Based Standard initiative that the SDT is currently implementing. Each TO must factor in delays and/or mitigation measures associated with stakeholder concerns but must clearly communicate the challenges with maintaining strict compliance with this zero-tolerance standard.</p>		

3. In response to comments received regarding the term “investigation” in M1/M2, the SDT substituted “confirmation...by the Transmission Owner..” in its place, among other minor edits to these measures. Do you agree? If answer is no, please explain.

Summary Consideration: 34 of the 40 comments agreed with the change. One of the affirmative comments noted the need to make a minor change in the Guidelines and Technical Basis to assure conformance with the standard language; that change was made.

One commenter questioned what would compel an entity to document and report outages. The SDT feels that this issue is addressed by the NERC Sanctions guidelines.

It was noted that the last two paragraphs in M1 and M2 were not really measures and should be addressed in the requirements. The requirements now include this language in footnote 3.

Two commenters wished to include language to exempt brief encroachments into the MVCD due to falling trees. The SDT chose not to make that change due to concerns raised by regulatory observers.

One commenter felt that a violation should occur for any calculated potential for an MVCD encroachment. The SDT noted that the MVCD is a beginning of a series of “building blocks” for a program to ensure reliability within the line’s rating and all rated electrical operating conditions. R3 requires that a TO add to MVCD distances with further considerations for the variables of conductor movement and the variables associated with vegetation growth when designing the TO’s overall vegetation management approach(s). Additionally there is a “Defense in Depth” in this Standard to address any number of scenarios which may arise or hinder the TO’s ability to always strictly adhere to the management approach(s) established within R3. Thus the other requirements of this Standard provide the latitude for appropriate actions to remedy the condition without penalty.

One comment replied that there was no value to the measure due to the lack of reference to a violation for any calculated potential MVCD encroachment. The SDT pointed again to requirement R3 which requires this to be addressed in the maintenance strategies in R3.

One commenter suggested to delete the reference to measures in the evidence retention section; the SDT chose to retain the existing language.

Organization	Yes or No	Question 3 Comment
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Organization	Yes or No	Question 3 Comment
SERC Vegetation Management sub-committee	Yes	
Hydro One Networks	Yes	
Northeast Power Coordinating Council	Yes	
Platte River Power Authority Substation Maintenance Group	Yes	
Bonneville Power Administration	Yes	
NERC Staff	No	Concur with restating as mentioned above. Other issues remain regarding data reports indicating no sustained outages or real-time observations. These measures appear to indicate that if the outages or real-time observations are not documented then an encroachment didn't occur. What will compel an entity to document these occurrences? In addition, the last two paragraphs of the Measure are not really measures. They would be better served as part of the Requirement.
<p>Response: The SDT thanks you for your comments. The issue of how does one prove that an event did not occur is problematic. A TO must document the inspections it completes. If an inspection does not note an encroachment then none was observed. The NERC Sanction Guidelines provide adequate sanctions for the dishonest. The SDT agrees that the last two paragraphs are not measures and would belong in the requirement. The SDT has moved them to the requirement as footnotes.</p>		
Pepco Holdings Inc and Affiliates	Yes	

Organization	Yes or No	Question 3 Comment
FirstEnergy	Yes	
Dominion Electric Market Policy	Yes	
Southern Company Transmission	No	We would recommend the middle paragraph of M1 and M2 be revised as follows: “If a later confirmation of a Fault by the TO shows that vegetation encroachment within the MVCD has occurred from vegetation growing into or blowing into the conductor within the ROW, this shall be considered the equivalent of a Real-time observation. Brief encroachments caused by a falling tree going through the MVCD is not considered an encroachment.”
<p>Response: The SDT thanks you for your comments. The SDT is sympathetic to your concern. In fact, the SDT had originally crafted language similar to that which you suggested. However, due to concerns expressed by regulators and others, the exemption for encroachment violations due to falling vegetation from inside the right of way was removed.</p>		
Arizona Public Service Company	No	The TO should be managing for reliability. The system is not static, like vegetation it moves and changes over time and that fluctuation should be taken into account to maintain reliability at all rated conditions.
<p>Response: The SDT thanks you for your comments. The SDT agrees with your statement, and in that vein, the MVCD was established as a beginning of a series of “building blocks” for a program to ensure reliability within its rating and all rated electrical operating conditions. R3 requires that a TO add to MVCD distances with further considerations for the variables of conductor movement and the variables associated with vegetation growth when designing the TO’s overall vegetation management approach(s). The net result of this “building block” approach is the management of vegetation at clearance distances much greater than the MVCD distances. Other related requirements of this “Defense in Depth” Standard serve to address any number of scenarios which may arise or hinder the TO’s ability to always strictly adhere to the management approach(s) established within R3. Thus, the other requirements of this Standard provide the latitude for appropriate actions to remedy the condition without penalty. Further, trees which have encroached inside the MVCD are evidence of a deficiency in vegetation maintenance.</p>		

Organization	Yes or No	Question 3 Comment
Salt River Project	Yes	
Tampa Electric Company	Yes	Confirmation allows for the potential of a greater number of “action items” than just investigation.
<p>Response: The SDT thanks you for your comments. We agree that confirmation is necessary before an event is determined to be vegetation related.</p>		
NextEra Energy	Yes	
SDG&E	Yes	
ASSET MANAGEMENET	Yes	
Hydro-Quebec TransEnergie (NCR07112)	Yes	
Kansas City Power & Light	Yes	
Manitoba Hydro	Yes	
Central Maine Power Company - IberdrolaUSA	Yes	
BC Hydro	Yes	
American Transmission Company, LLC	Yes	
American Electric Power	No	For increased clarity, AEP offers the following change to the second paragraph of M1, as well as the

Organization	Yes or No	Question 3 Comment
		<p>second paragraph of M2. The original text “If a later confirmation of a Fault by the Transmission Owner shows that a vegetation encroachment within the MVCD has occurred from vegetation within the ROW, this shall be considered the equivalent of a Real-time observation” should be replaced with ““If a later confirmation of a Fault by the Transmission Owner shows that a vegetation encroachment within the MVCD has occurred from vegetation growing into or blowing together with the conductor within the ROW, this shall be considered the equivalent of a Real-time observation. A brief encroachment caused by falling vegetation passing through the MVCD is not considered an encroachment in this requirement”.</p>
<p>Response: The SDT thanks you for your comments. The SDT is sympathetic to your concern. In fact, the SDT had originally crafted language similar to that which you suggested. However, due to concerns expressed by regulators and others, the exemption for encroachment violations due to falling vegetation from inside the right of way was removed.</p>		
Baltimore Gas and Electric Co.	No	<p>M1 & M2 bullet: “Real-time observation of any MVCD encroachments.” implies that real-time observation of vegetation encroachment ensures reliable operation the Bulk Electric System. The reliability standard objective states;”To improve the reliability of the electric Transmission system by preventing those vegetation related outages that could lead to Cascading.”However, real time observation of current operating conditions provides no assurance that vegetation will not lead to outages since it doesn’t take into consideration the full conductor range of motion including maximum sag. BGE recommends removing the language. If an inspector finds vegetation encroaching into the MVCD during a visual inspection he / she should immediately initiate an Immediate Threat Notification. Therefore, this measure has no value.</p>
<p>Response: The SDT thanks you for your comments. The SDT agrees with your statement and in that vein, the MVCD was established as a beginning of a series of “building blocks” for a program to ensure reliability within its rating and all rated electrical operating conditions. R3 requires that a TO add to MVCD distances with further considerations for the variables of conductor movement and the variables associated with vegetation growth when designing the TO’s overall vegetation management approach(s). The net result of this “building block” approach is the management of vegetation at clearance distances much greater than the MVCD distances. Other related requirements of this “Defense in Depth” Standard serve to address any number of scenarios which may arise or hinder the TO’s ability to always strictly adhere to the management approach(s)</p>		

Organization	Yes or No	Question 3 Comment
<p>established within R3. Thus the other requirements of this Standard provide the latitude for appropriate actions to remedy the condition without penalty. Further, trees which have encroached inside the MVCD are evidence of a deficiency in vegetation maintenance.</p>		
TVA	Yes	
Niagara Mohawk Power Corporation (dba National Grid)	Yes	
CenterPoint Energy	Yes	
Duke Energy	Yes	<p>However, this change was not completely made in paragraph five of the Guideline and Technical Basis document. There the phrase “an investigation” should be replaced by the phrase “a later confirmation”</p>
<p>Response: The SDT thanks you for your comments. The SDT made the suggested change.</p>		
South Carolina Electric and Gas	Yes	
Oncor Electric Delivery Company LLC	Yes	
Ameren	Yes	
Individual		
Consolidated Edison Company of New York, Inc. - Transmission Line	Yes	

Organization	Yes or No	Question 3 Comment
Maintenance		
USACE	Yes	
CECD	No	<p>Suggested Modification to the Measure - "If an after-the-fact analysis of a Fault by the Transmission Owner determines that a vegetation encroachment within the MVCD has occurred from vegetation within the ROW, this shall be considered the equivalent of observing an encroachment in Real-Time."</p> <p>CECD would also like to comment on the Evidence Retention section, as it relates to Measures. The Evidence Retention section states that the Transmission Owner retains data or evidence to show compliance with Requirement R1, R2, R3, R5, and R7, Measures M1, M2, M3, M5, M6 and M7 for three calendar years...." Measures provide examples of evidence that a Transmission Owner can produce to show compliance with the associated Requirement but are not separate Requirements to be managed so reference to Measures should be deleted from the Evidence Retention section of the standard.</p>
<p>Response: The SDT thanks you for your comments. The SDT prefers to keep the existing language, which has been widely accepted by industry, since it is substantially the same as you suggest. With respect to the Evidence Retention section: The NERC evidence retention guidelines provided to SDTs recommend including a reference to the associated requirements and measures.</p>		
Entergy Services, Inc	Yes	
Orange and Rockland Utilities, Inc.	Yes	
National Grid	Yes	
Western Electricity	Yes	

Organization	Yes or No	Question 3 Comment
Coordinating Council		
Georgia Transmission Corp.	Yes	
Northern Indiana Public Service Company	Yes	

4. In response to comments received that requirement R3 is unclear with respect to intent, the SDT added “maintenance strategies”. Do you agree this clarifies the intent? If answer is no, please offer alternative language.

Summary Consideration: 36 responses were in agreement, 2 disagreed with no comments and 2 disagreements included comments.

A concern was raised with regard to using the MVCD as a distance “to manage a vegetation program” and asked the SDT to provide a buffer distance. The SDT explained that the MVCD was established as a beginning of a series of “building blocks” for a program to ensure reliability within its rating and all rated electrical operating conditions. R3 requires that a TO add to MVCD distances with further considerations for the variables of conductor movement and the variables associated with vegetation growth when designing the TO’s overall vegetation management approach(s). The net result of this “building block” approach is the management of vegetation at clearance distances much greater than the MVCD distances. Other related requirements of this “Defense in Depth” Standard serve to address any number of scenarios which may arise or hinder the TO’s ability to always strictly adhere to the management approach(s) established within R3. Thus the other requirements of this Standard provide the latitude for appropriate actions to remedy the condition without penalty. Further, trees which have encroached inside the MVCD are evidence of a deficiency in vegetation maintenance. A performance based standard is not prescriptive in nature but gives guidance to a TO on “what” to accomplish rather than “how” to accomplish it.

Another agreeable response requested R5 and R7 to include a relationship between the document that is developed for maintenance strategies and the annual work plan. The SDT explained that the references to the work plan in R5 and R7 are sufficient. The SDT considers maintenance strategies and work plans to be separate functions. Avoiding the reference to the work plans in R3 minimizes confusing the two functions.

One disagreement stated that the term “maintenance strategies” was not helpful and recommends the following: “Each Transmission Owner shall have a documented vegetation management plan that includes maintenance strategies, procedures, processes, and specifications it uses to prevent the encroachment of vegetation into the MVCD of its applicable lines that include(s) the following:” The SDT notes that Requirement 3 is a results-based competency requirement and that having a TVMP as required in version 1 is simply a matter of having documentation, but there was no stipulation or concern for the quality of the TVMP as called for by version 1. In R3 of the revised Standard, the aspect of quality is introduced. The Transmission Owner must show that it has maintenance strategies in place that will logically keep vegetation from encroaching into the MVCD.

Another disagreement stated that the TVMP shall demonstrate the TO’s ability to manage the system at all rated conditions to maintain reliability. The SDT agrees that this is the purpose of R3 and referenced the language in the rationale text for R3 clarifies - “... documentation provides a basis for evaluating the competency of the Transmission Owner’s vegetation program. There may be many acceptable approaches to maintain clearances. Any approach must demonstrate that the Transmission Owner avoids vegetation-to-wire conflicts under all Ratings and all Rated Electrical Operating Conditions. See Figure 1 for an illustration of possible conductor locations.” A TVMP is one example of an approach to which this refers.

Organization	Yes or No	Question 4 Comment
SERC Vegetation Management sub-committee	Yes	
Hydro One Networks	Yes	
Northeast Power Coordinating Council	Yes	
Platte River Power Authority Substation Maintenance Group	Yes	
Bonneville Power Administration	Yes	The TO procedures / policies and specifications shall demonstrate the TO’s ability to manage the system at all rated conditions to maintain reliability.BPA believes that the intent is clear, but the fundamental approach of using the MVCD (table 2) to manage a vegetation program is still problematic. These values are flashover distances and are way too close. This is acknowledged in a footnote to table 2 but no identification of allowable buffers/distances between energized phase conductors at rated temperatures and vegetation is discussed (this is left up the transmission owners). Clarity is needed on this topic. Setting a finite distance limit based on recognized standards, good science and risk avoidance should be done for the industry. BPA previously made this comment during the drafting of the standard. It was not addressed then, nor has it been

Organization	Yes or No	Question 4 Comment
		addressed now.
<p>Response: The SDT thanks you for your comments. The SDT agrees with your statement, and in that vein, the MVCD was established as a beginning of a series of “building blocks” for a program to ensure reliability within its rating and all rated electrical operating conditions. R3 requires that a TO add to MVCD distances with further considerations for the variables of conductor movement and the variables associated with vegetation growth when designing the TO’s overall vegetation management approach(s). The net result of this “building block” approach is the management of vegetation at clearance distances much greater than the MVCD distances. Other related requirements of this “Defense in Depth” Standard serve to address any number of scenarios which may arise or hinder the TO’s ability to always strictly adhere to the management approach(s) established within R3. Thus the other requirements of this Standard provide the latitude for appropriate actions to remedy the condition without penalty. Further, trees which have encroached inside the MVCD are evidence of a deficiency in vegetation maintenance. A performance based standard is not prescriptive in nature but gives guidance to a TO on “what” to accomplish rather than “how” to accomplish it.</p>		
NERC Staff	No	<p>Adding the term “maintenance strategies” is not helpful in the requirement. NERC staff recommends the following: “Each Transmission Owner shall have a documented vegetation management plan that includes maintenance strategies, procedures, processes, and specifications it uses to prevent the encroachment of vegetation into the MVCD of its applicable lines that include(s) the following:”</p>
<p>Response: The SDT thanks you for your comments. Requirement R3 is a results-based competency requirement. Having a TVMP as required in version 1 is simply a matter of having documentation. There was no stipulation or concern for the quality of the TVMP as called for by version 1. In R3 of the revised Standard, the aspect of quality is introduced. The Transmission Owner must show that it has maintenance strategies in place that will logically keep vegetation from encroaching into the MVCD.</p>		
Pepco Holdings Inc and Affiliates	Yes	
FirstEnergy	Yes	
Dominion Electric Market	Yes	

Organization	Yes or No	Question 4 Comment
Policy		
Southern Company Transmission	Yes	
Arizona Public Service Company	No	The TVMP shall demonstrate the TO's ability to manage the system at all rated conditions to maintain reliability.
<p>Response: The SDT thanks you for your comments. We agree that this is the purpose of R3. Please note the language in the rationale text for R3 clarifies - "... documentation provides a basis for evaluating the competency of the Transmission Owner's vegetation program. There may be many acceptable approaches to maintain clearances. Any approach must demonstrate that the Transmission Owner avoids vegetation-to-wire conflicts under all Ratings and all Rated Electrical Operating Conditions. See Figure 1 for an illustration of possible conductor locations." A TVMP is one example of an approach to which this refers.</p>		
Salt River Project	Yes	
Tampa Electric Company	Yes	Good addition, adds clarity and improves overall understanding of the requirement.
<p>Response: The SDT thanks you for your comments.</p>		
NextEra Energy	Yes	
SDG&E	Yes	
ASSET MANAGEMENET	Yes	
Hydro-Quebec TransEnergie (NCR07112)	Yes	

Organization	Yes or No	Question 4 Comment
Kansas City Power & Light	Yes	
Manitoba Hydro	Yes	
Central Maine Power Company - IberdrolaUSA	Yes	
BC Hydro	Yes	You could also include the term “maintenance standards”.
<p>Response: The SDT thanks you for your comments. Either word could work – however since most commenters agreed with the use of the word, ‘strategies’ the SDT did not adopt the suggestion to use the word, ‘standards’.</p>		
American Transmission Company, LLC	Yes	
American Electric Power	Yes	
Baltimore Gas and Electric Co.	Yes	
TVA	Yes	
Niagara Mohawk Power Corporation (dba National Grid)	Yes	
CenterPoint Energy	Yes	
Duke Energy	Yes	

Organization	Yes or No	Question 4 Comment
South Carolina Electric and Gas	Yes	
Oncor Electric Delivery Company LLC	Yes	
Ameren	Yes	This clearly defines “intent”.
<p>Response: The SDT thanks you for your comments.</p>		
Individual		
Consolidated Edison Company of New York, Inc. - Transmission Line Maintenance	Yes	
USACE	No	
CECD	Yes	Because Requirement 5 and 7 use the phrase annual work plan, and there is not a Requirement to develop a work plan, this Requirement should include a relationship between the document that is developed for maintenance strategies and the annual work plan.
<p>Response: The SDT thanks you for your comments. The SDT considers the references to the work plan in R5 and R7 sufficient. The SDT considers maintenance strategies and work plans to be separate functions. Avoiding the reference to the work plans in R3 minimizes confusing the two functions.</p>		
Entergy Services, Inc	Yes	

Organization	Yes or No	Question 4 Comment
Orange and Rockland Utilities, Inc.	Yes	
National Grid	Yes	
Western Electricity Coordinating Council	Yes	
Georgia Transmission Corp.	Yes	
Northern Indiana Public Service Company	No	

5. The SDT added clarifying language in M7 to explain how the annual work plan percentage complete calculation is to be performed. Is this adequate? If no, please provide improved examples.

Summary Consideration: There were 31 agreements and 8 disagreements. Seven comments noted that the question should have referenced R7 not M7. The SDT acknowledged that observation and agreed that the reference should have been R7. The SDT added the term “of applicable lines” to M7 and to the VSL’s for R4, R5 and R6. The SDT also made minor changes to VSLs for R7 to conform to verbiage in R6.

One commenter agreed with R7 changes and noted “there is no requirement....that a plan is....developed.” The SDT sees no reason to add such a requirement for documentation, since a fundamental precept of results-based standards is that having a requirement to complete any particularly activity also presupposes that the elements required to complete the activity are included in the requirement, even if unstated.

One affirmative comment requested that exceptions for crew performance and availability be noted explicitly: the SDT noted that while the requested condition could be listed, the list is not meant to be exhaustive, and that any modification to the work plan can be made provided it does not allow encroachment into the MVCD. The same commenter wished to include language related to derating the line to indicate that the purpose of such action would be to “ensure continued...reliability.” The SDT saw problems associated with proving that a reliability contribution by a derating was in fact accomplished and chose to retain the existing language. The same commenter wished to remove Category 3 outage reporting, but the SDT sees great value in the investigation of each vegetation related outage and feels that this reporting is justified to ensure that all outages are sufficiently investigated. The same commenter requested removing the reference to “defense-in-depth” in the Background section; the SDT chose to leave this reference as is. Lastly that same commenter suggested that “promptly” could be substituted for “without intentional time delay” in R4, the SDT saw no difference in the two terms and chose to keep the existing verbiage.

A commenter suggested in lieu of the annual inspection requirement that a time interval based on growth rates be used instead. The SDT chose to retain the existing annual interval based on industry’s consensus support for the one year interval in a previous posting of the Standard.

A commenter requested that “of applicable lines” be added to the requirements and VSL verbiage to clearly denote applicability within the requirements and VSL verbiage. The SDT made those changes as requested to the requirements, measures and VSLs. That same commenter requested that Category 3 outages be reported by type A & B similar to other categories. The SDT saw no value to this change since Category 3 serves its purpose without that distinction being made. The same commenter requested

changes to the ROW definition; the SDT chose to retain the existing language since it has been vetted with significant industry consensus.

Another comment suggested adding reference to financial reports in the examples for reasons for modifications to the annual plan, the SDT feels that such a reference to financial conditions was inappropriate. The same commenter noted the need for clarity in the structure of the VSLs ; the SDT made those changes. The same commenter requested clarity on use of Table 2 when an entity has a voltage category not in the table - the team added language to clarify that where the TO has transmission lines operated at nominal levels not listed in Table 2, the TO should use the clearance distances based on the maximum system voltage (i.e. for a nominal system voltage of 287 kV the appropriate distances would be for a maximum system voltage of 362 kV). Two commenters requested an example be added to the Guidelines and Technical Basis section for R7, similar to the examples in R6, to clarify that the % calculations should be based on the Annual Plan as modified; the SDT added the example as requested.

Another commenter questioned the 48-hour reporting in the 12/17/2008 NERC Public Notice - NERC Compliance Process #2008-001. The SDT discussed the issue with NERC staff and did not receive any direction that it would be necessary to add this as a Requirement within the Standard

Additional comments were offered by NERC staff as a separate attachment to comments submitted with the comment form, and those responses are covered following this question.

Organization	Yes or No	Question 5 Comment
SERC Vegetation Management sub-committee	Yes	
Hydro One Networks	Yes	
Northeast Power Coordinating Council	No	There is no percentage language in M7. Is it R7 that is being referred to?
<p>Response: The SDT thanks you for your comment. The SDT meant to refer to R7.</p>		

Organization	Yes or No	Question 5 Comment
Platte River Power Authority Substation Maintenance Group	Yes	
Bonneville Power Administration	Yes	
NERC Staff	Yes	Actually, R7 contains the clarifying language. It should be noted that although R7 indicates the TO shall complete 100% of the VM work plan, there is no requirement in this draft that a plan is actually developed.
<p>Response: The SDT thanks you for your comments. The SDT meant to refer to R7, not to M7. As to the seeming lack of an actual requirement for a work plan, the SDT asserts that a fundamental precept of results-based standards is that having a requirement to complete any particularly activity also presupposes that the elements required to complete the activity are included in the requirement, even if unstated.</p>		
Pepco Holdings Inc and Affiliates	Yes	
FirstEnergy	Yes	<p>Although we generally agree with Requirements R7 and its measure M7, we suggest adding clarifying wording to bullet 4 which states "Crew or contractor availability/ Mutual assistance agreements". In addition to availability, contractor performance may be another issue that requires modification to the work plan. We suggest adding another bullet that reads "Crew or contractor performance". The rationale behind this addition is to address poor safety, productivity and/or quality issues with a crew or contractor assigned to perform vegetation management. FirstEnergy provides the following additional comments and suggestions not related to the specific questions asked in this posting:</p> <ol style="list-style-type: none"> 1. Requirement R5 - We appreciate this requirement which recognizes that the TO may face situations in which it is constrained from performing its vegetation management and are permitted

Organization	Yes or No	Question 5 Comment
		<p>to seek alternative methods. However, there may be instances where the TO has exhausted all course of action to perform vegetation and must utilize other means to prevent vegetation encroachment into the MVCD. Therefore, in these instances, "continued vegetation management" as stated in the requirement is not possible, but other methods such as line deratings and deenergizing of lines may have to be used. We ask that the phrase "to ensure continued vegetation management to prevent encroachments" be changed to read "to ensure continued reliability of the BES".</p> <p>2. Compliance Section - Category 3 - We suggest removing this category from the standard. Since fall-ins from outside the ROW are not considered a violation of this standard per Requirements R1 and R2, the entity should not have to report these fall-ins.</p> <p>3. Objectives - We do not believe that is necessary for the Objectives statement to include the "defense-in-depth" concept which is actually an overarching goal of results-based standards in general and not specific to FAC-003-2. We suggest removing this phrase.</p> <p>4. Background Section 5 - Similar to our comment above regarding defense-in-depth in the objectives statement, this is an overarching goal of results based standard and not specific to FAC-003-2. Therefore, we suggest removing the explanation of defense-in-depth from the background section.</p> <p>5. Vegetation Inspection Definition - We suggest replacing the word "hazard" with "risk".</p> <p>6. Requirement R4 - We do not agree with the phrase "without any intentional time delay" and suggest it be removed. This phrase is not measurable. Also, other drafting teams have attempted to incorporate this statement but industry comments have persuaded them to remove it; for example, the Reliability Coordination drafting team (Project 2006-06) initially proposed the same phrase but later removed it in their development of the COM/IRO standards. At the very least standards development should be consistent throughout the NERC standards drafting teams. We suggest the following as wording for Requirement R7: "Each Transmission Owner shall ensure the control center holding switching authority for the applicable transmission line is promptly notified</p>

Organization	Yes or No	Question 5 Comment
		<p>when the Transmission Owner has confirmed the existence of a vegetation condition that can potentially cause a Fault."</p>
<p>Response: The SDT thanks you for your comments. The SDT considered your request to add to the acceptable reasons for modifications the bullet, "Crew or contractor performance," and observes that since R7 states "Modifications to the work plan in response to changing conditions or to findings from vegetation inspections may be made (provided they do not allow encroachment of vegetation into the MVCD)..." the bullet could be added, but the SDT did not intend the list of examples to be exhaustive and decided not to add the new bullet.</p> <p>In reference to the comment 1) that the phrase "to ensure continued vegetation management to prevent encroachments" be changed to read "to ensure continued reliability of the BES," the SDT agrees that the corrective actions of de-ratings and de-energization as you suggest must be considered when vegetation cannot be maintained to prevent encroachment into the MVCD, and those examples are explicitly listed in M5. If a de-rating is used, it must be sufficient to prevent the encroachment into the MVCD. The de-rating or de-energization of the line removes the threat of an energized line and adjacent vegetation having less separation than the MVCD (i.e. less Fault probability), but the realized reliability value of those actions will depend on the events that occur while the condition persists. For these reasons the SDT retains the R5 language without changes.</p> <p>In reference to the comment 2) "Compliance Section - Category 3 -...suggest removing this category from the standard," an investigation of the location of the tree with respect to the edge of the ROW for fall-ins must be made to determine whether the event represents a self-report of a violation or not. A record of those findings when the tree is found to be outside the ROW is valuable for both the Compliance Monitoring and Enforcement and the TO, should any questions later arise; therefore the SDT chose to retain the Category 3 reporting.</p> <p>Regarding your comment 3) "Objectives - We do not believe that is necessary for the Objectives statement to include the "defense-in-depth" concept which is actually an overarching goal of results-based standards in general and not specific to FAC-003-2. We suggest removing this phrase." The SDT notes that the Purpose language is a general statement, and could be expanded or contracted without impacting the requirements. However, since the current language has undergone extensive debate, comment and revision the SDT sees no compelling reason to request industry to review another change at this time.</p> <p>Regarding your comment 4) "Background Section 5 -.... suggest removing the explanation of defense-in-depth from the background section" The SDT notes again that the background section language is a general statement and could be expanded or contracted without impacting the requirements. However, since the defense-in-depth drove many of the changes in the standard the SDT thinks this section is relevant and should be retained.</p>		

Organization	Yes or No	Question 5 Comment
<p>Regarding your comment 5) “suggest ...for Requirement R7(actually R4): "Each Transmission Owner shall ensure the control center holding switching authority for the applicable transmission line is promptly notified when the Transmission Owner has confirmed the existence of a vegetation condition that can potentially cause a Fault." The SDT has searched for but not found a time limit more suitable than “without intentional time delay.” An extensive list of event scenarios between the time that a condition is observed and the time it is reported can be studied. In the final analysis the intent is for the notification to be made to allow time for the control center to take steps to maintain reliability if possible before conditions deteriorate further. “Without intentional time delay” is as sufficient and as measurable as “promptly”.</p>		
<p>Dominion Electric Market Policy</p>	<p>No</p>	<p>The red-line revision does not indicated changes to M7; therefore, Dominion is unable to evaluate the clarifying language identified in this question. If the SDT meant to reference R7, we agree that the clarification is adequate.</p>
<p>Response: The SDT thanks you for your comments. The SDT means to reference R7.</p>		
<p>Southern Company Transmission</p>	<p>Yes</p>	
<p>Arizona Public Service Company</p>	<p>Yes</p>	
<p>Salt River Project</p>	<p>Yes</p>	
<p>Tampa Electric Company</p>	<p>Yes</p>	<p>This allows flexibility for the T.O. to determine the type of “unit” used in calculating the percentage complete.</p>
<p>Response: The SDT thanks you for your comments.</p>		
<p>NextEra Energy</p>	<p>Yes</p>	
<p>SDG&E</p>	<p>Yes</p>	

Organization	Yes or No	Question 5 Comment
ASSET MANAGEMENET	Yes	
Hydro-Quebec TransEnergie (NCR07112)	No	<p>The minimum frequency of Vegetation Inspection should be based upon an average growth rates of smaller regions than all North America. Example, above the latitude of about 50 degrees North, the vegetation growth rates is limited. We think that Vegetation Inspection frequency should be relaxed to 3 years for those areas in Canada. As indicator of the minimum frequency requested in R6, we suggest to use a global vegetation index like the Normalized Difference Vegetation Index (NDVI). The NDVI has been in use for many years to measure the vigor of vegetation growth among other things. http://earthobservatory.nasa.gov/Features/MeasuringVegetation/</p>
<p>Response: The SDT thanks you for your comments. In FERC Order 693, para. 721, FERC stated, “The Commission continues to be concerned with leaving complete discretion to the transmission owners in determining inspection cycles, which limits the effectiveness of the Reliability Standard.”</p> <p>The SDT established an inspection cycle at least once per calendar year and with no more than 18 months between inspections on the same ROW. There was a survey of the industry in a previous request for comments to this standard. The response to that survey is the basis for the use of the 1-year period. While there was a range of growth rates across the continent, the SDT had sufficient feedback to recommend the 1-year cycle. The inspection also would cover inspecting for fall-in threats. Please note that vegetation inspections can also be combined with other line inspections.</p>		
Kansas City Power & Light	No	<p>1) R7 states “Each Transmission Owner shall complete 100% of its annual vegetation work plan...”. We suggest to be consistent with all other sections of the rule that it should read, “Each Transmission Owner shall complete 100% of its annual vegetation work plan for all applicable lines...”. Otherwise, leaves room for interpretation to include all lines including those not defined as applicable. Also require these same revisions to row R7 of the table “Time Horizons, Violation Risk Factors, and Violation Severity Levels”.</p> <p>2) In the “Additional Compliance Information” section Categories 1, 2, and 4 are each defined to have an A & B component to recognize the severity level difference for “applicable transmission lines” identified versus not identified “as an element of an IROL or Major WECC Transfer Path”. However, Category 3 does not separate these two scenarios however it appears that the same</p>

Organization	Yes or No	Question 5 Comment
		<p>distinction should apply.</p> <p>Additional comments:Vegetation Inspection Definition Recommend the SDT consider removing the conditional language, “that are likely to pose a hazard to the line(s) prior to the next”. Vegetation inspections are not dependent on a predisposed condition of vegetation. Suggest the SDT remove that phrase and consider the following definition:The systematic examination of vegetation conditions on a maintained transmission line Right-of-Way under the Transmission Owner’s control under a planned maintenance or inspection which may be combined with a general line inspection.</p>
<p>Response: The SDT thanks you for your comments. 1) The team has made the appropriate modifications, adding the reference to ‘applicable lines’ where necessary. 2) Since the Category 3 outages do not have any violations associated with their occurrences, the SDT did not see the value in reporting by type A or type B lines. 3) The SDT chooses to keep the current language because it addresses the core need to find conditions that will need correcting before the next planned maintenance or next planned inspection is performed.</p>		
Manitoba Hydro	Yes	
Central Maine Power Company - IberdrolaUSA	Yes	
BC Hydro	Yes	<p>You could also include other documentation such as monthly financial and program variance reports.</p> <p>Additional Comments</p> <p>Table 1: R6 definitions could be clearer. Suggested clarification:</p> <p>VSL Lower - Greater than 95% of annual inspections complete but less than 100% complete.</p> <p>VSL Moderate - Greater than 90 % of annual inspections complete but less than 95% complete</p> <p>VSL High - Greater than 85% of annual inspections complete but less than 90% complete</p> <p>VSL Severe - Less than 85% of annual inspections completed</p>

Organization	Yes or No	Question 5 Comment
		<p>Table 1 R7 definitions could be clearer. Suggested clarification:</p> <p>VSL Lower - Greater than 95% of annual work plan complete but less than 100% complete.</p> <p>VSL Moderate - Greater than 90 % of annual work plan complete but less than 95% complete</p> <p>VSL High - Greater than 85% of annual work plan complete but less than 90% complete</p> <p>VSL Severe - Less than 85% of annual work plan completed</p> <p>Table 2: This table includes a number of common nominal system voltages vs MVCD distances by altitude. However, some utilities have other non-standard voltages, in our case 287 kV, which forms a significant part of their system. It may be worthwhile for the standard to state what a utility should follow when a standard voltage class is not present - i.e. go to the next higher voltage MVCD if a particular voltage isn't in the table, or direct the utility to do its own Gallett Equation calculations for their unique voltage class. Otherwise, different utilities may create a non-standard solution that wouldn't address the risk.</p>
<p>Response: The SDT thanks you for your comments. The SDT did not intend for the list of examples to be exhaustive. To the extent that financial or variance reports include evidence of the work units completed they may be useful as supportive evidence. inappropriate.</p> <p>The SDT used the NERC VSL Guidelines to develop the VSLs; therefore the SDT feels that the VSL's for R7 are adequate as listed. The proposed VSLs would leave some 'gaps' – for example the proposed VSLs aren't clear on what VSLs is assigned when an entity has completed exactly 95% of its inspections.</p> <p>Table 2 in the Standard lists both the nominal system voltages and the corresponding maximum system voltages. The clearance distances listed for each nominal system voltage were calculated using the maximum system voltage values. Therefore, where the TO has transmission lines operated at nominal levels not listed in Table 2, the TO should use the clearance distances based on the maximum system voltage (i.e. for a nominal system voltage of 287 kV the appropriate distances would be for a maximum system voltage of 362 kV). The SDT has added language to the guidelines and technical basis section to clarify this point.</p>		
American Transmission	Yes	

Organization	Yes or No	Question 5 Comment
Company, LLC		
American Electric Power	Yes	
Baltimore Gas and Electric Co.	Yes	
TVA	No	I suggest that footnote 4 be changed by removing the reference to arbicultural, horticultural or agricultural activities.
<p>Response: The SDT thanks you for your comments. The recommended changes have been made to footnote 4.</p>		
Niagara Mohawk Power Corporation (dba National Grid)	No	There is currently no percentage language in M7. If they are referring to R7, then YES it is adequate.
<p>Response: The SDT thanks you for your comments. The question should have referred to R7.</p>		
CenterPoint Energy	No	CenterPoint Energy could not find any reference to an example percentage complete calculation for the annual work plan in the Standard for M7, in the Guideline and Technical Basis for M7, nor in the Technical Reference for M7. There was such an example for M6 which was helpful. CenterPoint Energy recommends such an example be included for M7.
<p>Response: The SDT thanks you for your comments. The percentage complete should be based on the annual plan as modified.</p> <p>The SDT has changed the language in the standard to reflect more clearly that the percentage complete should be based on the plan as modified, and the following example has been added to the Guideline and Technical Basis:</p> <p>For example, when a Transmission Owner identifies 1,000 miles of 230 kV transmission lines to be completed in the TO’s annual plan, the Transmission Owner will be responsible completing those identified miles. If a TO makes a modification to the annual plan that does not put the transmission system at risk of an encroachment the annual plan may be modified. If 100 miles of the annual plan is deferred until next year the calculation to determine what percentage the TO completed for the current year would be: $1000 - 100 \text{ (deferred miles)} = 900$ modified annual</p>		

Organization	Yes or No	Question 5 Comment
<p>plan, or $900 / 900 = 100\%$ completed annual miles. If a TO only completed 875 of the total 1000 miles with no acceptable documentation for modification of the annual plan the calculation for failure to complete the annual plan would be: $1000 - 875 = 125$ miles failed to complete then, 125 miles (not completed) / 1000 total annual plan miles = 12% failed to complete.</p>		
Duke Energy	Yes	
South Carolina Electric and Gas	Yes	
Oncor Electric Delivery Company LLC	Yes	
Ameren	Yes	This is directed toward R7 rather than M7.
<p>Response: The SDT thanks you for your comments.</p>		
Individual		
Consolidated Edison Company of New York, Inc. - Transmission Line Maintenance	Yes	<p>The added language for the annual work plan percentage complete calculation is shown in R7 not M7 as stated in the question. In the Guideline and Technical Basis Section for Requirement R6, there is a sample calculation shown for the amount of lines the TO failed to inspect. An example should also be included for Requirement R7 since there is some confusion regarding how modifications to the work plan affect the calculation. In the Lower VSL column for R7, it states that the TO failed to complete up to 5% of its annual vegetation work plan (including modifications if any). If a TO operates 100 lines and submits a justified modification that affects 10 miles of lines, the total number of units in the final amended plan is 90 miles. When you read the VSL, it is somewhat confusing since the information in parenthesis says that the calculation 'includes' the modifications. Should it state 'excludes modifications if any' or the VSLs can simply be re-written to state that ..The TO failed to complete up to x% of the final amended plan.' Also, the VSLs in R6 and</p>

Organization	Yes or No	Question 5 Comment
		R7 should be consistent with each other: R6 says '...TO failed to inspect 5% or less....' and R7 says '...TO failed to complete up to 5%....' They both should use the same verbiage in each VSL whether it is 'x% or less' or 'up to and including x%.'
<p>Response: The SDT thanks you for your comments. The percentage should be based on the plan as modified. The SDT has changed the language in the standard to reflect this more clearly.</p>		
USACE	Yes	
CECD	Yes	
Entergy Services, Inc	Yes	<p>The actual clarifying language seems to have been added to R7 instead of M7 (as stated above). The clarifying language provides benefit as added to R7, and should remain in R7. Additionally, we feel that, in an effort to promote consistency with the other 6 Requirements, the term "on applicable Transmission lines" should be added at the end of the first sentence of R7, as it is listed in all other R's. The first sentence of R7 currently reads: "Each Transmission Owner shall complete 100% of its annual vegetation work plan to ensure no vegetation encroachments occur within the MVCD". We feel the first sentence should read "Each Transmission Owner shall complete 100% of its annual vegetation work plan to ensure no vegetation encroachments occur within the MVCD on applicable transmission lines".</p>
<p>Response: The SDT thanks you for your comments. The first sentence does now contain the term "applicable lines".</p>		
Orange and Rockland Utilities, Inc.	Yes	
National Grid	No	There is currently no percentage language in M7. If they are referring to R7, then YES it is adequate.

Organization	Yes or No	Question 5 Comment
<p>Response: The SDT thanks you for your comments. The SDT was referring to R7.</p>		
<p>Western Electricity Coordinating Council</p>	<p>Yes</p>	<p>We support the clarifying language in M7. However, since there is no generic "Any other Comments" section associated with this on-line comment form, we raise a question here. On December 24, 2008, NERC issued an e-mail to all Transmission Owners in which it referenced its December 17, 2008 Public Notice - NERC Compliance Process #2008-001, Vegetation-related Transmission Outage Reporting. The notice stated that: "Due to the potential severity of transmission outages caused by vegetation associated with Standard FAC-003-1, NERC is encouraging each Transmission Owner to self-report all Category 1 and Category 2 transmission outages related to vegetation to the Regional Entity within 48 hours utilizing the 48-hour vegetation reporting notice form provided by your appropriate Regional Entity." We do not see any reference to a 48-hour reporting notice in this version of the standard. Is this still a requirement? The only reference to reporting is in the Additional Compliance Information section and references quarterly reporting only.</p>
<p>Response: The SDT thanks you for your comments. The SDT is aware of the 48 hour, voluntary self-report request from NERC for outages where vegetation may be involved. The SDT also agrees with the general philosophy proposed by WECC that all requirements associated with a Standard are best served in the Standard. Also, the SDT did examine the general concept of an "investigation" type requirement. However, the SDT did not pursue this because it did not satisfy the basic rule for requirements as embedded in the Standards Process Manual, "What functional entity shall do what under what conditions to achieve what reliability objective." After the fact investigation and reporting, while important to the Compliance and Enforcement (CMEP) aspect of mandatory and enforceable Standards, does not achieve a reliability objective such that the failure to comply with the Requirement would jeopardize reliability. The SDT also notes that any useful (other than CMEP) information related to an outage that is subsequently reported under the NERC voluntary request would generally be available for industry use through TADS. Finally, the SDT did discuss the issue with NERC staff and did not receive direction that it was necessary, or desirable, to include one or more elements of the voluntary request in this Standard.</p>		
<p>Georgia Transmission Corp.</p>	<p>Yes</p>	
<p>Northern Indiana Public</p>	<p>Yes</p>	

Organization	Yes or No	Question 5 Comment
Service Company		

Additional Comments from NERC:

In addition to the comments NERC submitted to the five questions on the official comment form, NERC staff has numerous other comments to make with regard to this Draft 5. Before that, NERC staff first wants to acknowledge the significant effort and talent that the industry brought to attempt to improve upon Reliability Standard FAC-003-1 – Vegetation Management. This Draft 5 of FAC-003-2 – Vegetation Management entailed significant industry work towards understanding the issue, compromising on proposals and attempting to reach consensus utilizing the NERC Standards Development Process. While NERC staff believes this draft represents some improvements to the existing standard, it does not believe the draft in its totality represents an improvement to the existing standard. FERC Order 693 approved the existing Vegetation Management Standard and it provided a number of directives for NERC with regard to further developing the Standard in order to improve it. Such directives and NERC comments regarding how the directives were addressed included:

- FERC Directive - Develop compliance audit procedures, using relevant industry experts, which would identify appropriate inspection cycles based on local factors. The Commission is dissuaded from requiring the ERO to create a backstop inspection cycle at this time.

NERC Comment – Compliance audit procedures are outside the scope of the SDT and this Draft 5. Although not required by the Commission, the SDT added an annual inspection cycle to the Standard, with a maximum of 18 months between inspections. NERC believes this requirement represents an improvement to the existing Standard and does not believe it is overly burdensome on utilities.

Response: [The SDT thanks you for your comments.](#)

- FERC Directive - Remove the general limitation on lines 200kV and above to include lines that have an impact on reliability.
 - Do not reduce facilities included
 - Develop an acceptable definition for the applicability of this Reliability Standard that covers facilities that impact reliability while not unreasonably increasing the burden on transmission owners.
 - Evaluate the suggestions proposed by LPPC, APPA and Avista that regional entities should determine which facilities this standard applies to

NERC Comment – NERC believes Draft 5 partially addresses this issue by increasing applicable facilities to IROL lines under 200kV. NERC staff is also concerned about

- The possibility that this very addition could limit a regional entity's desire to include additional lines.
- The exclusion of facilities inside the fenced area of switching stations, stations and substations. These excluded areas still pose a vegetation related outage risk and the rationale for excluding them is not compelling enough.
- The separation of IROL (any voltage level) and non-IROL (200 kV and above) Transmission Lines into separate requirements with different VRFs. NERC believes all Transmission Lines subject to this standard should be under the same requirement and associated VRFs. IROL lines are relatively few and do not warrant their own requirement. By having lower VRFs for non-IROL lines, this version of the standard is weaker than the existing standard. These two requirements should be a single requirement with high VRFs

Response: The SDT thanks you for your comments. In the guidelines provided by NERC to the drafting team, the SDT is dissuaded from writing 'fill in the blank' requirements. In version one, the team directed the RO to designate which critical lines below 200kV should fall under the standard without defining what critical meant. This is a 'fill-in-the-blank.' There is no assurance that this applicability would be applied consistency across North America. The SDT followed FERCs suggestion to take into account "...the suggestions by Progress Energy, SERC and MISO to limit applicability to lower voltage lines associated with IROL..." The team went further by including WECC transfer paths. The SDT asserts that the inclusion of both IROL lines and WECC Transfer paths addresses the comments by LPPC, APPA and Avista along with Progress Energy, SERC and MISO. The NERC Staff needs to consider that the comments all contend that each inclusion of a below 200kV line is an added burden to the rate payers. Not to give some direction to the Planning Coordinator would allow a planner to include ALL transmission lines, which would be an unreasonable burden to the rate payer. We added this language for clarity at the request of stakeholder concerns.

Neither the standard nor its original SAR were intended to cover fenced or discrete locations such as substations, which entail entirely different issues compared to linear corridors. Often substations are owned by either DPs or GOs, therefore, the TO may not have rights inside the fenced facility. The requirements in this standard would not be sufficient to include stations and switch yards. Should there be a compelling need for a vegetation standard for fenced facilities, a new SAR should be introduced.

The SDT asserts that different VRF's for IROL and non-IROL lines strengthens the reliability of the standard. Vegetation managers that do not know which lines are IROL or WECC Transfer Paths may be inappropriately limiting resources allocated to vegetation management for an IROL line or a WECC Transfer Path. A vegetation manager must ensure that the IROL lines and WECC transfer paths are absolutely clear. By correctly identifying the risk associated with an IROL line and/or a WECC Transfer Path, the standard helps to assure that appropriate resources are applied.

VRF guidelines require an analysis of impact to BES. We did that by considering the relative risk levels to the interconnected transmission system of an interruption of a non-IROL/non-Transfer Path line versus the interruption of IROL/Transfer Path lines. The fact that the PENALTY might be higher or lower DOES NOT AFFECT the strength or weakness of the Standard, since even the Medium Risk Factor value in the Base Penalty Matrix in the

sanctions guidelines is \$350,000 per violation per day. In both R1 and R2 of Version 2 there is zero-tolerance for encroachments, and Version 2 increases the scope to include observed encroachments without Faults, and confirmed vegetation Faults without Sustained Outages which were not clearly included in Version 1. The 1) distinction by separation of VRFs and 2) inclusion of clear language to inspect for, investigate, correct, and report to all known reliability threats will strengthen the standard.

- FERC Directive - Develop a Reliability Standard that defines the minimum clearance needed as an improvement to IEEE 516 which FERC does not believe is appropriately used for purposes of reliability and/or safety.

NERC Comment – Draft 5 makes a change from IEEE 516 and utilizes Gallet equations for industry clearances. While NERC believes these equations are technically accurate, NERC is concerned about the usefulness of the clearances determined under this methodology as put forth in this draft. NERC is not aware of any utility which would maintain clearances as specified in this draft as it has no built in safety factor. NERC is further concerned that utilities could be mandated by courts of law to reduce existing maintained clearances to values much closer to those determined by the methodology in this draft.

Response: The SDT thanks you for your comments. As with a Transmission Owner's determination of its Clearance 1 distances under version 1 of the Standard, Requirement 3 of the revised Standard begins with the MVCD distances (just as Clearance 1 began with IEEE-516 distances) and then requires additional consideration for conductor movement, vegetation growth variables, and the utility's maintenance approach. These are essentially the same considerations required by version 1 of the existing Standard when developing Clearance 1 distances. Therefore, nothing has been "lost" in the revised Standard. In fact, the proposed Standard is better from an auditing perspective because the overall logic and rationale used by the TO in complying with the new Requirement 3 is now subject to an overall test of adequacy, competency and reasonableness. Also, informal polls conducted by the SDT show that many Transmission Owners are unsuccessful in utilizing Clearance 1 as a tool, because it is easily challenged by landowners as being an arbitrary fill-in-the-blank value set by the Transmission Owner. Further, if the Transmission Owner would cut only to Clearance 1 instead of to the full extent of its legal rights, courts could rule against the Transmission Owner for failing to exercise its full legal rights. Thus, in the revised Standard, the Transmission Owner has neither gained nor lost any tool or advantage in dealing with landowners, but the SDT asserts that the bar has been raised with regard to the adequacy of the Transmission Owner's overall vegetation management program.

- FERC Directive - Define rights-of-way to encompass the required clearance areas instead of the corresponding legal rights, and the standards should not require clearing the entire right-of-way when the required clearance for an existing line does not take up the entire right-of-way.

NERC Comment – NERC staff believes this directive was met and is addressed in question 1 of the comment form.

Response: The SDT thanks you for your comments.

- FERC Directive – NERC should address the proposed modifications through its Reliability Standards development process.

NERC Comment – NERC staff believes this directive was met in preparing this draft standard.

Response: The SDT thanks you for your comments.

- FERC Directive - Collect outage data for transmission outages, analyze it, and use the results of this analysis and information in the development of the Reliability Standard.

NERC Comment – NERC staff believes more work needs to be done in this area. NERC staff believes the drafting team should consider modifying the Periodic Data Submittal to include if outages occur on Federal land.

Response: The SDT thanks you for your comments. After discussion with NERC staff, NERC has agreed to address this issue outside the work of the SDT. The SDT recommends that NERC staff consider adding a field to the TADS data to capture vegetation outages on applicable lines on federal lands.

Other Draft 5 Issues

- Removal of a formal transmission vegetation management program, of Clearance 1 and of a documented vegetation management plan.

NERC Comment – NERC does not support the removal of these items. NERC does not believe these changes represent an improvement to the standard and does not believe this existing requirement is overly burdensome to utilities. NERC does not understand why industry would not be willing to be held accountable to their vegetation management plans. NERC is concerned that the removal of these items could make it difficult for utilities to obtain permissions needed to maintain clearances between inspection cycles which are prudent for reliability and safety due to intervenor or landowners exercising their rights and then pointing to this new standard as a the basis for smaller clearances. . Requirement 3 in this draft needs to include a documented plan and to clearly identify the specifics to be included in the plan and provide clarity of expectations. The SDT may not support such specifics as not being consistent with results-based standards development but NERC staff believes otherwise.

Response: The SDT thanks you for your comments. The existing series of items in Requirement R3 along with R3.2 are collectively with the balance of the standard equivalent to the term TVMP. These combined items in R3 are the defense in depth approach that require the TO to maintain vegetation so that it does not enter into the MVCD before the next planned vegetation work, thus accomplishing the equivalent of a C1 without a fill-in-the-blank issue.

- Objectives: A qualifier in the standard Objective that it should apply to preventing the risk of vegetation related outages *that could lead to cascading outages*.

NERC Comment – This qualifier limits the purpose of the standard, which should be to prevent vegetation related outages, not cascading outages. The more outages there are, the less the overall system reliability. An outage does not necessarily have to lead to a cascading outage to be significant and represent a reasonable risk to the BES. References to cascading outages should be removed.

Response: The SDT thanks you for your comments. The SDT has thoughtfully considered every aspect of this version of the Standard to ensure that the pieces are consistent, aligned, and support each other. The SDT added the phrase “with Cascading” not to limit the Standard, but rather to recognize that the 200 kV bright-line for applicability (which is not in question) is founded on the very notion that the 200 kV serves as a proxy for "The Big Three": Cascading, Separation, and Instability. The SDT considered adding all of these conditions to the Purpose statement. However, given the focus of this Standard is on vegetation, and vegetation was deemed to be related to Cascading (i.e. 2003 Blackout report), rather than the other two undesirable system conditions, it seemed more logical and consistent to include the likely outcome of an unmanaged vegetation condition on a Transmission Owner's system. If NERC Staff has evidence that other two are likely related to vegetation, it has not yet been provided to the SDT.

Unlike other types of outages on lines (such as those caused by failed insulators, broken cross-arms, rotten poles and lightning flashover), vegetation outages uniquely affect lines when they are heavily loaded and thus susceptible to a cascading event.

- Background: This section excludes vegetations fall-ins and blow-ins from outside the ROW on the basis that they are not preventable.

NERC Comment – Many fall-ins and blow-ins from outside the ROW are preventable. Trees outside the ROW must be managed adequately to prevent outages on the BES. The work to remove and/or prune trees outside the ROW may be more difficult and costly than such work inside the ROW, but that is not sufficient reason to exclude this work. In addition, utilities wishing to perform such work might be prevented from doing so by regulatory bodies based upon the lack of a specific requirement in this standard.

Response: The SDT thanks you for your comments and has reworded the Background by removing the term non-preventable.

- Requirement 1 & 2: These requirements discuss preventing encroachments into the MVCD of an applicable line that is operating within its Rating.

NERC Comments –NERC staff would like confirmation that “Rating” is intended to include all published ratings issued by the facility owner, such as Normal, Emergency, etc.

Response: The SDT thanks you for your response. The glossary term “Rating” is adequate to address the issues you raise.

- Requirement 4: R4 states that “Each Transmission Owner, without any intentional time delay, shall notify...”

NERC Comments: The previous version of the standard included a time limit of 15 minutes once communications became available. This should be reinstated.

Response: The SDT thanks you for your response. The SDT is not aware any posting with a 15 minute rule included.

- Requirement 7: R7 sets the requirement for each Transmission Owner to complete 100 percent of its annual vegetation work plan.

NERC Comments – NERC is concerned that the draft doesn’t have a requirement for a Transmission Owner to have a documented annual plan making Requirement 7 unenforceable. In addition, Requirement 7 has a number of other qualifiers that would seem to allow manipulation of the annual plan to ensure compliance.

Response: The SDT thanks you for your comments. The SDT asserts that a fundamental precept of results-based standards is that having a requirement to complete any particularly activity also presupposes that the elements required to complete the activity are included in the requirement, even if unstated.

- Draft 5 document quality

NERC Comments – this draft has some typographical errors which need to be fixed. For example, on page 28, reference to use of Table 5 versus Table 7 based on knowledge of maximum transient over-voltage factor is reversed. These edits could probably be handled through a recirculation ballet.

Response: The SDT thanks you for your comments. We agree with the typo you found and we have changed the language in the draft standard.

- Previously raised NERC issues

NERC Comments – NERC staff posted several comments on the Draft 4 version of this standard in July 2010. NERC believes most of the concerns it raised in those comments are not addressed in Draft 5 and continue to be a concern for NERC.

Response: The SDT thanks you for your comments; however there are not enough specifics for the SDT to respond.

- General compliance and audit issues

NERC Comments –

- The whole “sustained outage” concept in R1 (for fall ins and blow ins) is unworkable from an enforcement perspective.
- The difference between a violation and a non-violation in Draft 5 is whether the registered entity was fortunate with regard to an encroachment. This part should be rewritten to say that any tree contact is a violation. VRFs and VSLs could then be used to address whether the violation was minor or serious.
- There could be a lot of litigation over whether “circumstances” were really “beyond the control” of the TO. NERC had previously objected to the implementation of a force majeure clause in the standard. If an entity failed to carry out its annual plan, that should be treated as a violation, and any excuses for failing to do so or for changing the plan mid-year all go to whether the penalty should be \$0 or substantial.
- For the evidence retention period, the entity really should retain evidence of compliance until the next compliance audit. Since some TOs may be on a 6 year audit schedule, the 3 year retention period is not sufficient.

Response: The SDT thanks you for your comments.

- The SDT does not understand your comment. The violations under the existing standards are largely due to sustained outages.
- Version 2 has a violation for every known and confirmed encroachment. The Penalty for those encroachments that do not cause Faults is up to \$30,000 per violation per day
- The SDT thanks you for your comments. The SDT believes this language is appropriate for this standard due to the many factors related to vegetation that are truly outside the TO’s control. Unlike the vast majority of other NERC standards, implementation of FAC-003 is not under

the absolute control of the utilities. These influences range from landowner and agency obstacles to weather events, and as such the SDT believes the force majeure provisions should be applicable. The recognition of this provision is also supported by 90% of the industry. An attempt at similar language is contained in version 1 but it is ambiguous and lacks clarity. This language adds clarity and reduces the opportunity for misapplication. Further, TO's must have supporting evidence for claims that situations are "beyond their control".

- The SDT thanks you for your comments, and will use the NERC approved retention times.

End of Report