

Unofficial Comment Form for 4th Draft of FAC-003-2 Transmission Vegetation Management —Project 2007-07 Vegetation Management

Please **DO NOT** use this form to submit comments. Please use the [electronic form](#) located at the site below to submit comments on the 4th Draft of FAC-003-2 Transmission Vegetation Management. Comments must be submitted by, **July 18, 2010**

http://www.nerc.com/filez/standards/Vegetation-Management_Project_2007-7.html

If you have questions please contact Harry Tom at Harry.Tom@nerc.net or by telephone at (860) 550-4157.

Background Information

The purpose of Project 2007-07 Vegetation Management is to:

- Assist in providing an adequate level of reliability for the North American electric Transmission System by verifying that the FAC-003-2 Transmission Vegetation Management standard is complete and that its requirements are set at an appropriate level to ensure reliability.
- Incorporate other general improvements described in the Standard Review Guidelines to bring FAC-003-2 Transmission Vegetation Management into conformance with the latest version of the Reliability Standards Development Procedure and the ERO Sanctions Guidelines.
- Consider comments received from ERO regulatory authorities and stakeholders on FAC-003-1 Transmission Vegetation Management as noted in the NERC Standards Issues Database.
- Satisfy the requirement for review of FAC-003-2 Transmission Vegetation Management within five-year review cycle.

In addition, on January 14, 2010, the NERC Standards Committee endorsed the use of Project 2007-07 Vegetation Management as the prototype for the proof-of-concept for using the results-based criteria for developing a reliability standard. The results-based initiative is intended to focus the collective effort of NERC and industry participants on improving the clarity and quality of NERC reliability standards by developing performance-based, risk-based and competency-based requirements that accomplish a reliability objective through a defense-in-depth strategy, while eliminating documentation-driven requirements that do not have an impact on bulk power system reliability.

The first draft of the revised standard was posted in a 'new' format from March 1-31, 2010 for an 'informal' comment period.

A summary of the SDT considerations for the responses to the March 1, 2010 submittal has been posted on the NERC website in lieu of a full Consideration of Comments Report.

Note-worthy modifications incorporated into this draft 4 of FAC-003-2 Transmission Vegetation Management include:

- Replaced the defined term "Active Transmission Line Right of Way" with footnote number 2 that provides a description of "active transmission line ROW" and added Table 3, "*Minimum Distance from the Centerline of the Circuit to the edge of the active transmission line ROW*" to support that description.

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- Terminology changes in the “Force Majeure” statement related to the terms “reasonable” and “human activity”
- Terminology changes to Measures M1 and M2 related to observation in real time and the investigation of Faults.
- Changes to Requirement R3 to incorporate the various terms the industry uses for program documentation, and further changes to R3 that address the nature of the mutually dependent variables that can drive different approaches to vegetation maintenance.
- Clarifying verbiage in Requirement R4.
- Removal of the term “flexible” in R7
- Footnote changes for clarification to Table 2

The following questions will assist the SDT in finalizing the development of FAC-003-2 Transmission Vegetation Management. In addition, question #7, relative to Violation Severity Levels, has been included at the direction of the Standards Committee.

For questions where you agree with indicated statement, please state that you agree and if able, please provide supporting documentation. If you disagree with the statement, please explain why you disagree and provide a rationale to support your position. We would appreciate responses to as many of the following questions as possible.

1. The SDT replaced the defined term “Active Transmission Line Right of Way” with footnote number 2 that provides a description of “active transmission line ROW” and added Table 3, “*Minimum Distance from the Centerline of the Circuit to the edge of the active transmission line ROW*” to support that description. Do you agree? Please explain.

- Yes
 No

Comments: The NSRS agrees in whole to the question but has the SDT taken into consideration the difference in ROW may be different in Urban and Rural settings?

2. In response to comments received regarding the terms “reasonable” and “human errors/human activity”, the SDT modified the Other Section and Background Section. Do you agree? Please explain.

- Yes
 No

Comments:

The NSRS believes that the new definition provides greater clarity with respect what does not constitute a compliance violation versus the previous version.

3. In response to comments received regarding the language in M1 and M2, the SDT modified the first bulleted item and added a sentence to the end of the paragraph in M1 and M2. Do you agree? Please explain.

- Yes
 No

Comments:

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4. In response to comments received that requirement R3 is deficient in detail, the SDT modified the requirement. Do you agree? Please explain.

Yes

No

Comments:

The NSRS does not believe that the new specificity that has been added to R3 will improve the reliability of the BES. It is our opinion that the requirement would have been clearer if it had ended after the first sentence. The additional language after the first sentence does not improve clarity. The whole (as written) requirement may be interpreted as a requirement for "each span" of Transmission line that the Requirement will be applied to.

In measures for other requirements the SDT has done a very good job of stating and clarifying (in their opinion) what acceptable forms of evidence are. M3 would benefit from this type of clarification.

5. In response to comments received that requirement R7 is unclear with respect to flexible work plans, the SDT modified the requirement. Do you agree? Please explain.

Yes

No

Comments:

The NSRS has issue with the word "may" (and its components along with the associated bulleted points) and recommends that it is removed and placed in the rational box.

6. In response to comments received that requirement R1/R2 may not adequately protect the transmission conductors under all conditions of sag and sway, the SDT drafted alternate language for the industry to provide feedback. The SDT did not opt to incorporate this language into "Draft 4" until further comment was solicited from industry. Which do you prefer? Please comment on your choice in the comment box below:

***"Alternate R1/R2.** Each Transmission Owner shall manage the floor of its Active Transmission Line ROW in accordance to one of the following at all times:*

- A) *A fixed maximum vegetation height of 15 feet from the ground at the mid-half of the span and 20 feet in the outside quarters of the span, or,*
- B) *A calculated maximum vegetation height that is the difference between the minimum conductor height at "max sag" minus MVCD minus cycle growth, or,*
- C) *A calculated minimum vegetation to conductor clearance that is the sum of "max sag" in the span plus MVCD plus cycle growth, or,*
- D) *A value determined by the Transmission Owner to provide a separation between the conductor and the vegetation that is comparable to options A, B, or C.*

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- E) Any alternative approach that ensures no encroachment occurs within MVCD, considering the sag and sway of the conductor throughout its operating range under rated conditions.
- F) A value to provide a separation between the conductor and the vegetation that is the sum of MVCD, and a value that considers the sag and sway of the conductor throughout its operating range under rated conditions plus 10 feet."

NOTE: The SDT suggests similar language as found in the posted draft for measures M1/M2 may be appropriate with this alternate R1/R2.

- Draft 4 version of R1/R2
- Alternate version of R1/R2

Comment:

It is the NSRS's opinion that that the requirement as currently written in version 4 is consistent with the intent of a standard; i.e. stating what is required as opposed to stating how to achieve what is required.

- 7. The drafting team and NERC staff disagree on an appropriate set of VSLs for Requirements R1 and R2 and the Standards Committee has directed that both sets of VSLs be posted for stakeholder comments.

The drafting team has proposed the following VSLs for R1 and R2:

VSLs for R1 and R2 Proposed by the VM SDT				
R#	Lower	Moderate	High	Severe
R1 VM SDT	The Transmission Owner had an encroachment into the MVCD observed in real time, absent a Sustained Outage.	The Transmission Owner had an encroachment due to a fall-in from inside the active transmission line ROW that caused a vegetation-related Sustained Outage.	The Transmission Owner had an encroachment due to blowing together of applicable lines and vegetation located inside the active transmission line ROW that caused a vegetation-related Sustained Outage.	The Transmission Owner had an encroachment due to a grow-in that caused a vegetation-related Sustained Outage.
R2 VM SDT	The Transmission Owner had an encroachment into the MVCD observed in real time, absent a Sustained Outage.	The Transmission Owner had an encroachment due to a fall-in from inside the active transmission line ROW that caused a vegetation-related Sustained Outage.	The Transmission Owner had an encroachment due to blowing together of applicable lines and vegetation located inside the active transmission line ROW that caused a vegetation-related Sustained Outage.	The Transmission Owner had an encroachment due to a grow-in that caused a vegetation-related Sustained Outage.

VSLs for R1 and R2 Proposed by the VM SDT

The SDT assigned VSLs for R1 and R2 in accordance with its interpretation of the VSL Guidelines. To support that interpretation, the SDT cites page 3 of the VSL Guideline as justification. The VSL Guideline states that for – “Requirements with Parts that Contribute Unequally to the Requirement: If a requirement has several parts, and the parts contribute unequally to the reliability-related objective of the requirement, then noncompliance with each of the parts should be clearly associated with at least one of the VSLs.”

The VSL Guidelines also goes on to say, “Requirements with Wide Range of Noncompliant Performance: If a requirement has a wide range of noncompliant performance that at least

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partially meets the intent of the requirement, then that requirement should have multiple VSLs. There are many different ways of developing VSLs to categorize different degrees of noncompliant performance. A set of VSLs developed should collectively address all of the elements in the requirement. Thus, if a requirement includes both specific actions and a timeframe for completion of those actions, then the VSLs should address noncompliance with both the completeness of the actions and the timeliness of those actions. Not all VSLs need to address both components of the requirement, but collectively the set of VSLs must address all aspects of the requirement.” The SDT asserts that for Requirement R1 there is indeed a wide range of possible noncompliance for a failure to manage vegetation. Examples could include failure to manage vegetation along an entire line, failure to manage the floor of the right of way, failure to manage the edges of the right of way, or a failure to manage a single tree out of an otherwise-well-managed right of way.

The SDT points to the reliability objectives contained in requirements R1 and R2. The Transmission Owner is required to manage vegetation to prevent encroachments within the MVCD that could lead to Sustained Outages. These objectives address different degrees or types of vegetation encroachments and associated reliability results. For example, not all encroachments lead to Sustained Outages. Moreover, there is an operational differentiation between a fall-in, blow-together or grow-in event. A fall-in has never been known to cause a cascading outage. Therefore the team feels that a Lower VSL is appropriate. A blowing-together-caused fault is somewhat more egregious than a fall-in, as it has the potential for re-occurring and is therefore assigned a Higher VSL. A grow-in from vegetation on the active ROW that causes a sustained outage, on the other hand, has been the only known cause for the initiation of cascading outages to date in North America and this type of vegetation should be appropriately addressed by a Transmission Owner; thus the Severe VSL. For these reasons the SDT feels that the VSL assignments are appropriate.

VSLs for R1 and R2 Proposed by NERC Staff

The Standards Staff is concerned that the VSLs proposed by the VM SDT seem to be based on the likelihood that a violation of the requirement will result in a sustained outage – not in the degree to which the entity violated the requirement. As such, the VSLs developed by the VM SDT don’t support NERC’s VSL Guidelines. Both R1 and R2 require the responsible entity to “. . . manage vegetation to prevent encroachment that could result in a Sustained Outage . . .” Thus, any sustained outage associated with vegetation-related encroachment into the MVCD totally misses the intent of the requirement and meets the criteria for a Severe VSL. The drafting team’s proposed VSL would assign some vegetation-related sustained outages of transmission lines as “moderate” or “high” VSLs.

NERC’s VSL Criteria			
Lower	Moderate	High	Severe
Missing a minor element (or a small percentage) of the required performance The performance or product measured has significant value as it almost meets the full intent of the requirement.	Missing at least one significant element (or a moderate percentage) of the required performance. The performance or product measured still has significant value in meeting the intent of the requirement.	Missing more than one significant element (or is missing a high percentage) of the required performance or is missing a single vital component. The performance or product has limited value in meeting the intent of the requirement.	Missing most or all of the significant elements (or a significant percentage) of the required performance. The performance measured does not meet the intent of the requirement or the product delivered cannot be used in meeting the intent of the requirement.

The Standards Staff proposes the following VSLs:

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VSLs for R1 and R2 Proposed by NERC Staff				
R#	Lower	Moderate	High	Severe
R1 NERC Staff	Not applicable.	Not applicable.	The Transmission Owner failed to manage vegetation to prevent encroachment into the MVCD of a line identified as an element of an IROL or Major WECC transfer path and encroachment into the MVCD as identified in FAC-003-Table 2 was observed in real time absent a Sustained Outage.	The Transmission Owner failed to manage vegetation to prevent encroachment into the MVCD of a line identified as an element of an IROL or Major WECC transfer path and a vegetation-related Sustained Outage was caused by one of the following: <ul style="list-style-type: none"> • A fall-in from inside the active transmission line ROW • Blowing together of applicable lines and vegetation located inside the active transmission line ROW • A grow-in
R2 NERC Staff	Not applicable.	Not applicable.	The Transmission Owner failed to manage vegetation to prevent encroachment into the MVCD of a line not identified as an element of an IROL or Major WECC transfer path and encroachment into the MVCD as identified in FAC-003-Table 2 was observed in real time absent a Sustained Outage.	The Transmission Owner failed to manage vegetation to prevent encroachment into the MVCD of a line not identified as an element of an IROL or Major WECC transfer path and a vegetation-related Sustained Outage was caused by one of the following: <ul style="list-style-type: none"> • A fall-in from inside the active transmission line ROW • Blowing together of applicable lines and vegetation located inside the active transmission line ROW • A grow-in

Which set of proposed VSLs best supports NERC's VSL Criteria?

VSLs proposed by the VM SDT

VSLs proposed by NERC staff

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8. Is there anything that you have not addressed above regarding the draft FAC-003-2 Transmission Vegetation Management standard or the Technical Reference Document? If yes, please provide what you believe should be changed, added or deleted and the rationale for your proposal.

Yes

No

Comments:

- 1.) The NSRS notices that a previous draft concern on including Rationale Boxes plus Guidelines and Technical Basis as part of the NERC Reliability Standard. The NSRS recommends that the SDT either remove these sections or make them separate from the formal standard to eliminate any risk that these may be construed as requirements. *An alternative method is to very clearly identify which parts of the standard are subject to compliance and considered mandatory and which are not considered requirements and are only for guidance in meeting the requirements. Such as; State within in the text that this information "Is not subject to enforcement".*
- 2.) The NSRS believes the Measurements are well written and provide guidance on acceptable compliance evidence related to the requirement.
- 3.) Measurement M2 related to R2 states that outages related to encroachments have records confirming no Real-Time observations of any MVCD encroachments. The NSRS feels this would be hard to prove as a negative. It could require one to show every single patrol or inspection has documentation stating no real time encroachments were observed.
- 4.) Editorial Comment on Draft SDT VSLs for R2: To clarify the statements made for the Moderate, High and Severe VSLs. please add the verbiage, "into the MVCD" after "The TO had an encroachment....."