

Unofficial Comment Form for Transmission Vegetation Management Standard FAC-003-2 (Project 2007-07)

Please **DO NOT** use this comment form. Please use the [electronic comment form](#) located at the link below to submit comments on the proposed standard. Comments must be submitted by **October 24, 2009**. If you have questions please contact Harry Tom at harry.tom@nerc.net.

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

Opening Remarks:

The SDT appreciates the valuable responses provided by the industry and other stakeholders on this Standard revision. We have worked diligently, utilizing those comments and directives in FERC Order 693 to improve this revision.

Given the importance and complexity of this standard, the SDT felt it was appropriate to develop and provide a comprehensive Technical Reference Document (White Paper) to assist in the interpretation and application of this standard. This companion document is included in this posting of FAC-003-2.

We are optimistic that this Standard fully satisfies stakeholder concerns and FERC Order 693 and believe this version will be ready for balloting after this comment period.

Background Information:

The Vegetation Management Standard Drafting Team (SDT) prepared a proposed revision of FAC-003-1 in accordance with the scope as contained in the Standard Authorization Request (SAR). The SAR includes addressing FERC directives in Order 693. These included:

- Removal of 'fill in the blank' components where the Transmission Owner determines the requirement with no limits or direction. Examples include Clearance 1 and "personnel requirements" in version 1.
- Removal of references to the Regional Reliability Organization (RRO) and replacement with the correct designation of Regional Entity (RE).
- Application of new NERC Drafting Team Guidelines (DTG) to the standard. Examples include the replacement of the current compliance section with Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) as referenced in the Sanction Guidelines. Additionally, documentation and implementation elements are separated into different requirements in the proposed standard as required by the DTG.
- Address the applicability and appropriateness of IEEE 516 in determining clearance distances.
- Address applicability of this standard to sub 200kV lines that could place the grid at an unacceptable risk of instability, separation, or cascading failures.
- Address a minimum vegetation inspection frequency that accounts for local factors.
- Address applicability to federal lands.

The initial proposed revision was posted for industry comment during a public comment period from October 27, 2008 to November 25, 2008. The SDT received comments from 66 separate entities on the initial posting of this proposed standard revision. The completed

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Consideration of Comments document spans 279 pages making it one of the largest comment documents for any of the NERC draft standards. There were 17 specific questions and a summary question in the posting.

After careful consideration of FERC Order 693 and all comments from the stakeholders, the Standards Drafting Team (SDT) made revisions to the proposed second in order to make it stronger, clearer and more practical for field implementation. These revisions are fully articulated in the mapping document and should be reviewed by the reader. The SDT also developed a Technical Reference Document (White Paper) to clarify the intent and purpose of each requirement found in FAC-003-2. Many of the significant revisions are, however, highlighted in the following:

The key difference between the current standard and this posting is the requirement that certain vegetation outages are violations of the standard (R5, R6, R7 and R8). These requirements, in a clear and unambiguous manner, address prevention of Sustained Outages due to vegetation.

Key differences between first posting and second posting of proposed FAC-003 -2 include:

- Replaced the Critical Clearance Zone (CCZ) concept found in R4 with a practical field measurement to address commenter's concerns.
- Eliminated the CCZ as the trigger of imminent threat in R2 to address commenters' concerns.
- Added a new part to Requirement R1 - TVMP (1.6) to address commenters' concerns regarding the elimination of Clearance 1. This change requires that the TO account for anticipated conductor movement.
- Developed VRFs and VSLs consistent with the NERC Drafting Team Guidelines.
- Created a second grow-in outage requirement to allow for different VRF levels based on the actual criticality of the line.

The SDT believes that this posting is an improvement over both the FAC 003-1 and the October 27, 2008 posting of FAC 003-2. The following illustrates examples of these improvements.

1. The purpose statement was shortened to be in line with the Drafting Team Guidelines for a more concise purpose statement. The various explanatory objectives in the current standard's Purpose statement are now addressed within the body of the requirements of this second revision.
2. Revised the purpose statement in response to comments about the use of the term Bulk Electric System.
3. The TVMP Requirement found in R1 was re-written to clarify that the objective of the TVMP is to improve reliability by preventing Sustained Outages due to vegetation.
4. Requirement R1, Part 1.6 now requires that the TO effectively describe the strategies used to prevent tree and conductor conflicts, replacing "Clearance 1".
5. Requirement R4 replaces the CCZ concept with a practical "real time" method of observing/measuring vegetation that could cause spark-over.
6. Requirement R2 eliminates the CCZ trigger for the Imminent Threat Process in favor of a more practical field implementation strategy.

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7. Defined Vegetation Inspection as a NERC Glossary term. This definition recognizes that vegetation inspections can be performed concurrently with other transmission line inspections.
8. Defined Active Transmission Line Right-of-Way as NERC Glossary term. This limits applicability of the requirements to the portion of the ROW with active transmission facilities.
9. Established a minimum inspection frequency of one calendar year to address FERC concerns about inspection cycles. This also includes a provision to address impact of natural disasters on schedule attainment.
10. Clarified Applicability section to include all types of land ownerships to address FERC concerns identified in Order 693.
11. Established clear process and responsibility to identify and designate sub 200kV lines which will be subject to the provisions of this standard.
12. Developed VRFs in accordance with the Drafting Team Guidelines to better reflect impact/risk to the reliability of the grid.
13. Developed separate requirements for documentation and implementation of the Imminent Threat Process, Vegetation Inspections, and the Annual Work Plan in accordance with the Drafting Team Guidelines.
14. Replaced Clearance 2 with Minimum Vegetation Clearance Distance (MVCD) based on the Gallet equation. This removes the ambiguity about hypothetical versus real-time clearance while still accounting for conductor movement in R1, Part 1.6.
15. Replaced the Reliability Coordinator (RC) with the Planning Coordinator (PC) as the appropriate entity to designate applicable sub 200kV lines.
16. Clarified Interim Corrective Action Plan as “temporary” in nature when the TO is constrained from getting adequate clearance. The Interim Corrective Action Plan also replaces the term Mitigation Plan avoiding conflicts with the Compliance term “Mitigation Plan.”
17. Eliminated the reporting requirement for Category 3 (fall-in from outside the ROW) outages.
18. Assigned new Sustained Outage reporting categories (1A, 1B, 2 and 4) which will allow tracking and trending to use historical outages.

Analysis of Industry Comments:

Disagreements were high for questions 1, 7, 11, and 15, with values of 52%, 47%, 57% and 94% respectively. Those disagreements related to the use of the term “Bulk Electric System” in the purpose statement, the identification of actions required of the Transmission Operator when implementing the imminent threat procedure in Requirement R1.4, the use of “approaching” the calculated boundary of the Critical Clearance Zone as the threshold for implementation of the imminent threat procedure in requirement R2, and the use of the calculated boundary of the Critical Clearance Zone as a surface for determining clearance violations in R4. The comments contained numerous suggestions for changes to address the disagreements. The other questions were given mostly agreeable remarks; however some changes were made based on those comments.

The SDT has posted its response to the comments submitted in response to the last draft of this standard. The team updated its Technical Reference to align with the changes made to the proposed standard, updated the “mapping” document, and added an implementation plan. Please review these documents and then answer the following questions.

***Please use the [comment form](#) to submit your final responses to NERC.**

1. As stated in the background information above, in response to industry comments, the Requirement for documentation of a TVMP (the new R1) is revised. Additionally the SDT assigned Time Horizons, Violation Risk Factors, and Violation Severity Levels. Do you agree? If not, please explain and propose an alternative.

- Agree
 Disagree

Comments:

A. The requirement in R1.2 that mandates an annual inspection is too onerous. The MRO NSRS urges the retention of the provision in the existing standard that allows the Transmission Owner to set the frequency of inspection. In some areas of the country, annual inspections may not be adequate. Yet in other areas, a longer inspection frequency may be perfectly reasonable and practical. Our point is that inspection frequency should not be treated as if it were "one size fits all". If treated this way, the MRO NSRS feels this could pose a risk to reliability and is not likely to be cost-effective. The Transmission Owner should be allowed some flexibility.

However, if the drafting team disagrees and determines that an annual inspection is to be mandated, the MRO NSRS believes that an exception to the annual inspection is appropriate when a non-subjective advanced technology such as LIDAR is utilized to achieve actual clearance distances. This places the Transmission Owner in a situation where it can rationally determine that the objectively measured distances result in a situation where an inspection need not be performed within the next year. Additionally, the MRO NSRS feels "that takes into account local and environmental factors" is explanatory text and is inappropriate for a requirement. It is suggested that R1.2 be revised to read as follows:

Specify a Vegetation Inspection frequency of at least once per calendar year, unless the Transmission Owner, based on a non-subjective advanced technology, such as LIDAR, determines that a longer inspection period is appropriate.

B. R1.5: the word "temporarily" needs to be removed. Some constraints are not of a temporary nature. For example, the U.S. Forest Service's refusal to allow trimming or removal in accordance with the Transmission Owner's vegetation management guidelines, or in the case where the easement or other instrument allowing the Transmission Owner to occupy the land does not allow vegetation management in accordance with the Transmission Owner guidelines. In such a situation, an interim corrective action process is appropriate but the word "temporarily" is not. What happens if it's more than "temporarily"?

C. R1.6 should be reworded. The existing language is troublesome and confusing. A better alternative would be:

Maintenance strategies must be designed to (a) meet the table 1 clearances in attachment 1, and (b) consider all possible locations of the conductor for rated design conditions.

D. R1.3.3 states that the annual work plan shall...."Be flexible to adjust to changing conditions and to findings from Vegetation Inspections. Adjustments to the plan within the year are permissible." The MRO NSRS is concerned that the wording would not allow a situation where the work plan is not entirely implemented "within the year". There may be instances where you may be justified to postpone the work planned at the end of the year and must be moved into early part of the following year. We understand that this was the SDT's intent; however, the text is not clear that it allows for such deferments. We recommend modifying the requirement to read, "Be flexible to adjust to changing conditions and to findings from Vegetation Inspections. Adjustments to the plan including work deferments into a subsequent year's work plan are permissible."

E. R1.4 states that a process or procedure for response to an imminent threat of vegetation-related sustained outage is required. The MRO NSRS believes that the term "imminent threat" should be a NERC defined term.

F. (R1) Since neither "operating range" nor "rated conditions" are defined NERC terms, this requirement R1 could be open to broad interpretation. As a result, the MRO NSRS recommends that the SDT consider alternatives that will reduce potential ambiguity. FAC-003 currently requires Clearance 2 to be maintained for 'all rated electrical operating conditions.' This suggests that vegetation clearances should be set in a manner such that required clearances will be maintained for conditions that include line loadings at both Normal and Emergency Ratings. The MRO NSRS recommends that the SDT consider additional specificity. Or, we recommend these two terms ("operating range" and "rated conditions") be defined by the SDT.

2. As stated in the background information above, in response to industry comments, the Requirement for implementation of Imminent Threat process/procedure (the new R2) is revised. Additionally the SDT assigned Time Horizons, Violation Risk Factors, and Violation Severity Levels. Do you agree? If not, please explain and propose an alternative.

Agree
 Disagree

Comments: Prefer the distances specified in the current IEEE Standard as opposed to the Gallet equation.

3. As stated in the background information above, in response to industry comments, the Requirement for conducting Vegetation Inspections (the new R3) is revised. Additionally the SDT assigned Time Horizons, Violation Risk Factors, and Violation Severity Levels. Do you agree? If not, please explain and propose an alternative.

Agree

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Disagree

Comments:

MRO NSRS suggests that the referenced footnote 5 be modified to include "species epidemics," such as bark beetles; this footnote 5 should be referenced. Additionally, footnote 5 could be modified to include "species epidemics" between "logging" and "animal severing tree."

R3 states that "Each Transmission Owner shall conduct Vegetation Inspections of all applicable lines (as measured in line miles) in accordance with the frequency specified in its transmission vegetation management program, the MRO NSRS recommends that the phrase "of all applicable lines (as measured in line miles)" be removed from R 3. This is understood by Applicability section A 4.2.

4. As stated in the background information above, in response to industry comments, the Requirement for preventing vegetation encroachments (the new R4) is revised. Additionally the SDT assigned Time Horizons, Violation Risk Factors, and Violation Severity Levels. Do you agree? If not, please explain and propose an alternative.

Agree

Disagree

Comments:

A. The MRO NSRS suggests that the phrase "Minimum Vegetation Clearance Distances" (MVCD) be changed to "Critical Clearance Distance." The use of the word "minimum" creates problems for Transmission Owners when dealing with land owners regarding the necessary vegetation management which is to take place on its easements. "Minimum" creates difficulties in explaining to a land owner why any additional clearance needs to be obtained. That difficulty would be substantially lessened with the use of a term such as "critical", which more readily lends itself to an additional distance such that the vegetation never approaches the critical distance.

B. The MRO NSRS agrees with the intent of including events that would define exceptions for requirements to comply with FAC-003. As an alternative to the approach in the draft Standard of using footnotes, the MRO NSRS recommends that the SDT consider adding a generic "*force majeure*" statement in the applicability section more specifically stating that companies will not be subject to compliance requirements to the extent that events or circumstances beyond their control limit or prevent their abilities to perform.

Here's an example:

Compliance with this standard will not apply should there exist an occurrence, non-occurrence, or other set of circumstances that are beyond the reasonable control of a Registered Entity subject to this Reliability Standard, and are not caused by the fault or negligence of the Registered Entity, including acts of

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God, strike, flood, drought, earthquake, storm, fire, hurricane, tornado, landslides, logging activities, animals severing trees, lightning, epidemic, war, riot, civil disturbance, sabotage, vandalism, terrorism, or action or inaction by any Governmental Authority or individual that restricts or prevents performance to comply with this Reliability Standard.

C. R4 states that "Each Transmission Owner shall prevent encroachment of vegetation into the Minimum Vegetation Clearance Distances (MVCD) listed in FAC-003-2 - Attachment 1....." The MRO NSRS requests the Standard clarify how MVCDs will be interpolated for altitudes not specifically defined in Table 1.

5. As stated in the background information above, in response to industry comments, the Requirement for preventing Sustained Outages due to grow-ins on IROL or Major WECC Transfer Paths (the new R5) is developed. Additionally the SDT assigned Time Horizons, Violation Risk Factors, and Violation Severity Levels. Do you agree? If not, please explain and propose an alternative.

Agree
 Disagree

Comments: N/A

6. As stated in the background information above, in response to industry comments, the Requirement for preventing Sustained Outages due to grow-ins on non-IROL or Major WECC Transfer Paths (the new R6) is developed. Additionally the SDT assigned Time Horizons, Violation Risk Factors, and Violation Severity Levels. Do you agree? If not, please explain and propose an alternative.

Agree
 Disagree

Comments: N/A

7. As stated in the background information above, in response to industry comments, the Requirement for preventing Sustained Outages due to blowing together of vegetation and transmission line conductors (the new R7) is developed. Additionally the SDT assigned Time Horizons, Violation Risk Factors, and Violation Severity Levels. Do you agree? If not, please explain and propose an alternative.

Agree
 Disagree

Comments: N/A

8. As stated in the background information above, in response to industry comments, the Requirement for preventing Sustained Outages due to fall-ins of vegetation (the new R8) is developed. Additionally the SDT assigned Time Horizons, Violation Risk Factors, and Violation Severity Levels. Do you agree? If not, please explain and propose an alternative.

Agree
 Disagree

Comments: N/A

9. As stated in the background information above, in response to industry comments, the Requirement for implementation of annual work plan (the new R9) is developed. Additionally the SDT assigned Time Horizons, Violation Risk Factors, and Violation Severity Levels. Do you agree? If not, please explain and propose an alternative.

Agree
 Disagree

Comments: N/A

10. As stated in the background information above, in response to industry comments, the Requirement for the preparation of list for sub 200kV transmission lines by the Planning Coordinator (the new R10) is developed. Additionally the SDT assigned Time Horizons, Violation Risk Factors, and Violation Severity Levels. Do you agree? If not, please explain and propose an alternative.

Agree
 Disagree

Comments:

R10 states that the PC "consult" with its TOs and neighboring PCs to obtain input for the list of qualifying facilities operated below 200 kV. What does "consult" mean? It is a surrogate for "coordinate" which is being removed from standards because of compliance implications – an entity might be held in violation if another entity did not respond or act to "coordinate" the effort. Also, R11 uses the terms "reliability significance" and "unacceptable risk of instability" which are undefined and not measurable.

R11 is the lead requirement and could be moved to new R1 location. Better wording would be "Each PC must develop and document a methodology for determining a list of facilities in its area operated at less than 200 kV whose loss would cause instability, separation or cascading failures on the BES. "

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R10 follows directly and would become new R2. Better wording would be “Each PC shall prepare and review annually a list of facilities in its area operated at less than 200 kV which are subject to this standard. This list will be based on information obtained from its TOs. Results will be provided to its TOs and neighboring PCs.”

11. As stated in the background information above, in response to industry comments, the Requirement for the Planning Coordinator to document method for identification of applicable sub-200kV transmission lines (the new R11) is developed. Additionally the SDT assigned Time Horizons, Violation Risk Factors, and Violation Severity Levels. Do you agree? If not, please explain and propose an alternative.

- Agree
 Disagree

Comments:

See comments above in Question 10.

12. The SDT received suggestions from commenters to re-sequence the requirements contained in the standard to improve the logical flow of this document. The SDT submits for consideration a proposed alternative sequence. Do you agree with the proposed alternative sequencing? If not, please recommend a suggested sequence.

Proposed Alternative Sequence	Current Sequence	Description
R1	R11	PC to document method to determine sub 200kV lines
R2	R10	PC to prepare list of sub 200kV lines
R3	R1	Document TVMP
R4	R3	Conduct Vegetation Inspections
R5	R9	Implement Annual Work Plan
R6	R2	Implement Imminent Threat
R7	R4	Prevent Vegetation Encroachments
R8	R8	Prevent Fall-in Outages
R9	R7	Prevent Blow-in Outages
R10	R6	Prevent Grow-in Outages (non-IROL lines)
R11	R5	Prevent Grow-in Outages (IROL lines)

* If the standard is re-sequenced, it will be reflected in the next version.

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- Agree
 Disagree

Comments: N/A

13. The Implementation Plan proposes an effective date that gives entities at least a year to become fully compliant. Do you agree with this implementation plan? If not, please indicate what should be changed and indicate why.

- Agree
 Disagree

Comments:

MRO NSRS does not believe that current proposed implementation time in Facilities 4.2.2 is adequate. Given the time required to conduct a survey to determine if a company's lines are maintained sufficiently to meet the new requirements, in addition to the time and resources (both budgetary and labor) required to implement the results of the survey, we believe that between 24 and 36 months may be required to implement this version of the standard.

14. Do you have further questions about the standard that the Technical Reference document (White Paper) does not clear up? If so, please elaborate and propose additions.

Comments:

To avoid confusion, the diagrams of the ROWs in the White Paper should not have tree-like objects in the Active Transmission Right of Way. If any vegetation is to be shown in those areas, the vegetation should be shrubbery.

15. As stated in the background information above, in response to industry comments, the applicability section is revised to replace Reliability Coordinator with Planning Coordinator. Do you agree with these changes? If not, please explain and propose an alternative.

- Agree
 Disagree

Comments:

16. As stated in the background information above, in response to industry comments, changes were made to the definitions. Do you agree with these changes? If not, please explain and propose an alternative.

- Agree
 Disagree

Comments:

A. The definition of Active Transmission Line Right of Way is confusing. There may be other portions of the Right of Way that were not specifically acquired for other facilities (or being used for other facilities), but are not used and are not needed. It would be more accurate if the text "intended for other facilities" was deleted. Thus it would read: "A strip of land that is occupied by active transmission facilities. This corridor does not include the inactive or unused part of the right of way."

B. The definition of "Vegetation Inspection" should be rewritten to change the documentation requirement for any vegetation which "may pose a threat." As a practical matter, any vegetation "may" pose a threat. The definition would be better phrased to read: "The systematic examination of vegetation conditions on an Active Transmission Line Right of Way. This inspection may be combined with a general line inspection. The inspection includes the documentation of any vegetation that poses an unacceptable risk to reliability prior to the next planned inspection or maintenance work."

17. When compared to Version 1, does this proposed Version 2 of the standard either maintain or improve overall electric reliability? Please provide a technical basis for your response?

V2 Does maintain or improve overall reliability

V2 Does not maintain or improve overall reliability

Comments: Using the Gallet equation puts the tree trimmers closer to the lines than the OSHA standards will allow due to the fact that OSHA recognizes the standard IEEE 516-2003 clearance distances. We recommend revising Table 1 taking into account the IEEE standard.

18. Besides the comments you have already provided for the preceding questions, do you have further suggestions for improving this standard? If so, please elaborate.

Comments:

A. In FAC-003-1 a self reportable violation could occur at any time vegetation was within, had previously been, or had passed through (fall in) the Clearance 2 zone. In FAC-003-2, this is reportable only if observed in real time. Under FAC-003-1, a tree that was causing instantaneous operations of the line either through wind or loading would be a reportable violation of the Clearance 2 zone when found later during a patrol, even though the clearance now was well outside of the Clearance 2 zone. In FAC-003-2, a self reportable violation would be required only if the tree was observed, in real time, to be in the MVCD.

B. Perhaps there should be a statement in FAC-003-2 that is explicit that the TO will manage its ROW to its "full and legal rights".

C. The comments made above regarding the Requirement Sections of FAC-003-2 would need to be followed through in the Measure Sections of the standard.

D. Compliance Section 1.5 Category 1B("Grow-ins: Sustained Outages caused by vegetation growing into applicable lines but are not identified as an element of an IROL (or Major WECC Transfer Path) by vegetation inside and/or outside of the Active Transmission Line ROW"), the word "but" needs to be replaced with the word "which."

E. Attachment 1 needs to be renamed "Critical Clearance Distances" as discussed above in Question 4b.

F. General comment to entire standard: Remove the repeated use of the term "applicable lines" throughout the revised standard. It should be understood as those addressed in the "Applicability" section A4.2.

G. In version 1 of FAC-003, a sustained outage caused by vegetation within the ROW likely results in a single violation. However, the latest draft of version 2 is written such that the same sustained outage would result in the violation of at least 2, if not 3, requirements. This could quickly ratchet up the penalty amount by 3-4 times. We do not feel that this is reasonable, and recommend that modifications be made to remove double or triple jeopardy circumstances.