

## Industry Advisory On the Need for Rigorous Vegetation Management

Initial Distribution: September 15, 2010

**Reports of recent vegetation clearance encroachments prompt NERC to direct Transmission Owners to review their vegetation management activities under Reliability Standard FAC-003-1.**

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**Primary Interest Groups:** Executive Leadership, Lineworkers, and Utility Arborists

**Advisory:** With a recent increase in the number of reports of outages or vegetation encroachments of transmission lines, Transmission Owners (TOs) should review their transmission vegetation management practices they are required to implement under Reliability Standard FAC-003-1 in order to avoid further encroachment related incidents for the remainder of the growing season.

This review is warranted due to the fact that vegetation contacts have directly caused and/or contributed to several events on the bulk power system including the August 14, 2003 blackout affecting the Eastern interconnection.

**Background:** As reflected in the *Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations* (April 2004), outages related to tree contacts with high voltage transmission lines

represent a particular concern for bulk power system reliability. Reliability Standard FAC-003-1 was intended to prevent such contacts and associated outages by establishing requirements for TOs to have *and* implement transmission vegetation management plans (TVMPs) designed to maintain minimum clearances between transmission lines and vegetation.

Over the last three years, there has been a marked decrease in the number of reported tree contacts.<sup>1</sup> In the past year from Q3 2009 to Q2 2010, there were no Category 1 or Category 2 outages. The longer-term trend in the third quarters of each year (Q3) has been a steady decline from 11 Category 1 outages in Q3 2007, to 5 in Q3 2008, and to 0 in Q3 2009.

After a period of improved performance, however, there have been 3 instances of grow-ins in a short time span. The transmission lines involved in these grow-ins are higher voltage, potentially representing a higher risk to cascading issues. Specifically, in three separate regions, grow-ins have been identified on 230 kV, 345 kV, and 500 kV transmission lines. In two of the incidents Category 1 outages were reported and in one incident a flashover occurred indicating that Clearance 2 was not maintained adequately. In addition to these three incidents, there was a recent outage reported in which vegetation made contact with a 230 kV line while an entity was attempting to clear vegetation from an area adjacent to the right-of-way.

These incidents are of concern to NERC, and require renewed focus on the part of TOs, especially during the remainder of this year's growing season. Given that two of these grow-ins involved trees that were located directly under the transmission lines, it is apparent that TOs should undertake a thorough review of the implementation of their TVMPs to ensure that they have properly and completely followed the requirements.

TOs have an obligation under FAC-003-1 to design and implement TVMPs that ensure adequate vegetation clearances are maintained and to prevent vegetation related outages. In so doing, TOs should review their vegetation management activities recognizing that: (1) visual observation (especially during aerial inspections) may not necessarily provide an accurate assessment of vegetation encroachments; (2) TVMPs should build in quality checks to ensure accurate assessments of possible clearance issues are made as well as assuring the quality of vegetation management work that is performed to restore necessary clearances; and (3) special consideration may be needed to adjust the TVMP for areas that are experiencing, or recently have experienced, unusual weather conditions that might affect vegetation growth, such as an unusual amount of precipitation.

In addition, when a TO experiences or suspects an outage is potentially attributable to a Category 1 or 2 vegetation encroachment, the TO should report it to their Regional Entity within 48 hours pursuant to NERC Public Notice #2008-001 entitled "Vegetation-related Transmission Outage

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<sup>1</sup> Tree contacts under FAC-003-1 are categorized as follows: Category 1 — Grow-ins: Outages caused by vegetation growing into lines from vegetation inside and/or outside of the ROW; Category 2 — Fall-ins: Outages caused by vegetation falling into lines from inside the ROW; Category 3 — Fall-ins: Outages caused by vegetation falling into lines from outside the ROW.

Reporting” ([http://www.nerc.com/files/2008-Public\\_Noteice\\_001\\_v1.pdf](http://www.nerc.com/files/2008-Public_Noteice_001_v1.pdf)). Also, recognizing that a single vegetation contact may involve a much larger encroachment issue, TOs are expected to take appropriate and timely action to avoid additional contacts.

Great strides have been made in vegetation management in recent years, but continued focus on design and implementation of TVMPs is required to ensure continued success.

Please note that all inquiries regarding this advisory can be addressed to the following NERC Staff.

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To report any incidents related to this alert, contact:  
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