

## Vegetation-Related Transmission Outage Report Second Quarter 2010

The NERC Board of Trustees Compliance Committee has reviewed and accepted this Vegetation-Related Transmission Outage Second Quarter 2010 Report.

Vegetation-related transmission outages that occurred in the second quarter of 2010 are being reported in accordance with standard FAC-003-1.

The standard requires each outage to be categorized as one of the following:

- 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.

All Category 1 and 2 outages are considered to be violations of NERC standard FAC-003-1, with corresponding levels of noncompliance defined in the standard. The reporting of these violations is handled separately as part of the NERC performance reporting process. Category 3 outages are not considered to be violations of NERC standard FAC-003-1. Table 1 is a summary of the vegetation outages that occurred in the second quarter by voltage class and category.

**Table 1: Second Quarter 2010 Summary of Vegetation-Related Outages  
by Voltage Class and Outage Category**

Category	RE Designated Critical Lines <200 kV	230 kV	345 kV	500 kV	765 kV	Total
Category 1 — Grow-ins						0
Category 2 — Fall-ins						0
Category 3 — Fall-ins		5		1		6
<b>Total</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>6</b>

In comparison, during the second quarter of 2009, the following 8 vegetation-related transmission outages were reported:

- Five Category 3 outages:  
5 – 230 kV
- Three Category 1 outages:  
2 – 345kV  
1 –765 kV

## Category 1 — Grow-ins

No outages caused by vegetation growing into lines from vegetation inside and/or outside of the ROW were reported during the second quarter 2010.

## Category 2 — Fall-ins

No outages caused by vegetation falling into lines from inside the ROW were reported during the second quarter 2010.

## Category 3 — Fall-ins

Six outages caused by vegetation falling into lines from outside the right-of-way were reported during the second quarter 2010:

### **SERC Reliability Corporation**

Reported three 230 kV vegetation-related transmission outages from outside the right-of-way:

1. The transmission owner reported one 230 kV vegetation-related transmission outage from outside the right-of-way on April 9, 2010 with a duration of one hour and 55 minutes. A 130 feet tall live double-leader Red Oak tree growing on a rocky outcrop located 69 feet from the edge of the ROW, broke at ground level and fell into the line. The remaining leader from the Red Oak tree was removed along with two leaning pine trees in the same area.
2. The transmission owner reported one 230 kV vegetation-related transmission outage from outside the right-of-way on May 15, 2010 with a duration of 7 hours and 38 minutes. A tree, decaying from the inside and located 14 feet off from the right-of-way, fell due to localized severe weather. The tree was removed and an aerial inspection was performed on all 200 kV lines and above in June, July and August of 2010.
3. The transmission owner reported one 230 kV vegetation-related transmission outage from outside the right-of-way on June 15, 2010 with a duration of 10 hours and 50 minutes. An 84 feet tall live Loblolly Pine tree located 5 feet from the edge of the ROW, broke off 24 feet above ground level during a microburst storm. Two adjacent live pine trees also fell, one breaking off 25 feet above ground level and the other uprooting.

### **Western Electricity Coordinating Council, Inc.**

Reported one 500 kV and two 230 kV vegetation-related transmission outages from outside the right-of-way:

1. The transmission owner reported one 500 kV vegetation-related transmission outage from outside the right-of-way on May 03, 2010 with a duration of 4 hours and 39 minutes. A 30" diameter Hemlock fell from 110 feet off the centerline, hitting a Douglas-fir 78 feet from the centerline, causing the latter to fall into the outside conductor. Winds on that day were reported at approximately 50 mph. WECC confirmed the outage was the result of windy weather and will monitor the entity for future vegetation-caused outages.
2. The transmission owner reported one 230 kV vegetation-related transmission outage from outside the right-of-way on April 4, 2010 with a duration of 5 hours and 48 minutes. After two days of heavy rain and wind gusts to 47 mph, a clump Maple tree located 53 feet from the tower centerline uprooted due to root rot and fell into a transmission line. The tree was cleared and the vicinity was inspected to verify that no vegetation hazards were present.
3. The transmission owner reported one 230 kV vegetation-related transmission outage from outside the right-of-way on April 30, 2010 with a duration of 11 minutes. A tree approximately 100 feet outside the ROW fell into a transmission line. WECC confirmed the outage was the result of bad weather and will monitor the entity for future vegetation-caused outages.

Table 2 summarizes the number of transmission outages by voltage level, region, and category.

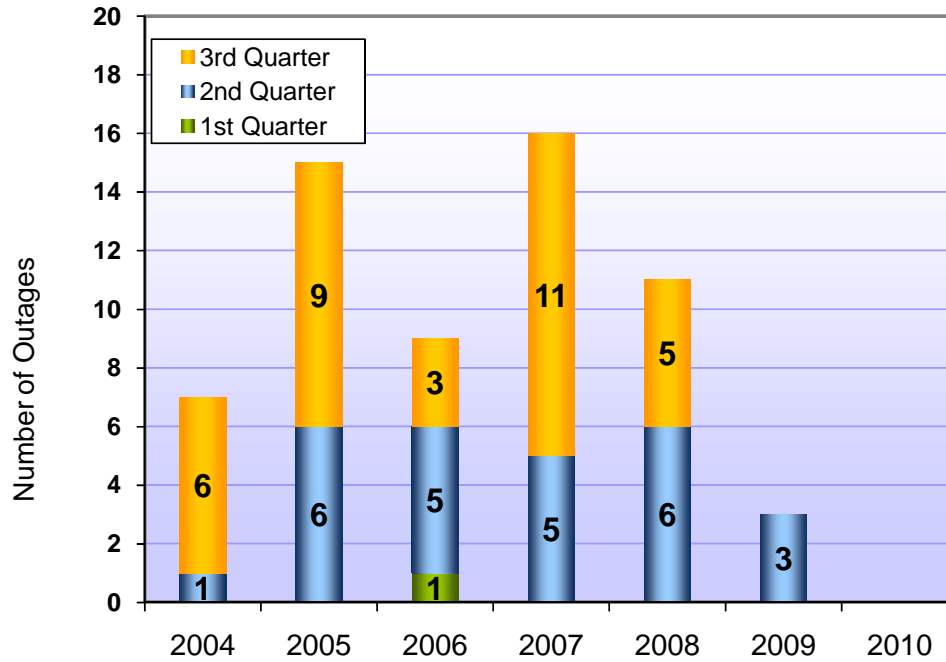
Figure 1 illustrates the number of outages caused by vegetation growing into transmission lines from within the right-of-way that have been reported since 2004. Figure 2 provides this information by voltage class for each year.

**Table 2: Summary of Vegetation-Related Transmission Outages\* by Region and by Outage Category for Each Quarter in 2010**

Region	First Quarter			Second Quarter			Third Quarter			Fourth Quarter			TOTAL		
	Category 1	Category 2	Category 3	Category 1	Category 2	Category 3	Category 1	Category 2	Category 3	Category 1	Category 2	Category 3	Category 1	Category 2	Category 3
	GROW-INS (inside/outside ROW)	FALL-INS (inside ROW)	FALL-INS (outside ROW)	GROW-INS (inside/outside ROW)	FALL-INS (inside ROW)	FALL-INS (outside ROW)	GROW-INS (inside/outside ROW)	FALL-INS (inside ROW)	FALL-INS (outside ROW)	GROW-INS (inside/outside ROW)	FALL-INS (inside ROW)	FALL-INS (outside ROW)	GROW-INS (inside/outside ROW)	FALL-INS (inside ROW)	FALL-INS (outside ROW)
FRCC			1-230 kV												1-230 kV
MRO															
NPCC															
RFC															
SERC			1-230 kV			3-230 kV									4-230 kV
SPP															
TRE															
WECC			2-230 kV 1-500 kV			2-230 kV 1-500 kV									4-230 kV 2-500 kV
TOTAL			4-230 kV 1-500 kV			5-230 kV 1-500 kV									9-230 kV 2-500 kV

\* Contains only sustained outages of transmission lines and does not include violations resulting from momentary outages or encroachments into the clearance zone as described in standard FAC-003.

**Figure 1: Category 1 — Grow-in Outages Caused by Vegetation Growing into Lines from Inside and/or Outside the ROW.<sup>‡</sup>**



<sup>‡</sup> Includes one 2007 Category 1 outage caused by vegetation growing into a RRO-designated critical line <200 kV.  
 Second Quarter 2010 Vegetation-Related Transmission Outages  
 September 10, 2010

**Figure 2: Category 1 —Grow-In Vegetation Related Outages of 230 kV and Higher Transmission by Voltage Class**

