

Vegetation-Related Transmission Outage Report Third Quarter 2010

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

Vegetation-related transmission outages that occurred in the third 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 third quarter by voltage class and category.

**Table 1: Third 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			1	1		2
Category 2 — Fall-ins						0
Category 3 — Fall-ins		3				3
Total	0	3	1	1	0	5

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

- Three Category 3 outages:
3 – 230 kV

Category 1 — Grow-ins

Two outages caused by vegetation growing into lines from vegetation inside and/or outside of the ROW were reported during the third quarter 2010.

SERC Reliability Corporation

Reported one 500 kV vegetation-related transmission outage from inside the right-of-way:

The transmission owner reported one 500 kV vegetation-related transmission outage from inside the right-of-way on August 9, 2010 with a duration of 26 hours and 56 minutes. The line loading percentage at the time of the outage was approximately 5 percent of the normal rating. A 37' 4" tall Black Willow tree grew underneath the transmission line resulting in a fault. Immediate air searches did not locate the fault. Ground crews were dispatched to locate and remove the tree, and place the line back in service. A complete aerial re-inspection of all 500kV lines and a ground inspection of lines with similar vegetation growth potential was conducted to ensure no similar conditions exist that would adversely impact the reliability of the BES.

Southwest Power Pool

Reported one 345 kV vegetation-related transmission outage from inside the right-of-way:

The transmission owner reported one 345 kV vegetation-related transmission outage from inside the right-of-way on August 2, 2010 with a duration of 4 hours and 7 minutes. The line loading percentage at the time of the outage was approximately 25 percent of the normal rating. The outage was caused by an American Elm tree growing into the line from inside the ROW. A ground patrol of the line was conducted and additional vegetation was removed. This was completed on August 18, 2010.

Category 2 — Fall-ins

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

Category 3 — Fall-ins

Three outages caused by vegetation falling into lines from outside the right-of-way were reported during the third 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 July 4, 2010 with a duration of 18 hours and 13 minutes. A

70' tall, 26" diameter Sweet Gum tree, with decay in the trunk, broke off at approximately 8 feet. Field evaluation determined that the flash which occurred also locked out another 230kV circuit which runs on the same structures (double-circuit monopole). The tree had to be cut from the line. The corridor was inspected and four additional trees were removed in the next month.

2. The transmission owner reported one 230 kV vegetation-related transmission outage from outside the right-of-way on July 4, 2010 with a duration of 64 minutes. A 70' tall, 26" diameter Sweet Gum tree, with decay in the trunk, broke off at approximately 8 feet. Field evaluation determined that the flash which occurred also locked out another 230kV circuit which runs on the same structures (double-circuit monopole). Field evaluation also concluded that this line could safely be reenergized while the tree was removed from the other 230kV line. The corridor was inspected and four additional trees were removed in the next month.
3. The transmission owner reported one 230 kV vegetation-related transmission outage from outside the right-of-way on September 30, 2010 with a duration of 3 hours and 45 minutes. A southern yellow pine tree broke off 24" from the ground and fell onto the line pinning one phase to the ground. The tree measured 80' with the base of the tree located 3.5' outside the ROW boundary (ROW width is 100'). Beetle infestation caused approximately 60 percent of dead tree on the inside at the break point; wind gusts during the day may have also contributed to the fall. Nine additional damaged, diseased, or defective trees were removed within five days of the outage.

Second Quarter 2010 Supplementary Information

Category 3 — Additional Fall-ins during the second quarter 2010

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

Northeast Power Coordinating Council

Reported two 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 29, 2010 with a duration of 9 hours and 48 minutes.
2. The same transmission owner also reported one 230 kV vegetation-related transmission outage from outside the right-of-way on the same transmission line as above on May 26, 2010 with a duration of 17 hours and 36 minutes.

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

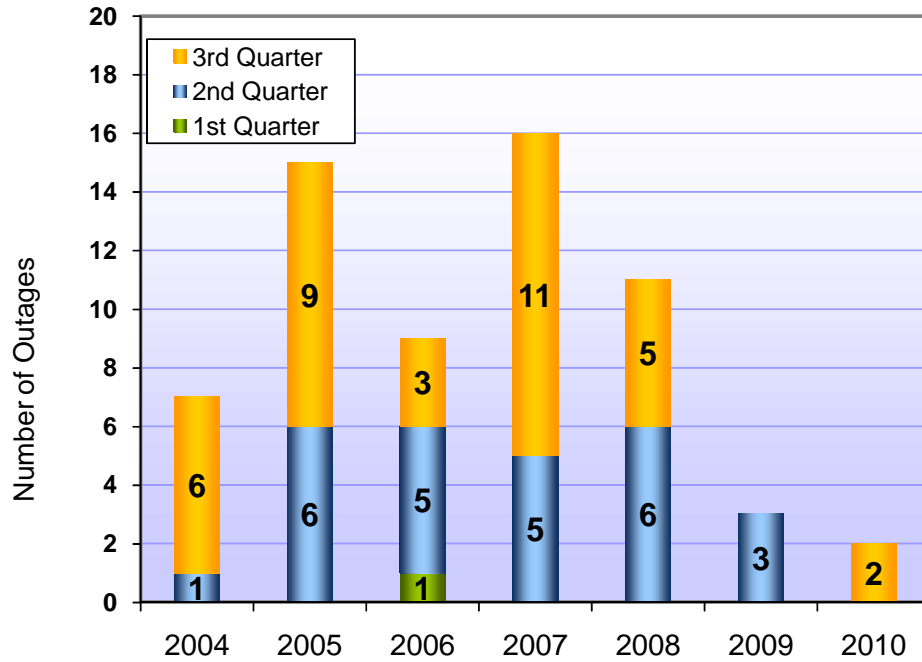
Figure 1 illustrates the number of outages caused by vegetation growing into transmission lines from within the right-of-way that have been reported since 2004. Figure 2 provides this information by voltage class for each year.

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						2-230 kV									2-230 kV
RFC															
SERC			1-230 kV			3-230 kV	1-500 kV		3-230 kV				1-500 kV		7-230 kV
SPP							1-345kV						1-345kV		
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			7-230 kV 1-500 kV	1-500 kV 1-345kV		3-230 kV				1-500 kV 1-345kV		14-230 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.
Third Quarter 2010 Vegetation-Related Transmission Outages

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



[‡] Includes one 2007 Category 1 outage caused by vegetation growing into a RRO-designated critical line <200 kV.
 Third Quarter 2010 Vegetation-Related Transmission Outages

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

