NERC

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Vegetation-Related Transmission Outage Report
Second Quarter 2011

The NERC Board of Trustees Compliance Committee has reviewed and accepted this Vegetation-Related Transmission Outage Second Quarter 2011 Report.

Vegetation-related transmission outages that occurred in the second quarter of 2011 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.

Table 1 is a summary of the vegetation outages that occurred in the second quarter by voltage class and category.

Table 1: Second Quarter 2011 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	0	0	0	0	**0**
Category 2 — Fall-ins	0	0	0	0	0	**0**
Category 3 — Fall-ins	0	5	0	0	0	**5**
Total	**0**	**5**	**0**	**0**	**0**	**5**

116-390 Village Blvd.
Princeton, NJ 08540
609.452.8060 | www.nerc.com

In comparison, during the second quarter of 2010, the following six vegetation-related transmission outages were reported:

- Six Category 3 outages:

  1 – 500 kV

  5 – 230 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 2011.

Category 2 — Fall-ins

No outages caused by vegetation falling into lines from inside the ROW were reported during the second quarter 2011.

Category 3 — Fall-ins

Five outages caused by vegetation falling into lines from outside the right-of-way were reported during the second quarter 2011.

Midwest Reliability Organization

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 30, 2011 with a duration of 53 hours and 49 minutes. During a major blizzard, conditions with high winds gusting to 66km/hr caused a tree, located 20 feet from the edge of the right-of-way and 60 feet from the center of the transmission line, to fall onto the line.
2. The transmission owner reported one 230 kV vegetation-related transmission outage from outside the right-of-way on June 3, 2011 with a duration of 10 hours and 9 minutes. A tree from outside the right of way fell onto the conductors causing the outage. Reclose attempts failed and an aerial inspection found that the tree had subsequently burned off.

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 June 18, 2011 with a duration of 4 hours and 8 minutes. A live, healthy, hickory tree approximately 80 feet tall located 20 feet from the edge of the right-of-way fell into the line as thunderstorms past through the area. The tree was removed; no other trees along the right-of-way edge were impacted.
2. The transmission owner reported one 230 kV vegetation-related transmission outage from outside the right-of-way on June 21, 2011 with a duration of 19 hours and 54 minutes. A live pine tree, 90 feet tall fell from 6 feet off the right-of-way during heavy winds. The

tree made contact with two lines in the area, one 115kV and one 230kV line which share the same structures at that location. The tree showed signs of root decay at the base of the tree. The tree was removed and the field inspection showed no other problems.

3. The transmission owner reported one 230 kV vegetation-related transmission outage from outside the right-of-way on June 29, 2011 with a duration of 2 hours and 51 minutes. The outage was caused by a Yellow Poplar tree that was 20 inches in diameter, approximately 90 feet tall, and 20 feet off the right-of-way. The tree shares a common stump with two other 90 feet tall stems that were rotten at the base. These stems were removed and no other issues were found.

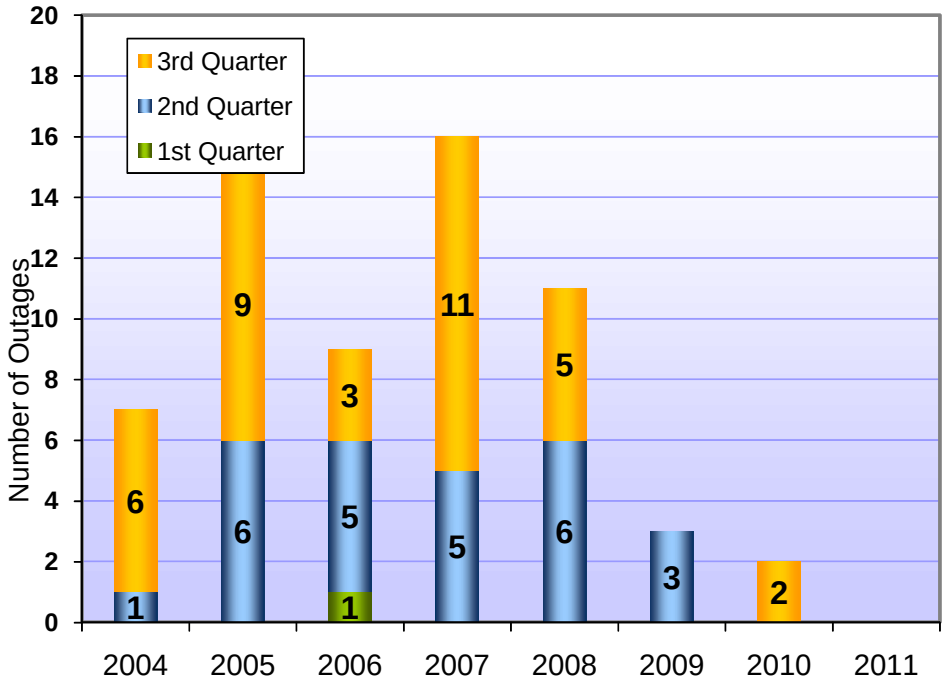
Table 2 summarizes the number of transmission outages by voltage level, region, and category. Figure 1 illustrates the number of outages caused by vegetation growing into transmission lines from within the right-of-way that have been reported since 2004. Figure 2 provides this information by voltage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

Table 2: Summary of Vegetation-Related Transmission Outages* by Region and by Outage Category for Each Quarter in 2011

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															
MRO						2-230 kV									2-230 kV
NPCC															
RFC															
SERC						3-230 kV									3-230 kV
SPP															
TRE															
WECC			3-230 kV												3-230 kV
TOTAL			3-230 kV			5-230 kV									8-230 kV

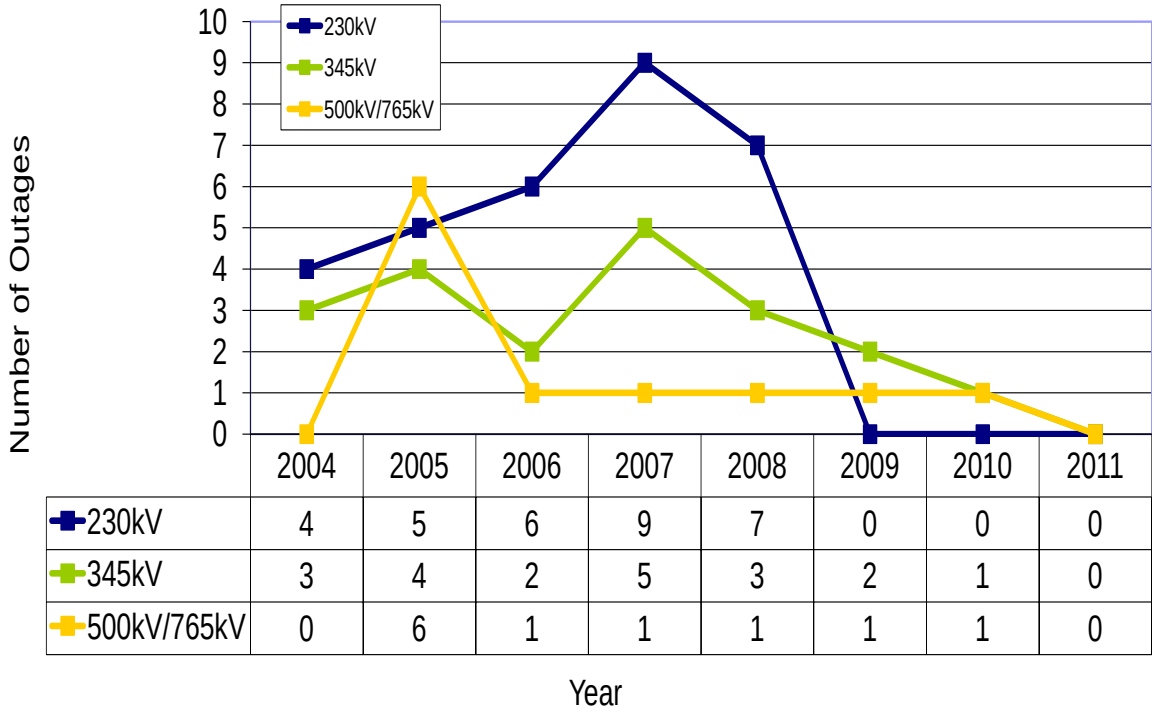
* Contains only sustained outages of transmission lines and does not include violations resulting from momentary outages or encroachments into the clearance zone as described in standard FAC-003.

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



[‡] Includes one 2007 Category 1 outage caused by vegetation growing into a RRO-designated critical line <200 kV.

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



	2004	2005	2006	2007	2008	2009	2010	2011
230kV	4	5	6	9	7	0	0	0
345kV	3	4	2	5	3	2	1	0
500kV/765kV	0	6	1	1	1	1	1	0