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# Electric Distribution Utility Annual Reliability Report

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## SECTION 1: CONTACT INFORMATION

UTILITY NAME	1.1	Clark Energy
REPORT PREPARED BY	1.2	Scott Sidwell
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## SECTION 2: REPORT YEAR

CALENDAR YEAR OF REPORT	2.1	2008
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## SECTION 3: MAJOR EVENT DAYS

TMED	3.1	8.25
FIRST DATE USED TO DETERMINE TMED	3.2	1/1/2003
LAST DATE USED TO DETERMINE TMED	3.3	12/31/2007
NUMBER OF MED IN REPORT YEAR	3.4	5

NOTE: Per IEEE 1366 TMED should be calculated using the daily SAIDI values for the five prior years. If five years of data are not available, then utilities should use what is available until five years are accumulated.

## SECTION 4: SYSTEM RELIABILITY RESULTS

Excluding MED

SAIDI	4.1	101
SAIFI	4.2	0.957
CAIDI	4.3	106

Including MED (Optional)

SAIDI	4.4	_____
SAIFI	4.5	_____
CAIDI	4.6	_____

### Notes:

- 1) All duration indices (SAIDI, CAIDI) are to be reported in units of minutes.
- 2) Reports are due on the first business day of April of each year
- 3) Reports cover the calendar year ending in the December before the reports are due.
- 4) IEEE 1366 (latest version) is used to define SAIDI, SAIFI, CAIDI, and TMED

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## SECTION 5: OUTAGE CAUSE CATEGORIES

Excluding MED

CAUSE CODE DESCRIPTION	SAIDI VALUE	CAUSE CODE DESCRIPTION	SAIFI VALUE
Lightning	5.1.1 37.8	Power Supplier	5.2.1 0.203
Major Storm	5.1.2 37.4	Trees	5.2.2 0.152
Trees	5.1.3 18.9	Lightning	5.2.3 0.140
Power Supplier	5.1.4 14.3	Equipment Fault	5.2.4 0.135
Equipment Fault	5.1.5 14.0	Major Storm	5.2.5 0.121
Ice/Snow-not trees	5.1.6 10.5	Unknown	5.2.6 0.087
Wind-not trees	5.1.7 9.7	Small Animal S.C.	5.2.7 0.086
Unknown	5.1.8 6.4	Wind-not trees	5.2.8 0.067
Small Animal S.C.	5.1.9 5.7	Public Accident	5.2.9 0.045
Deterioration	5.1.10 5.2	Ice/Snow-not trees	5.2.10 0.035

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## SECTION 6: WORST PERFORMING CIRCUITS

CIRCUIT IDENTIFIER	SAIDI VALUE	MAJOR OUTAGE CATEGORY
HIGHROCK1	6.1.1 514	Tree/Limb Out R/W
UNIONCITY2	6.1.2 414	Unknown Cause
CAVERUN1	6.1.3 321	Tree/Limb Out R/W
BLEVAL2	6.1.4 319	Tree/Limb Out R/W
MARIBA4	6.1.5 305	Tree/Limb Out R/W
SIDEVIEW1	6.1.6 299	Tree/Limb Out R/W
BLEVAL3	6.1.7 267	Tree/Limb Out R/W
HUNT4	6.1.8 254	Lightning
MARIBA1	6.1.9 226	Lightning
BOWEN2	6.1.10 200	Tree/Limb Out R/W

CIRCUIT IDENTIFIER	SAIFI VALUE	MAJOR OUTAGE CATEGORY
MARIBA2	6.2.1 0.056	Tree/Limb Out R/W
FRNBURG4	6.2.2 0.041	Tree/Limb Out R/W
UNIONCITY2	6.2.3 0.038	Other
HUNT4	6.2.4 0.033	Lightning
STANTON2	6.2.5 0.031	Lightning
JVILLE2	6.2.6 0.027	Tree/Limb Out R/W
MTSTRLG2	6.2.7 0.026	Tree/Limb Out R/W
THRFRKS2	6.2.8 0.025	Tree/Limb Out R/W
BLEVAL2	6.2.9 0.023	Tree/Limb Out R/W
HOPE3	6.2.10 0.019	Lightning

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Additional pages may be attached as necessary  
SECTION 7: VEGETATION MANAGEMENT PLAN REVIEW

Changes and improvements made to Clark Energy Cooperative ROW program for the calendar year 2008 included going from low volume herbicide spraying to high volume spraying in order to increase productivity and cover more area. Clark Energy also added another herbicide spray crew for the foliar spray season and additional manpower for the fourth quarter of the year.

The ROW clearing cycle remains the same with the exception of the herbicide rotation which should decrease with the extra crew.

We use outage records to evaluate the effectiveness of our program and these records are closely monitored to see if outages numbers change either up or down. The numbers of outages from "trees within the ROW" were relatively unchanged in 2008 but numbers of "outages outside the ROW" were influenced but bad weather in January and February 2008.

## SECTION 8: UTILITY COMMENTS

Clark Energy's SAIDI (duration of outages) figures for 2008 were above the five year average but not above the highest year during the last five year period. SAIFI (frequency of outages) for 2008 was well below the five year average for outages and CAIDI (restoration time) was slightly above the five year average but not significantly.

The ten worst performing circuits for SAIDI & SAIFI were different from last year worse performing circuits with the exception of Hunt4 which is the longest circuit on the system by far and thus has much more exposure to outages.

The top four causes of outages are as follows for SAIDI & SAIFI.

1. Power Supplier
2. Major Storm
3. Lightning
4. Trees out of ROW

Two of the top four causes are influenced by heavy weather in the early part of 2008.

Transmission outages during the storms kept service off for an extended period of time and the major storm category is self explanatory.

Lightning and trees out of the ROW continue to be a top outage problem. Clark Energy's approach to reducing outages in these areas are an aggressive ROW program with special notice given to the removal of danger trees in the corridor of the power lines and continuing to add lightning arrestors and additional grounding to the system after testing the grounds during our pole inspection process.

Clark Energy Cooperative engineers are currently trying to justify an additional substation for the Hunt4 circuit which is the longest feeder on our system.