1. **Did ComEd design, construct and maintain its electricity delivery system to appropriate standards? If yes, how did ComEd reach that conclusion?**

   Response: Yes. ComEd designed, constructed, and maintained its delivery system to appropriate standards.

   ComEd distribution delivery system is designed and constructed to conform to a detailed set of written Construction Standards developed by ComEd. These Construction Standards are, in turn, based not only on good utility practice generally accepted by qualified professional engineers, but also on other standards, practices, and rules applicable to the industry and/or contained in applicable codes and regulations. These standards, practices, and rules include the National Electric Safety Code ("NESC"), other applicable American National Standards Institute ("ANSI") standards, IEEE standards, and Illinois Commerce Commission rules, including those parts of Title 83 of Illinois Administrative Code, Part 305 that adopt portions of the NESC as a Commission regulation, as well as other nationally recognized standards. Such standards, practices, and rules are appropriately used for developing construction standards, and are accepted by utilities and regulators across the United States

   ComEd's Construction Standards also reflect the contributed knowledge and experience of a broad range of industry participants and other experts. For example, the NESC (listed more formally as ANSI C2) is developed from a consensus process that includes representation from 25 different groups, including the National Association of Regulatory Utility Commissioners, the National Society of Professional Engineers, the National Safety Council, and the American Insurance Services Group, Inc.

   In addition, ComEd ensures that special design and construction requirements, such as those of the Illinois Department of Transportation, are reflected. Where regional or national Construction standards allow for regional differences (for example with respect to ice loading and wind speed), ComEd's standards incorporate the appropriate parameters for its northern Illinois service territory. ComEd's Construction Standards are continuously reviewed to insure that they meet these standards and requirements.

   ComEd's Construction Standards have a broad scope, including all of the following subjects that may have interest to the Commission in this proceeding:

   1. Pole Loading
   2. Wire Tension
   3. Span Length
   4. Wind Speed and Other Weather Conditions
   5. Conductor Ampacities
   6. Hardware Strength and Application
   7. Insulation Requirements
   8. System Basic Impulse Insulation Level (BIL)
   9. Clearance Requirements
   10. Grounding Requirements

1. **Did ComEd design, construct and maintain its electricity delivery system to appropriate standards? If yes, how did ComEd reach that conclusion?**

Response (continued):

Many important elements of these particular standards either directly or indirectly tie back to the NESC. For example, NESC Sections 24, 25, and 26 detail the strength requirements (Items 1, 2, and 6 above) for poles, hardware, and conductors. These Sections also detail the wind speed and weather conditions (Item 4 above) that are to be considered as part of those requirements. The calculations ComEd uses for the determination of the required pole class are based on these requirements. The pole class and other wood material requirements are further determined by the ANSI O5 standard. This standard uses information and data from the American Wood Preservers Association (AWPA) in that determination. (See the answer for Q8 for additional information on strength requirements.)

ComEd Standards C7022 "Wood Pole Information" and C7023 "Vertical Pole Loading" were specifically designed to meet and exceed the requirements of the NESC. C7022 lists ANSI O5 data for different wood species used for poles as well as typical weights for poles so that more accurate estimates may be made regarding the equipment needed to install these poles. C7023 includes information about the weight of the equipment that can be installed on the poles and indicate the maximum weight that can be installed at specific locations on the pole. It further indicates these limits for both cross- and alley arm construction. It also states the assumptions that were used in developing these limits.

NESC Section 23 details the clearance requirements. (Item 9 above) These include the clearances required above roads or driveways and also information needed to determine such items as the proper placement of attachment points for conductors on the poles and crossarms. For example, ComEd Construction Standard C7436 "Crossarms" indicates spacing of 24.5 inches between the two closest phases on a crossarm and a maximum span length (Item 3 above) of 200 feet. This is based on the horizontal clearance requirements of NESC Table 235-1 and calculations of ellipses formed by the movement of the conductors during wind and ice conditions. These calculations are dependant on the span length and the wire tension, which, in turn, is dependant on the rated tensile strength of the wire. This also involves the conductor ampacities (Item 5 above) because that affects the wire temperature. The wire temperature is used to determine a component of the wire tension and sag.

Each of the ComEd Construction Standards has been reviewed to ensure that these clearance and attachment requirements are met.

Section 27 details the requirements for insulation and BIL. (Items 7 and 8 above) This Section lists requirements for materials and marking of insulators, the ratio of voltage to puncture voltage, the insulation level, and the factory testing requirements. This includes when and where insulators are to be used in guying. (Many of the guying insulator requirements have been moved to Rule 215 in Section 21 of the 2007 NESC. The Illinois

1. **Did ComEd design, construct and maintain its electricity delivery system to appropriate standards? If yes, how did ComEd reach that conclusion?**

Response (continued::

Commerce Commission has not yet adopted that version.) ComEd Construction Standard C7130 "Anchor Guys 34.5kV and Below" indicates those requirements and illustrates them in examples. The NESC reference is indicated on each drawing in the Standard.

Insulators used for conductor support are matched to the NESC electrical and mechanical requirements and to ANSI C29. (ANSI C29 is the national standard for insulator ratings and listed as part of the requirements in Section 27, specifically Rule 272. This includes ratings for wet and dry voltage flashover, cantilever strength as well as dimensions of the insulator.) Each insulator and every material component is part of the overall system BIL rating. ComEd Material Specification EM 23300 " Suspension and Pin Type Insulator" directly requires ANSI C29 for the insulators purchased.

Section 9 of the NESC is titled "Grounding" (Item 10 above) and ComEd grounding standards meet or exceed the requirements listed in that Section. The required size of the ground rod, the required length of the ground rod, and the material of the ground rod are listed in this Section. The ground connection requirements and any bonding requirements between other ComEd facilities or to other non-ComEd facilities on the pole, such as telecommunication or cable television company equipment and conductors are also listed in this Section.

In addition, although not directly required by the NESC, ComEd Construction Standards and Engineering Practice EP 7006-E specify the installation of arresters on the distribution lines. These arresters add to the reliability of the lines by draining off charge that results from lightning surges or surges from switching. Using software that is based on an EPRI project, it can be demonstrated that ComEd arrester installation practices are effective for the local conditions. The number of ComEd required arrester installations is effectively double the number of grounds required by the NESC. It is also the most cost-effective number since more arresters do not raise the reliability and fewer will definitely lower the reliability

Finally, in addition to having confidence in the appropriateness of its construction standards, in general, ComEd has also considered the outages caused by the "August Blast" weather system. After looking at the particular types of outages and equipment damage experienced during and immediately after the Blast, it was clear that the material condition of the ComEd distribution delivery system was neither a primary or contributing cause to the extent or duration of the outages. There simply was no system deficiency that the Blast exploited. Rather, the damage was caused by extreme severity and wide scope of the storm system.

ComEd's overhead inspection maintenance program is discussed in response to Q4 below.

2. **What were the specific weather events or conditions in each area of ComEd's service territory where the electric service interruptions occurred**? ***This item could pertain to broader geographic areas like counties of smaller areas like villages or precincts. ComEd should use the smallest reasonable geographic area.***

Response:

Extreme summer storm conditions prevailed throughout much of the northern portion of ComEd's service territory. There were numerous reports of high winds. More than 80,000 area lightning strokes were reported, and some areas received up to three inches of rain per hour. In contrast, the average number of lightning strokes reported for typical storms in ComEd's service territory is approximately 12,000. Eight counties in ComEd's service territory were declared State Disaster areas: Cook, DeKalb, Grundy, Lake, LaSalle, Kane, Will and McHenry. Illustrative data is provided below; ComEd does not generally have access to specific weather data by village or precinct, other than at those reporting stations discussed below.

Number of lightning strokes by office

See Q2 attachment ICC Aug23And24LightningStrokeAnalysisData.pdf

NOAA's National Weather Service Weather Forecast Office

See Q2 attachment NOAH.pdf

Murray & Trettle information

Murray & Trettel ("M&T") are consulting meteorologists used by ComEd to support Emergency Preparedness in planning for weather conditions. M&T utilizes the following forecast tools:

Longer Term

- Upper Air Analysis
- Experience
- Model Interpretation
- Feedback/Verification

Shorter Term

- Surface Analysis and Trends
- Radar Trends
- Lightning Trends
- Satellite Interpretation

2. **What were the specific weather events or conditions in each area of ComEd's service territory where the electric service interruptions occurred**? ***This item could pertain to broader geographic areas like counties of smaller areas like villages or precincts. ComEd should use the smallest reasonable geographic area.***

Response (continued):

The storm warning color codes are:

GREEN	No Operational Trouble
YELLOW	Minor Operational Trouble
RED	Significant Operational Trouble
BLACK	Major Operational Trouble

Typical Notification Process:

Alert	4 to 8 hours lead time prior to expected trouble
Warning	1-2 hours lead time prior to expected trouble
All Clear	Alert or Warning.

Reporting stations in ComEd territory include:

KORD	O'Hare International Airport
KMDW	Midway airport
KUGN	Waukegan Regional Airport
KPWK	Chicago Executive Airport, Wheeling, IL
KDPA	Dupage County Airport, West Chicago
KARR	Aurora Municipal Airport
KLOT	Lewis University Airport, Romeoville, IL
KJOT	Joliet Regional Airport
KIGQ	Lansing Airport
KIKK	Greater Kankakee Airport
KC09	Morris Airport
KPNT	Pontiac Municipal Airport
KVYS	Illinois Valley Regional Airport, Peru IL
KC75	Marshall County Airport, Lacon, IL
KSQI	Whiteside County Airport, Sterling, IL
KRRJ	Rochelle Municipal Airport
KDKB	Dekalb Taylor Municipal Airport
KKFEP	Albertus Airport, Freeport, IL
KMLI	Quad City International Airport
KCWI	Clinton Municipal Airport
KRFD	Greater Rockford Airport

2. **What were the specific weather events or conditions in each area of ComEd's service territory where the electric service interruptions occurred**? ***This item could pertain to broader geographic areas like counties of smaller areas like villages or precincts. ComEd should use the smallest reasonable geographic area.***

   Response (continued):

   Weather reporting stations at each of Exelon Nuclear Power Plants

Dresden
Zion
Lasalle
Braidwood
Byron
Quad Cities

Per Murray & Trettel:

"On the afternoon of Thursday, August 23, 2007 a cluster of severe thunderstorms moved across the Chicago area knocking out power to ~700,000 ComEd customers. Winds were estimated to be 80-100 mph in some places and a confirmed EF-1 tornado occurred in Dupage County. This situation could almost be classified as a worst case scenario for an electric utility, major ice storm being the absolute worst case."

"Even though we correctly alerted our clients for the potential of severe weather (50-60 mph for ComEd and subsequently the same on the initial warnings) there were signs of a higher wind potential."

Radar at 1300 showed much of NE IL in abundant sunshine, which was the case all morning. This allowed the Atmosphere to become quite unstable by early afternoon.
"To summarize the synoptic conditions…
1)An increasingly unstable airmass
2)SBCAPE 2000-3000 J/kg with surface dewpoint in the 70s.
3)Shortwave trough in Iowa at 18Z
4)Steep lapse rates
5)Dry mid-level air
6)Unidirectional flow with mid-level winds up to 55 knots."

Attached are three copies of Alerts and Warnings faxed to ComEd's Operations Center from M&T regarding the weather forecast for August 23. The 1255 storm warning was for all ComEd regions and the 1505 report was an update for a specific region with the 1255 forecast in place for the balance of the regions. The 229 report is a tornado warning.

See Q2 attachment 8-23 1505.pdf; Q2 attachment 8-23 1255.pdf; Q2 attachment NWS doc.pdf

Why should the commission find that these weather conditions or events were the cause of the interruptions?

Response: These extreme weather events described above were the physical and immediate cause of the interruptions.

3. **How many interruptions does ComEd claim were caused by weather and how did ComEd make that determination? How many customers were affected by the interruptions caused by weather? Which interruptions were not caused by weather?**

Response:

ComEd claims there were approximately 4,290 sustained interruptions which affected approximately 650,000 customers within the storm time range established. The ICC criteria for determining a reportable storm were met at 3 p.m. on August 23, 2007 (10,000 customers without power for at least 3 consecutive hours). The attached document shows the number of outages and customers interrupted within the established storm time range by outage cause category. At the peak of the storm over 300,000 customers were without power. ComEd restored power to approximately 75% of customers within 24 hours of losing power and 92% of customers within 48 hours.

See Q3 attachment ICCRequestComEd.pdf

(Note: ComEd has a job aid to assist field personnel in determining the cause code of an interruption.)

4. Had ComEd performed all necessary maintenance for its electric delivery facilities involved in the interruptions, including tree trimming and distribution line and substation inspection and repair or replacement? If yes, how did ComEd arrive at that conclusion?

Response:

Yes. ComEd had performed the necessary maintenance for its electric delivery facilities involved in the interruptions.

Vegetation Management - ComEd maintains a 4 year (48 month) tree trimming cycle and is on track with this cycle. The attached spreadsheet provides the circuits involved in the interruptions and the date of last trim prior to the August 23 storm.

See Q4 attachment Worksheet.pdf

Distribution Line Inspection, repair, replacement – ComEd conducts inspections of its feeders and prioritizes the work identified in the inspections based on the impact to reliability. For Distribution Overhead Circuit Inspection, ComEd's computerized maintenance management and work management system show that all cyclic distribution overhead circuit inspection preventive maintenance (PM's) were current, with no past or overdue items. Overall for these circuits, all high priority work which would have had a direct or immediate impact or high probability of affecting reliability was completed.

NESC Code: Installation & Maintenance
The document attached summarizes the NESC code installation and maintenance requirements that ComEd follows.

See Q4 attachment Storm Waiver Maintenance.pdf

Substation inspection, repair, replacement
Four substations experienced bus equipment outages as the storm passed through the respective areas.

These were:

TDC552 Addison - 12kV Line W5210 Circuit Breaker experienced a vacuum bottle failure while interrupting a feeder fault
TSS101 Itasca - 12kV W0111 and W0115 Lines experienced disconnect failures during feeder faults
TDC258 Elmwood - 12 feeders were experiencing concurrent faults.
TSS47 Evanston - 34kV L4781 Circuit Breaker lead failed above the bushing during a feeder fault

4. **Had ComEd performed all necessary maintenance for its electric delivery facilities involved in the interruptions, including tree trimming and distribution line and substation inspection and repair or replacement? If yes, how did ComEd arrive at that conclusion?**

Response (continued):

The PM and CM Work Order statuses were reviewed for the above locations.
All distribution breaker and relay related PM's were current, with no past or overdue items.
All distribution breaker, disconnect, and relay CM's were current, with no outstanding items related breaker operability, IR scans, or relay performance.

ComEd's preventative maintenance program (PM) was current at the time of the storm and on track.

5. **Did ComEd experience instances where the loading on its electricity delivery facilities prevented the transfer of customers to other feeders and extended the duration of interruptions to customers? If so, provide details and indicate which interruptions were so affected?**

Response:

There were no known issues of overloaded feeders that precluded ComEd from restoring service to customers in a timely manner. At the start of the storm, there was 1 hour where feeders over normal peaked at 0.6% of the total feeders we have on the system, this can be typical based on a normal operating day with temperatures in the 90's. At this same time, ComEd had 346 lockouts, or 7% of the total feeders, which is very atypical to a normal storm entering ComEd's service territory. The largest percentage of ComEd feeders that were over normal during the storm period was on August 28th, where only 1.5% of ComEd's total feeders were over normal, which again is a typical operating day in the 90's. At that point in time, there were 12 lockouts or 0.2% of ComEd's total feeders, which is a higher than normal lockout day. See graphic attached

See Q5 attachment LibertyFinalAugBlast.pdf

6. Did ComEd possess resources, including employees, equipment, and materials to restore electric service to customers in as short a time as reasonably possible?

Response:

Yes, ComEd did have access to and used sufficient resources including staffing, equipment and materials to restore customers in a timely manner.

Staffing

ComEd had approximately 5,255 employees engaged and working storm shifts. Included in this number were nearly 1,000 crews representing 4,100 ComEd employees. In addition, ComEd engaged 345 mutual assistance crews from Missouri, Texas, and Tennessee & Pennsylvania.

See Q6 attachment Staffing Numbers.pdf

Supplies

There were approximately 425 poles and over 500 transformers damaged during the storm and ComEd replaced over 100 miles of wire. To meet this challenge ComEd contacted 4 suppliers that were the primary suppliers that assisted in the storm. Beginning at approximately 1 p.m. on August 23rd, ComEd Supply Operations organization had conference calls each day twice a day at 1a.m. and 1 p.m. with supply vendors through Tuesday August 28th. Each of the four suppliers listed below participated in these calls and provided status updates.

Reed City - utility pole provider - delivered ~428 poles
Their staff consisted of:

- 2 admin people
- 12 drivers
- 4 driver helpers
- Total of 18 people logged approximately 1,550 hours (average 80-85 hours per person) for the storm

The contractor was on 24 hour call during the entire storm.

Wesco - distributor for electric distribution equipment – delivered ~ 178,384 pieces of equipment.
Their staff consisted of:

- 2 drivers
- 4 warehouse/office people

The contractors staff personnel worked ~ 146 man-hours around the clock during the storm and were on 24 hour call during the entire storm.

Choctaw Kaul - provide tools, safety and consumable items
There were 10 deliveries made for the storm of ~ 114 different items.

6. Did ComEd possess resources, including employees, equipment, and materials to restore electric service to customers in as short a time as reasonably possible?

Response (continued):

The contractor personnel worked ~ 178 hours during the storm and were on 24 hr call during the entire storm.

Southwire - provider of low voltage wire - provided 610,146 feet of wire

- 168 hours of labor (detail below)
  - 8 trucks, 8 drivers (no tandem deliveries)
  - Hours worked details:
    - 96 hrs - driver hours (8 trucks x 9 hour delivery from Atlanta, Georgia to Chicago, Il area)
    - 30 hrs- plant labor
    - 20 hrs - Southwire Sales/clerical support
    - 12 hrs- JSG Electric management support
    - 10 hrs - Southwire Management team support
- The contractor personnel were on 24 hr call during the entire storm.

ComEd Augmented Fleet

In addition to ComEd's normal equipment assigned to departments, ComEd Fleet brought ~ 25 vehicles to Maywood over a 2 day period to support the restoration efforts.

- 6 were ComEd vehicles and the rest were rentals. These vehicles included a mix of Material handlers, Digger derricks, and Bucket trucks.

7. Was ComEd's response to the Interruptions and the need to restore service to customers timely and effective?

Response:

Yes given the extreme scope and intensity of the storm system, ComEd's response was timely and effective. See response to question 3 for more detail concerning that response. In total approximately 650,000 customers lost service due to more than 4,290 distinct interruptions that ComEd had to address. At the peak of the storm, over 300,000 customers were without power. Nonetheless, ComEd restored power to 75% of the customers within 24 hours of loosing power and 92% of the customers within 48 hours.

8. Did ComEd consider whether conditions reasonably expected in ComEd's service territory require design, construction or maintenance standards beyond the minimum standards set forth in 83 Illinois Administrative Code 305 to enable service to be safe, adequate, and dependable?

Response:

Yes. From a structural perspective, the National Electric Energy Testing, Research and Applications Center (NEETRAC) recently reviewed ComEd structural loading standards. They were found to exceed the NESC requirements that the ICC adopts. They also meet and exceeded the 2007 NESC requirements. These include Gravity Loading (this is a ComEd requirement that considers two line crew workers and their tools on the pole), NESC Heavy Loading (see the next paragraph for details regarding what constitutes NESC Heavy Loading), and NESC Extreme Wind Loading (see the next paragraph for what constitutes Extreme Wind Loading).

In addition, the NESC itself takes into consideration variations in conditions in different utilities' service territories. The NESC considers three factors in calculating loads on conductors and structures. These three are 1) temperature, 2) wind, and 3) ice. The NESC has divided the country into loading areas. Northern Illinois falls into the "heavy" loading area. This means that 0°F, a 4 lb. per square foot wind plus ½ inch of ice is used as criteria in ComEd territory for structures or poles under 60 feet tall. For poles or structures over 60 feet above ground, the load that results from these conditions is compared to the loads that result from about a 90-mph wind and no ice (Extreme Wind Loading), which is similar to the August Blast conditions. Per NESC Rule 250A, whichever load results in the greatest effect shall be used. The maps that designate the loading zones and the wind velocity used are developed based on 50 years of data. (For 2007, the NESC added Rule 250D. This Rule describes "Extreme Ice With Concurrent Wind Loading" conditions.)

The total load on the conductor and on the pole or structure is the resultant load from the vertical load and the horizontal load plus a constant. The vertical load is the weight of the conductor, all the associated hardware it supports, and the ice. The horizontal load is the wind pressure calculated under the same conditions. Table 250-1 lists those values noted in the previous paragraph for temperature, wind, and ice used to calculate the loads.

These values are multiplied by an Overload Strength Factor as specified in Rule 253 of the NESC that is determined by the Grade of Construction required for a particular situation. Grade C construction is required for most locations with Grade B required for railroad and limited access highway (interstate) crossings. (For the 2007 NESC, Grade B will also be required for all crossings on navigable waterways.) The strength factors and the Grade of Construction are factors considered in ComEd Engineering Practice documents and the predecessors of those, the Engineering Standard Practices documents.

8. Did ComEd consider whether conditions reasonably expected in ComEd's service territory require design, construction or maintenance standards beyond the minimum standards set forth in 83 Illinois Administrative Code 305 to enable service to be safe, adequate, and dependable?

Response (continued):

In addition to the strength related construction, as noted in Q1, ComEd Construction Standards exceed the requirements in the number of ground locations installed and arrester locations. The number specified has been calculated using several different methods, including software from the Electric Power Research Institute (EPRI). These calculations have shown that the number of installations per mile specified by ComEd to be the most effective from both a reliability and cost effectiveness standpoint.

→ { After Midnight

MURRAY AND TRETTEL INC
Certified Consulting Meteorologists
Phone:847-963-9000 X 2
FAX:847-963-0245

STORM WARNING

DDC EXELON / ComEd

AREAS: NW-NORTHWEST, WC-WEST CENTRAL, EC EAST CENTRAL
NE-NORTHEAST, CC-CHICAGO, SW-SOUTHWEST, SE SOUTHEAST

Phone: 815-463-2900
FAX: 815-463-2998

DATE/DAY: 8/23/07 STORM NUMBER: 109B Time: 1805 FCSTR: [illegible]

AREA	TYPE OF WEATHER	WINDS SUSTAINED	WINDS GUSTS	START TIME	ENDING TIME	LIGHTNING DENSITY	COLOR CODE PRIMARY	COLOR CODE ALTERNATE	(%) OVERALL CONF
NW									
WC	TS torms	10-20	Few 60-70	3-4pm	6-8pm	1000-1500	Red 8	Black 2	75
EC	↓	↓	↓	↓	↓	↓	↓	↓	↓
NE									
CC	↓	↓	↓	↓	↓	↓	↓	↓	↓
SW									
SE									

REMARKS

DCSTORM.WB3 REVISED 7/09/05

AUG-23-2007 15:06 P.001/001 847 963 0201 WEATHER COMMAND
AUG-23-2007 03:03PM From: 847 963 0201 ID:COM ED OCC TOTAL P.001 Page:001 R=95%

IURRAY AND TRETTEL INC
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hone:847-963-9000 X 2
AX:847-963-0245

STORM WARNING

AREAS: NW-NORTHWEST, WC-WEST CENTRAL, EC EAST CENTRAL
NE-NORTHEAST, CC-CHICAGO, SW-SOUTHWEST, SE SOUTHEAST

DDC EXELON / ComEd

Phone: 815-463-2900
FAX: 815-463-2998

DATE/DAY: 8/23/07 Thurs STORM NUMBER: 1084 Time: 1255 FCSTR: SM

AREA	TYPE OF WEATHER	WINDS SUSTAINED	WINDS GUSTS	START TIME	ENDING TIME	LIGHTNING DENSITY	COLOR CODE PRIMARY	COLOR CODE ALTERNATE	(%) OVERALL CONF
NW	T. Storms	10-20	50-60	Now	7-9pm	1000	Red 7	Yellow 3	75
WC				3-5pm	8-10pm				
EC									
NE									
CC									
SW									
SE									

REMARKS

DCSTORM.WB3 REVISED 7/09/05

AURORA	4260
BOLINGBROOK	1378
CHICAGO NORTH	530
CHICAGO SOUTH	1339
CRESTWOOD	1832
CRYSTAL LAKE	816
DEKALB	14934
DIXON	11963
ELGIN	3667
FREEPORT	90
GLENBARD	1551
JOLIET	16080
LIBERTYVILLE	826
MAYWOOD	836
MT. PROSPECT	2423
ROCKFORD	440
SKOKIE	700
STREATOR	9484
UNIVERSITY PARK	8693

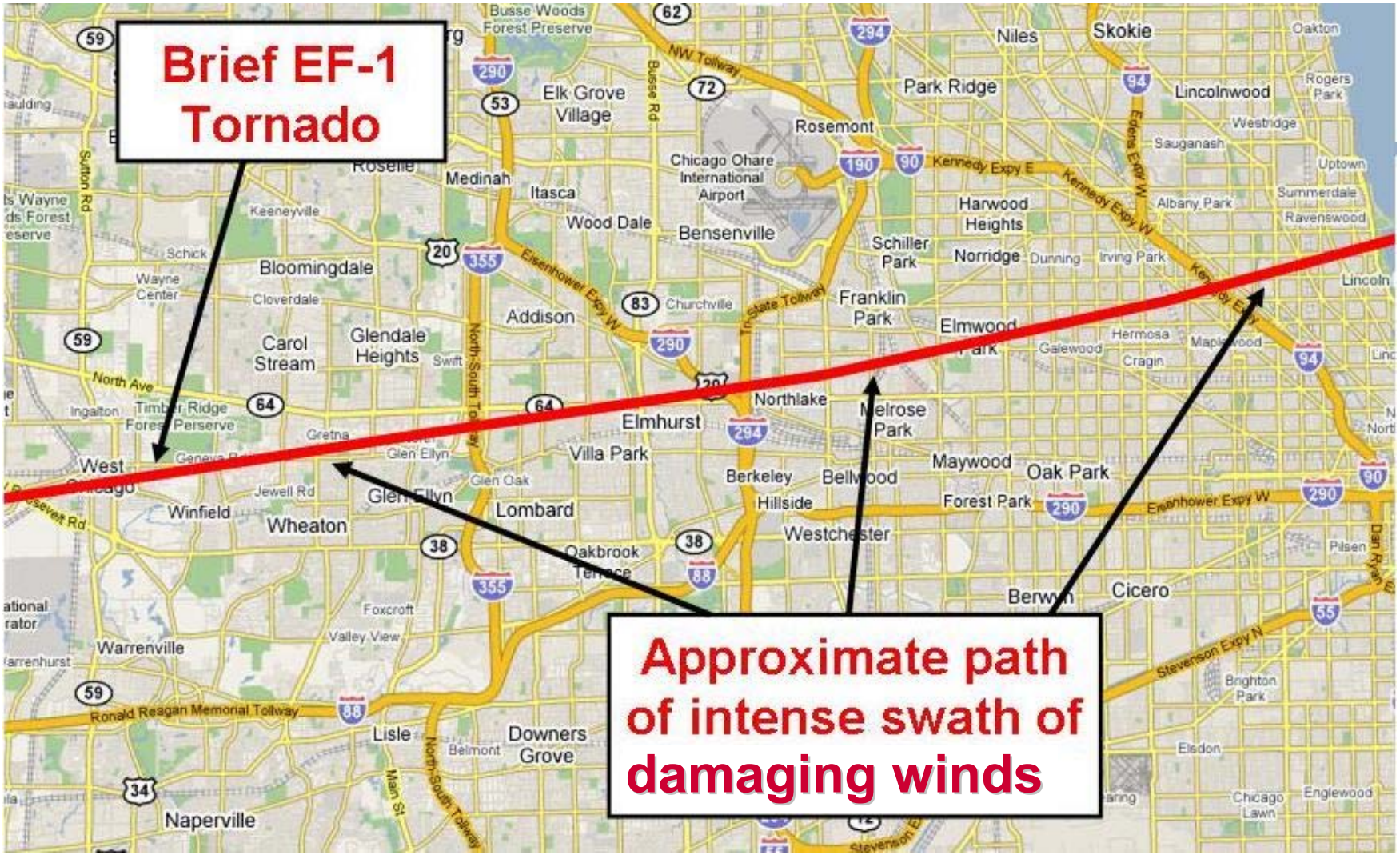
AURORA	25
BOLINGBF	1
CHICAGO	10
CHICAGO	6
CRESTWC	17
CRYSTAL	4
DEKALB	1176
DIXON	139
ELGIN	524
FREEPOR	2
GLENBAR	35
JOLIET	511
LIBERTYV	27
MAYWOOI	1
MT. PROS	28
ROCKFOR	0
SKOKIE	5
STREATOI	422
UNIVERSI	529

DMC	8/23/07 LIGHTNING STROKES	8/24/07 LIGHTNING STROKES	DMC TOTAL
AURORA	4,260	25	4,285
BOLINGBROOK	1,378	1	1,379
CHICAGO NORTH	530	10	540
CHICAGO SOUTH	1,339	6	1,345
CRESTWOOD	1,832	17	1,849
CRYSTAL LAKE	816	4	820
DEKALB	14,934	1,176	16,110
DIXON	11,963	139	12,102
ELGIN	3,667	524	4,191
FREEPORT	90	2	92
GLENBARD	1,551	35	1,586
JOLIET	16,080	511	16,591
LIBERTYVILLE	826	27	853
MAYWOOD	836	1	837
MT. PROSPECT	2,423	28	2,451
ROCKFORD	440	0	440
SKOKIE	700	5	705
STREATOR	9,484	422	9,906
UNIVERSITY PARK	8,693	529	9,222
		TOTAL	**85,304**

Source: NOAA's National Weather Service Weather Forecast Office *(website)*

http://www.crh.noaa.gov/crnews/display_story.php?wfo=lot&storyid=9877&source=0

August 23rd 2007 Severe Weather Damage Survey/Radar Images (Updated 8/26)



National Weather Service

Watches, Warnings & Advisories

Tornado Warning

TORNADO WARNING
ILC037-089-232015-
/O.NEW.KLOT.TO.W.0016.070823T1929Z-070823T2015Z/

BULLETIN - EAS ACTIVATION REQUESTED
TORNADO WARNING
NATIONAL WEATHER SERVICE CHICAGO/ROMEOVILLE IL
229 PM CDT THU AUG 23 2007

80 mph winds

THE NATIONAL WEATHER SERVICE IN CHICAGO HAS ISSUED A

* TORNADO WARNING FOR...
  DEKALB COUNTY IN NORTH CENTRAL ILLINOIS...
  KANE COUNTY IN NORTHEAST ILLINOIS...

* UNTIL 315 PM CDT...

* AT 225 PM...NATIONAL WEATHER SERVICE RADAR INDICATED STRONG
  ROTATION IN A SEVERE THUNDERSTORM NEAR MALTA...MOVING EAST AT 45
  MPH. IN ADDITION TO THE TORNADO THREAT...WIDESPREAD WIND DAMAGE
  WITH WINDS IN EXCESS OF 80 MPH ARE LIKELY WITH THIS VERY DANGEROUS
  STORM!

* THE TORNADO WILL BE NEAR...
  CORTLAND BY 235 PM...
  MAPLE PARK BY 240 PM...
  ELBURN BY 250 PM...
  ST. CHARLES...GENEVA...BATAVIA...AND 7 MILES NORTH OF NORTH AURORA
  BY 300 PM...

TAKE COVER NOW! IF NO BASEMENT IS AVAILABLE...MOVE TO AN INTERIOR
ROOM ON THE LOWEST FLOOR. MOBILE HOMES AND VEHICLES SHOULD BE
ABANDONED FOR MORE SUBSTANTIAL SHELTER. AVOID WINDOWS!

THIS TORNADO WARNING REPLACES THE SEVERE THUNDERSTORM WARNING
PREVIOUSLY ISSUED FOR THIS AREA.

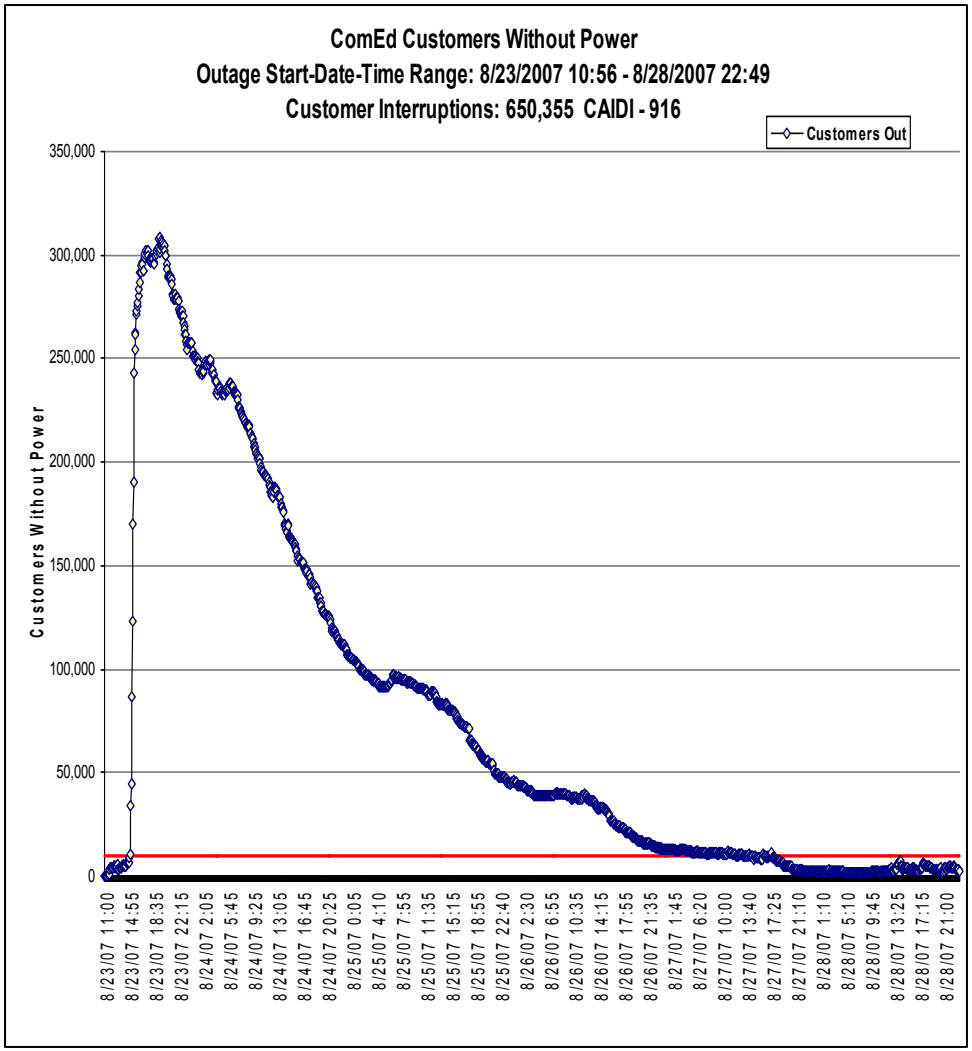
LAT...LON 4195 8887 4177 8887 4179 8827 4200 8827

$$

IZZI

ComEd Q2 Attachment Scan 001

ComEd
8/23/07 – 8/28/07 Storm



99% of Causes of Customer Interruptions

Cause	Cause Detail	# Outages	# Customers
Weather Related	Lightning	1294	262,674
Tree Related	Limb Broken - Primary	769	175,852
Weather Related	Wind / Tornado	534	66,279
Intentional	Emergency Repairs	129	31,128
Tree Related	Tree Contact - Primary	244	28,762
Underground Equipment Related	Underground Failure	229	27,443
Overhead Equipment Related	Malfunction	131	17,026
Tree Related	Uprooted Tree - Primary	41	8,383
Unknow n	Unknow n	48	6,634
Transmission and Substation Equipment Related	Transmission System Outage	1	5,270
Public	Vehicles	13	3,608
Weather Related	Flooding	8	3,576
ComEd/Contractor Personnel-Errors	Sw itching Error	6	3,027
Transmission and Substation Equipment Related	Substation Equipment	2	2,932
Underground Equipment Related	Malfunction	46	2,241

Outage Types

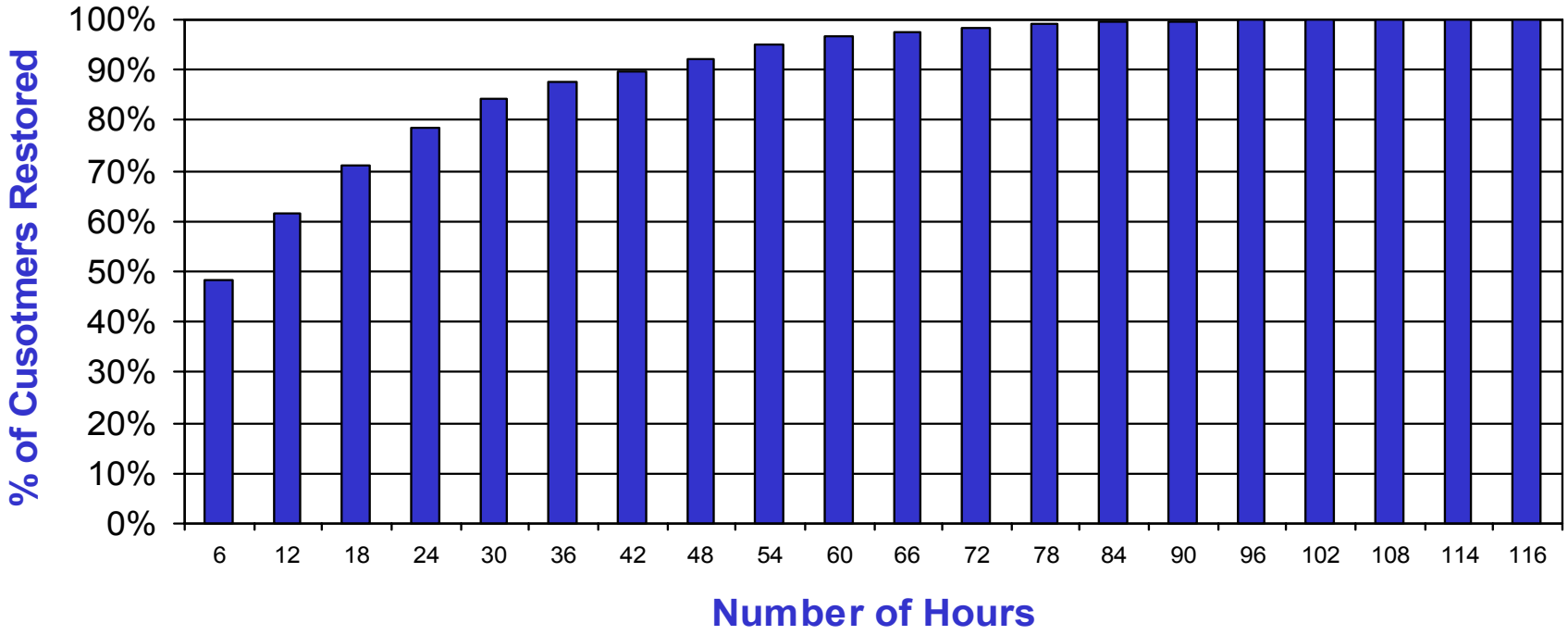
	# of Outages	# of Customer Interruptions	CAIDI
LOCKOUTS	422	411,700	743
1st RESTORE ON LOCKOUTS	-	294,168	574
DEVICES AND TRANSFORMERS	2,711	237,443	1,213
SECONDARY	5	12	2,314
SERVICE	1,149	1,200	1,611

Regions Affected

Region	Customer Interruptions
Chicago	101,010
North	330,560
West	57,630
South	161,155

All outages 1 minute or more

Percent of Customers Restored by Customer Outage Duration
ComEd August 23-28 Storm



Hours	Customers	% of Total Customers
6	314,558	48.4%
12	401,185	61.7%
18	462,723	71.2%
24	511,905	78.7%
30	548,784	84.4%
36	569,857	87.6%
42	583,550	89.7%
48	598,273	92.0%
54	617,366	94.9%
60	629,356	96.8%

Hours	Customers	% of Total Customers
66	634,854	97.6%
72	640,889	98.6%
78	645,187	99.2%
84	646,978	99.5%
90	647,987	99.6%
96	649,665	99.90%
102	650,167	99.98%
108	650,255	99.99%
114	650,257	99.99%
116	650,355	100.00%

All outages 1 minute or more

The National Electric Safety Code (NESC) discusses installation and maintenance of electric supply lines and equipment. Safeguarding personnel during installation, construction, and maintenance is the primary concern.

The 2002 Edition of the National Electrical Safety Code (NESC) provides basic safety requirements for the installation, operation or maintenance of outdoor communication and electric power facilities. It therefore complements the National Electrical Code (NEC) which provides requirements for indoor facilities. The NESC is intended to primarily focus on helping ensure the safety of employees and the public, and is not intended to be a design specification or instruction manual.

The NESC addresses maintenance of overhead lines:

- Section 214 - Inspection And Tests Of Lines And Equipment (overhead lines)
- Section 218 - Tree Trimming

Section 214 - Inspection And Tests Of Lines And Equipment

The rules for inspection and testing on lines and equipment are broken down into two parts, when in-service and when out-of-service. The open or closed status of a switch, fused cutout, recloser, etc., will determine if a line is in- or out-of-service. A line that is permanently abandoned must be removed or maintained in a safe condition. Opening the cutouts on the line and grounding the line may make it electrically safe but not structurally safe. If the permanently abandoned line is leaning or falling over, it must be removed or maintained in a safe condition.

Rule 214 applies to overhead supply and communications lines. Similar inspection rules are outlined in Rule 121 for electric supply stations and Rule 313 for underground lines.

Rule 214 does not provide a specific requirement as to how often to inspect overhead lines. The inspection frequency must be determined by the utility “at such intervals as experience has shown to be necessary.” This statement should consider what the local conditions are, for example, do poles rot faster in some areas due to acidic soil conditions, do insulators fail more in some areas due to salt fog, pollution from a nearby factory, lightning, etc. A utility must have an inspection program that has proper record keeping and inspection frequency; however, the frequency of the inspection must be determined by the utility. Finding out what other utilities use for an inspection frequency and making proper adjustments may be a starting point for a utility without an inspection program.

The Code recognizes that inspections may be performed as a separate duty or performed while performing other duties. This statement does not eliminate the need for an inspection program or permit an “inspect it only if I see it” program. If an employee notices a defect while performing another task, the defect must be corrected, not ignored.

Cutouts, switches, reclosers, circuit breakers, etc., are used to switch overhead lines and determine if a line is in or out of service. Rule 214, does not specify the inspection or testing intervals.

Section 218 - Tree Trimming

The NESC does not provide a specific clearance from a conductor (of any voltage) to a tree.

The Code recognizes that at times tree trimming or removal may not be practical.

If tree trimming or removal is not practical, the Code requires using methods to separate the conductor from the tree to avoid damage by abrasion and grounding. This requirement is very general. No specifics are provided as to how to accomplish the separation.

ComEd has three systematic programs related to its overhead distribution system:

1. An overhead circuit inspection program that visually inspects all feeder poles at least every four years:
    a. 2-year 34kV program
    b. 4-year 4-12kV program
2. An overhead circuit thermography inspection that visually inspects all main-line feeder poles at least every four years.
    a. 2-year 34kV program
    b. 4-year 4-12kV program
3. A wood pole inspection and treatment program that identifies poles 12 years old and older which have begun to deteriorate and provide supplemental treatment to prevent and halt further deterioration. ComEd crews are also required to perform a safety inspection on a pole before performing work on the pole.
    a. Variable
4. A vegetation management/line clearance program designed to minimize power interruptions and hazards caused by tree branches and other types of vegetation that come in contact with power lines.
    a. 4-year cycle

The following procedures provide additional details on Inspection And Tests Of Lines and Equipment or Tree Trimming:

AM-ED-P034 - Preventive and Predictive Maintenance Program
To provide guidelines for the development, documentation, implementation, and oversight of an effective preventive (PM) and predictive (PdM) maintenance program for the electric transmission, substation, and distribution assets. A successful maintenance program will ensure the reliability of the system.

AM-ED-P034-R0001 - EED PCM Template Index

Distribution Related PCM Templates
AM-ED-P034-R3002 Distribution Aerial Conductor
AM-ED-P034-R3007 Distribution Wood Poles

CM-ED-021001 - Overhead Distribution Circuit Inspection And Maintenance Procedure
ComEd uses in house Maintenance Inspectors to inspect its overhead circuit population (4kV, 12kV, 13kV, and 34kV overhead circuits).

ComEd Maintenance Inspectors perform a visual inspection of overhead primary conductors in order to identify repairs which may lead to an outage. The inspection identifies broken or damaged: arms, arresters, fault indicators, fused cutouts, grounds, insulators/deadends, poles, primary conductors, & tie wires.

The visual inspection identifies broken equipment such as crossarms, poles, insulators, cutouts, blown lightning arresters, and clearance issues.

ComEd performs regular maintenance and repairs on its equipment throughout the year.

ComEd has a prioritization system for all repairs.

Maintenance and repairs are prioritized in accordance to Work Management procedure WM-ED-P014 (Work Screening And Prioritization).

In general, repairs may be prioritized into four categories:

- Priority 10 repairs require an immediate response and will be worked 24/7 until they are complete. These are repairs that have an immediate impact on the number or length of customer power outages.
- Priority 20 repairs are required to begin within 24 hours, depending on system conditions (ie weather). The work is targeted for completion within 14 days.
- Priority 30 repairs must be completed within eight weeks
- Priority 40 repairs are longer-term items. They do not pose an impact on the number or length of power outages.

ComEd also has special “Fix it Now” teams that focus on making high-priority repairs to ensure they get done quickly and to avoid taking away resources from the more routine maintenance that we need to do.

ComEd spends between $40-$50 million per year on corrective maintenance on our overhead distribution system.

In non-storm situations, it is not unusual to have about 20 percent of our 1,000 overhead employees handling regular maintenance and repair work. This is in addition to underground workers handling similar assignment for the underground system.

On a typical day, we have about 200 field construction employee (75 crews) working on corrective maintenance.

Overhead Circuit Thermography Inspection

ComEd uses a contractor (United Pole Technologies) to inspect its overhead circuit population.

The overhead circuit thermography inspection is a reliability program. It has been in existence since 1999. It involves infrared inspection of electrical equipment along the overhead distribution feeders and visual inspection of poles and other equipment along the feeders. This program does not cover the lateral taps.

Overhead circuit thermography is a non-intrusive technique is used to monitor the operating condition of equipment and components. Thermography is a Preventive Maintenance (PM) tool that allows for the identification of anomalies prior to failure, and allows for the scheduling of corrective maintenance. It is a diagnostic inspection technology that is used to help determine maintenance requirements of the Distribution system.

An infrared camera is used to determine “hot-spots” (temperature variations) at equipment and electrical connections.

The thermography camera is detecting the energy levels from one surface and comparing that level with another surface. These energy levels show themselves as invisible light waves that are part of the electromagnetic spectrum known as infrared. Excessive temperature differences are a clue that something may not be operating properly.

The thermography inspection identifies thermal anomalies at bolted connections, splices, and disconnects.

Wood Pole Inspection
ComEd uses a contractor (Osmose Utilities Services, Inc) to inspect and treat its wood pole population.

During the inspection, the pole is checked for signs of decay. If decay is found, the pole is treated to stop the decay. The pole's remaining strength is evaluated based on the remaining healthy wood. If the remaining strength has dropped below 66% of the original strength, it is categorized as a "reject" pole. A pole is categorized as a "priority reject" if there is a hollow center and less than one inch of shell at any point around the circumference or with a completely decayed butt.

Rejected poles are then checked to determine if they can be restored via c-truss installation. This determination is largely based on factors above and beyond the natural decay of the pole. Some pole locations do not have available space to accommodate a c-truss installation. Those poles would be categorized as "non-restorable".

ComEd utilizes a method for pole reinforcement known as "c-trussing". With this method, a steel brace is driven into the ground alongside the pole. The c-truss is attached to the pole with steel banding. This is a cost effective measure to restore the pole to its original strength. This is considered a permanent repair.

ComEd has approximately 1.4 million utility poles

ComEd initiated an aggressive two-year program in 2005 and 2006 to address priority reject poles. Over the two-year period, a total of 6647 poles were addressed. A total of 2223 poles were replaced and 4424 poles were restored via c-truss installation.

The cost of our 2005-2006 program was $17 million.

This year we are spending about $1 million.

In 2007, we resumed a regular pole replacement program. This year, we have already replaced 122 poles, and we plan to replace another 85 before the end of the year.

We also replace poles on an emergency basis when they are damaged due to storms, vehicle accidents, etc. Since 2005, we have replaced about 3,800 poles on an emergent basis, or about 750 poles per year. We spend between $2 million and $6 million on emergent pole replacements each year.

ComEd distribution pole performance during non-storm conditions is good. Non-storm pole failures have virtually no contribution to customer interruptions.

As part of its routine engineering jobs to serve customers, ComEd also has many opportunities to inspect distribution poles. Such jobs include connecting and disconnecting overhead services, repair and/or replacement of devices on poles (crossarms, insulators, connectors, lightning arrestors, etc), streetlight repairs, and responses to trouble calls. Each of these jobs affords the opportunity to inspect the poles. Should there be any safety concerns or poor pole conditions, the crews or engineers would so note the condition and pass that information on to the FIN supervisor.

Vegetation Management/Line Clearance Program
ComEd uses a contractor (Asplundh Tree Expert Co) to perform line clearance activities.

4-year cycle (8,625miles/year)

The vegetation management/line clearance program is designed to minimize power interruptions and hazards caused by tree branches and other types of vegetation that come in contact with power lines. We clear limbs, trees, vines, and other plants away from power lines before they have a chance to damage facilities or equipment.

Our vegetation management contractors are specially trained and qualified to trim and remove trees in close proximity to electrical conductors. They are also trained in the proper arboricultural techniques. The pruning techniques utilized meet the standards set by the National Arborists Association and the International Society of Arboriculture.

CM-CE-9004 EED West Construction And Maintenance Walkdown And Job Closing
A field confirmation is conducted by a Construction Supervisor after the work has been completed in the field. This confirmation ensures the work has been performed per the design or "AS BUILT" design changes are identified on the construction drawings prior to returning to the designer.

AD-ED-105 Procedure Use And Adherence
ComEd provides direction to company or contractor personnel on the required reference to the procedure during performance of any work based on the relative probability of making an error and the impact of an error.

Expectations on the required reference to the procedures are categorized as Level 1, Level 2, and Level 3.

- Level 1 Procedure is a Continuous Use Procedure: Reading each step of the procedure prior to performing that step. A Level I Procedure SHALL be in the possession of the primary individual responsible for the proper performance of the task.
- Level 2 Procedure is a Reference Use Procedure: Referring to a procedure that is reasonably available at the work location for reference either prior to or periodically during the performance of an activity.
- Level 3 Procedure is an Information Use procedure: An activity that is typically performed from memory. The procedure is available, but not necessarily at the work location.

ComEd construction standards are considered a Level 2 Procedure and are available to construction workers at work locations for reference.

Training
TQ-ED-10 Training And Qualification Program
TQ-ED-104 On-The-Job Training And Evaluation Activities
TQ-ED-111 Overhead Electrician/Aerial Line Mechanic Training Program
The safe operation and maintenance of the electric distribution system is addressed in Occupational Safety and Health Administration (OSHA) 1910.269.

ComEd employees are trained in and familiar with the safety-related work practices, safety procedures, and other safety requirements in this section that pertain to their respective job assignments.

ComEd maintains Training And Qualification Program of its overhead construction workforce

Initial training provides personnel with requisite knowledge and skills to independently perform their job function.

Continuing training refreshes and improves the application of knowledge and job related skills for improved job performance.

ComEd trains and qualifies personnel in the knowledge and skills to perform their jobs in accordance with its construction standards. Training personnel are supported/augmented by construction line personnel in all progression training topics.

Overhead Electrician Training:
- Climbing School: A school that provides instruction in basic pole climbing techniques.
- Basic Line School: Entry-level training that provides the knowledge and skills required for personnel to safely and effectively perform the elementary tasks associated with their job.
- Single Phase School: Training that provides the technical knowledge skills and abilities required working single phase or multi-phase tasks where it is not necessary to reach over energized conductors to perform a given task.
- Three Phase School: Training that provides the technical knowledge, skills and abilities required for personnel to safely and effectively perform the higher level tasks associated with the job. Completion of these schools qualifies the worker to perform work on all types of construction with the exception of those skill considered specialty tasks.
- On-The-Job Training (OJT): Structured training activities conducted in the job environment, through which trainees achieve defined learning objectives.

Equipment Failure Investigation
AM-ED-1017 Equipment Failure Investigation Forensic Evidence Handling
AM-ED-129-8001 Electric Equipment And Component Failure Process
Electric Distribution Equipment (devices, equipment, hardware, cable, and wire) whose failure or suspected non-conformance to the product specification are subject to analysis in order to determine the cause of the failure.

Product experts/Subject Matter Experts analyze defective equipment or components to identify trends. These trends may lead to changes in materials or construction standards.

When necessary, technical bulletins are issued to engineering and construction personnel to discuss lessons learned or changes in materials or construction standards.

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
031X042	8/2/2007
032X041	6/17/2005
304X051	1/16/2004
305X142	4/7/2006
307X050	12/31/2003
307X050	12/31/2003
310Y149	8/30/2005
311X143	12/29/2003
312X45	10/13/2006
313X143	10/30/2006
315X646	1/17/2006
315X646	1/17/2006
318X142	10/21/2003
318X443	10/29/2003
380X453	6/12/2006
793Y33	3/17/2005
793Y45	3/11/2005
A282	5/10/2005
A3414X	6/26/2007
A702	9/19/2003
A941	10/23/2003
B125	12/15/2006
B125	12/15/2006
B162	9/22/2006
B171	10/27/2006
B275	7/28/2006
B355	11/23/2004
B456	4/17/2004
B541	12/4/2006
B701	5/5/2004
B703	6/14/2004
B906	11/12/2004
C046Y	3/23/2007
C0913	11/17/2006
C0917	11/18/2006
C101	3/23/2005
C102	2/18/2005
C1212	5/1/2006
C1212	5/1/2006
C1214	5/1/2006
C1218	2/20/2006
C1220	2/28/2006
C1220	2/28/2006
C123	12/22/2005
C124	2/3/2006
C125	3/21/2006
C129	2/21/2006
C129	2/21/2006

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
C132	4/6/2006
C1322	1/7/2007
C133	12/15/2006
C138Y	4/4/2006
C139	12/30/2006
C143	1/19/2007
C1510	9/16/2005
C1510	9/16/2005
C1511	10/4/2005
C1515	3/29/2005
C1515	3/29/2005
C1516	9/6/2005
C1517	9/13/2005
C161	11/3/2006
C162X	11/2/2006
C164	10/30/2006
C165X	11/5/2006
C165X	11/5/2006
C166	10/27/2006
C168	10/30/2006
C169	11/3/2006
C1711	4/4/2005
C172	3/28/2005
C1723	3/13/2006
C1724	3/3/2006
C1728	4/11/2006
C1730	4/7/2006
C1731	5/1/2006
C1736	4/13/2006
C192	1/30/2007
C201	1/14/2005
C211	New circuit
C227	1/19/2004
C227	1/19/2004
C253	New circuit
C253	New circuit
C265	12/14/2005
C268	12/7/2005
C2911	12/20/2003
C2914	12/19/2003
C296	1/16/2004
C297	1/16/2004
C298	1/2/2004
C314	11/19/2004
C316	11/12/2004
C316	11/12/2004
C339	3/2/2007
C348	1/19/2007

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
C365	12/6/2004
C367	12/10/2004
C374	1/17/2007
C414	2/8/2005
C415	2/7/2005
C416	1/4/2005
C421	11/15/2004
C423	11/8/2004
C424	11/11/2004
C426	11/12/2004
C427	11/6/2004
C435	1/14/2004
C461	11/12/2005
C4613	10/29/2005
C4613	10/29/2005
C462	11/16/2005
C463	12/7/2005
C463	12/7/2005
C466	11/8/2005
C469	12/17/2005
C4711	12/28/2004
C477	1/20/2005
C4810	3/9/2007
C486	3/9/2007
C495	11/26/2004
C496	12/2/2004
C497	12/29/2004
C517	11/5/2005
C518	11/4/2005
C53	12/5/2004
C550	11/17/2004
C554	12/15/2004
C557	12/27/2004
C564	10/27/2004
C564	10/27/2004
C5811	3/9/2005
C582	2/9/2005
C583	3/3/2005
C584	2/24/2005
C586	2/25/2005
C587	3/2/2005
C587	3/2/2005
C588	2/14/2005
C623	10/7/2004
C627	11/3/2004
C675	10/21/2004
C720	2/4/2004
C7212	11/19/2003

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
C7213	8/28/2003
C7213	8/28/2003
C7214	10/27/2003
C7215	12/19/2003
C7216	12/18/2003
C7221	6/1/2007
C7222	12/19/2003
C7222	12/19/2003
C7222	12/19/2003
C7223	2/13/2004
C7223	2/13/2004
C7225	2/23/2004
C7225	2/23/2004
C723	2/20/2004
C723	2/20/2004
C725	9/2/2003
C725	9/2/2003
C726X	10/30/2003
C728	5/31/2007
C75	10/21/2004
C755	2/9/2005
C758	1/19/2005
C779	2/2/2004
C80	12/17/2004
C80	12/17/2004
C801	12/7/2005
C801	12/7/2005
C82	12/17/2004
C83	12/29/2004
C8511X	2/13/2004
C856	2/22/2007
C86	12/17/2004
C8811	12/2/2004
C8814	12/2/2004
C895	11/3/2004
C896	11/10/2004
C917	12/3/2004
C917	12/3/2004
C958	3/9/2004
C9812X	2/20/2004
C9813	2/26/2004
C9814X	8/6/2007
C9814Y	8/2/2007
C9820	2/19/2004
D0502	1/26/2007
D0502	1/26/2007
D0503	1/17/2007
D0506	3/2/2007

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
D124	11/22/2005
D152	11/12/2005
D16	1/17/2007
D2002	11/11/2005
D22	1/19/2007
D291	5/31/2007
D308	1/19/2007
D31	12/2/2005
D311X	4/17/2007
D3301	1/25/2006
D3424	4/22/2004
D46	1/23/2006
D4601	2/28/2006
D465	2/7/2006
D467	2/13/2006
D4701	11/22/2005
D480	12/5/2005
D4901	4/7/2006
D4901	4/7/2006
D4903	4/15/2005
D4912	4/7/2006
D5108	10/7/2003
D5112	9/13/2003
D52	2/20/2006
D52	2/20/2006
D577	11/15/2003
D6412	11/4/2005
D6415	10/21/2005
D6416	10/14/2005
D6417	11/19/2005
D690	11/22/2005
D7812	3/10/2006
D788	4/21/2006
D80	1/19/2006
D84	1/20/2006
D9310	5/15/2007
D9312	12/6/2003
D9322	12/19/2003
D9323	11/14/2003
D991	3/2/2006
DRXL044	5/27/2005
E0217	2/20/2006
E0220	2/21/2006
E0220	2/21/2006
E0225	3/10/2006
E023	2/3/2006
E024	2/17/2006
E024	2/17/2006

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
E060X	7/27/2006
E060Y	7/10/2006
E0610	6/2/2005
E0611	6/1/2005
E0615	5/27/2005
E0718	8/31/2006
E0723	9/8/2006
E111	7/29/2005
E121	1/17/2006
E1415	10/13/2003
E141Y	9/15/2003
E1423	9/5/2003
E148	5/4/2007
E175	12/14/2004
E2007	10/18/2003
E2007	10/18/2003
E2014	10/18/2003
E2511	10/13/2006
E253	9/14/2006
E256	10/11/2006
E286	5/23/2006
E3313	5/11/2007
E3314	New circuit
E339	2/13/2007
E3520	5/7/2007
E3520	5/7/2007
E395	12/12/2005
E4001	5/18/2007
E4002	5/18/2007
E4817	7/27/2007
E501	5/19/2004
E502	5/13/2004
E520Y	12/29/2004
E521	1/14/2005
E5211	3/11/2005
E5213X	1/26/2005
E5213Y	2/20/2005
E5215X	2/18/2005
E5215Y	3/3/2005
E5217	12/29/2004
E5219	1/14/2005
E5221X	2/22/2005
E5222	3/9/2005
E5223Y	1/15/2005
E523	12/30/2004
E524	12/22/2004
E525Y	3/4/2005
E529	2/22/2005

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
E5310X	6/2/2005
E5319	6/10/2005
E6020	9/1/2006
E6020	9/1/2006
E6021	9/15/2006
E6022	8/25/2006
E6025	7/14/2006
E6025	7/14/2006
E6816X	12/18/2003
E681X	12/19/2003
E681X	12/19/2003
E6820	5/29/2007
E6823	12/15/2003
E685	3/2/2007
E688	5/28/2007
E688	5/28/2007
E695	1/11/2006
E698	1/9/2006
E698	1/9/2006
E699	1/27/2006
E706	12/12/2005
E707	12/12/2005
E707	12/12/2005
E81	10/10/2006
E81	10/10/2006
F125	3/24/2007
F125	3/24/2007
F126	3/26/2007
F175	6/22/2004
F2778	5/30/2007
F2797	5/30/2007
F295	6/4/2004
F3573	4/17/2007
F3575	6/11/2007
F3577	6/29/2007
F3578	6/27/2007
F3582	7/6/2007
F3586	1/5/2004
F365	1/10/2007
F458	2/26/2007
F463	9/12/2006
F463	9/12/2006
F465	9/20/2006
F465	9/20/2006
F466	6/19/2006
F4772	4/14/2006
F4772	4/14/2006
F5271	4/27/2006

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
F5283	7/6/2006
F5381	5/19/2004
F5381	5/19/2004
F574	11/9/2006
F575	11/17/2006
F575	11/17/2006
F576	12/15/2006
F577	11/28/2006
F755	1/31/2007
F961	2/6/2007
G091	New circuit
G101	1/5/2007
G102	1/10/2007
G137	5/16/2007
G148	2/18/2004
G148	2/18/2004
G1971	10/8/2006
G1977Y	9/19/2006
G1987	11/1/2006
G1989	10/25/2006
G211	6/29/2004
G281	12/5/2003
G282	4/5/2004
G284	12/18/2003
G315	2/10/2005
G401	10/14/2005
G404	11/29/2005
G4072	1/23/2006
G4081	12/30/2005
G4083	12/14/2005
G428	2/26/2004
G4373	11/4/2003
G4376	5/5/2004
G4377	1/2/2004
G4377	1/2/2004
G4382	4/28/2004
G58	9/8/2006
G58	9/8/2006
G583	7/15/2005
G583	7/15/2005
G588	3/25/2005
G589	3/25/2005
G6028	2/22/2007
G6072	8/17/2007
G6091	3/26/2004
G611	12/13/2003
G617	12/31/2003
G6181	1/12/2004

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
G6183	5/22/2007
G6185	5/18/2007
G6185	5/18/2007
G6186	8/27/2003
G6186	8/27/2003
G6190	8/10/2007
G6190	8/10/2007
G6191	6/1/2007
G652	9/23/2004
G653	10/11/2004
G654	9/10/2004
G657	9/28/2004
G657	9/28/2004
G6586	10/11/2004
G6586	10/11/2004
G6588	9/29/2004
G6588	9/29/2004
G6591	9/1/2004
G6976	4/9/2004
G762	2/12/2004
G765	2/20/2004
G766	4/1/2004
G767	3/11/2005
G7683	3/21/2005
G769	3/26/2004
G769	3/26/2004
G785	10/6/2003
G835	2/5/2004
H1701	3/24/2004
H1777	3/30/2004
H1782	3/18/2004
H184	10/22/2004
H262	1/3/2004
H321	12/2/2005
H322	11/10/2003
H385	10/27/2003
H595	12/1/2005
HARP34	11/23/2004
J0613	6/10/2005
J0614	3/10/2004
J0614	3/10/2004
J0614	3/10/2004
J0622	6/30/2005
J135	7/27/2004
J165	5/9/2007
J166	6/8/2007
J167	4/12/2007
J1683	4/21/2005

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
J1684	6/16/2005
J1690	New circuit
J1691	New circuit
J176	2/6/2004
J195	9/19/2005
J245	4/2/2005
J245	4/2/2005
J325	5/20/2006
J3673	10/20/2003
J3674	12/28/2004
J3676	9/24/2005
J3677	8/7/2007
J3678	12/22/2004
J3682	11/25/2003
J3682	11/25/2003
J3685	1/29/2004
J3685	1/29/2004
J3685	1/29/2004
J3688	4/8/2005
J3691	5/20/2005
J3970	3/23/2006
J3972	8/2/2007
J4085	8/8/2006
J4971	5/5/2006
J4972	5/5/2006
J4972	5/5/2006
J505	6/24/2005
J505	6/24/2005
J506	8/13/2007
J5112	3/31/2006
J5113	4/12/2006
J5121	3/24/2006
J5141	5/2/2006
J5152	5/3/2006
J5163	4/28/2006
J5673	5/30/2007
J586	9/24/2003
J656	5/28/2004
J656	5/28/2004
J675	11/26/2003
J686	8/4/2006
J696	11/15/2006
J7473	11/23/2004
J7474	12/13/2004
J7474	12/13/2004
J7481	5/23/2007
J7482	2/19/2004
J7482	2/19/2004

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
J7483	10/10/2003
J7484	11/20/2003
J765	9/13/2004
J765	9/13/2004
J846	8/16/2005
J885	7/18/2005
J887	6/15/2007
J926	8/8/2005
K155	4/14/2006
K155	4/14/2006
K187	11/10/2004
K195	12/1/2004
K395	2/21/2005
K395	2/21/2005
K505	New circuit
K7082	2/1/2005
L4660	10/18/2005
L8832	12/3/2004
L8868	12/10/2004
R6387	6/3/2005
R6389	5/31/2005
R8703	4/8/2005
R8778	3/22/2005
R8872	10/5/2004
S165	9/15/2005
S355	10/14/2006
S375	2/22/2007
S475	11/3/2006
W0101	11/10/2006
W0105	11/3/2006
W0110	11/10/2006
W0119	11/15/2006
W0121	New circuit
W022	3/3/2004
W0318	4/7/2006
W037	3/9/2006
W039	3/20/2006
W1001	4/1/2004
W1002	3/30/2005
W109	5/28/2007
W111	4/18/2006
W125	6/8/2007
W1310	7/24/2007
W162	3/30/2005
W178	8/12/2004
W185	8/17/2007
W186	5/18/2007
W192	10/10/2006

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
W2002	4/18/2006
W2012	3/3/2005
W2012	3/3/2005
W2013	3/1/2005
W2015	1/28/2005
W2017	2/22/2005
W2018	2/11/2005
W2019	2/5/2005
W2020	2/22/2005
W2020	2/22/2005
W2022	2/11/2005
W2022	2/11/2005
W2025	3/22/2005
W2026	4/27/2005
W240	3/8/2004
W240	3/8/2004
W242	9/15/2006
W258	10/27/2006
W300	1/24/2005
W301	7/2/2004
W307	2/14/2005
W310	7/15/2005
W310	7/15/2005
W3117	7/15/2005
W3118	8/12/2005
W3123	7/22/2005
W317	3/4/2005
W318	3/4/2005
W322	2/25/2005
W322	2/25/2005
W323	2/23/2005
W337	3/7/2005
W341	12/18/2004
W341	12/18/2004
W348	3/3/2005
W3516	12/13/2006
W3521	12/18/2006
W3521	12/18/2006
W355	7/22/2005
W356	6/24/2005
W3603	2/22/2006
W3605	11/11/2005
W362	6/9/2004
W3624	1/20/2006
W3628	2/21/2006
W365	7/22/2005
W390	5/26/2006
W3906	6/4/2004

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
W3910	New circuit
W3914	7/6/2004
W392	New circuit
W392	New circuit
W419	1/20/2006
W423	3/3/2005
W424	3/30/2005
W430	3/26/2005
W431	3/29/2005
W432	3/8/2005
W442	3/22/2005
W4516X	11/8/2004
W4520	12/16/2004
W4520	12/16/2004
W4541	New circuit
W455Y	11/3/2004
W4564	4/1/2005
W4566	4/1/2005
W458Y	11/12/2004
W459	5/27/2005
W5202	11/29/2004
W5203	11/29/2004
W5209	10/21/2003
W5209	10/21/2003
W525	2/1/2005
W526	3/1/2005
W5512	4/10/2007
W556	5/3/2007
W557	4/23/2007
W560	12/15/2006
W5618	7/15/2006
W5710	2/4/2004
W572	3/19/2004
W601	10/10/2003
W602	10/20/2003
W607	11/24/2003
W6205	11/18/2006
W6211	10/20/2006
W6222	10/13/2006
W622Y	11/3/2006
W6310	3/15/2005
W6310	3/15/2005
W635	3/26/2004
W638	3/19/2004
W638	3/19/2004
W656X	9/30/2003
W656Y	9/15/2003
W657	10/15/2003

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
W6610Y	4/20/2007
W665X	2/23/2007
W668X	3/30/2007
W682	9/7/2003
W682	9/7/2003
W686	8/27/2003
W688	9/12/2003
W688	9/12/2003
W689	6/13/2007
W701	4/2/2004
W7013	4/16/2004
W7015	4/12/2004
W705	4/15/2004
W7215	4/1/2005
W7406Y	8/9/2004
W741	7/29/2004
W741	7/29/2004
W7410	8/10/2004
W7415	8/13/2004
W7415	8/13/2004
W7419	8/6/2004
W7421	7/19/2004
W744	7/28/2004
W744	7/28/2004
W749	7/16/2004
W7705	4/28/2006
W7705	4/28/2006
W7715	5/5/2006
W7936	New circuit
W7937	New circuit
W7937	New circuit
W9201	11/17/2006
W9502	10/1/2004
W9502	10/1/2004
W9507	10/1/2004
W9508	11/14/2003
W9512	9/21/2004
W9514	12/17/2004
W9514	12/17/2004
W9516	10/8/2004
W9516	10/8/2004
W9518	9/8/2004
W9518	9/8/2004
X11037	1/31/2005
X11043	2/8/2005
X1434	12/4/2006
X1436	11/20/2006
X1458	11/11/2006

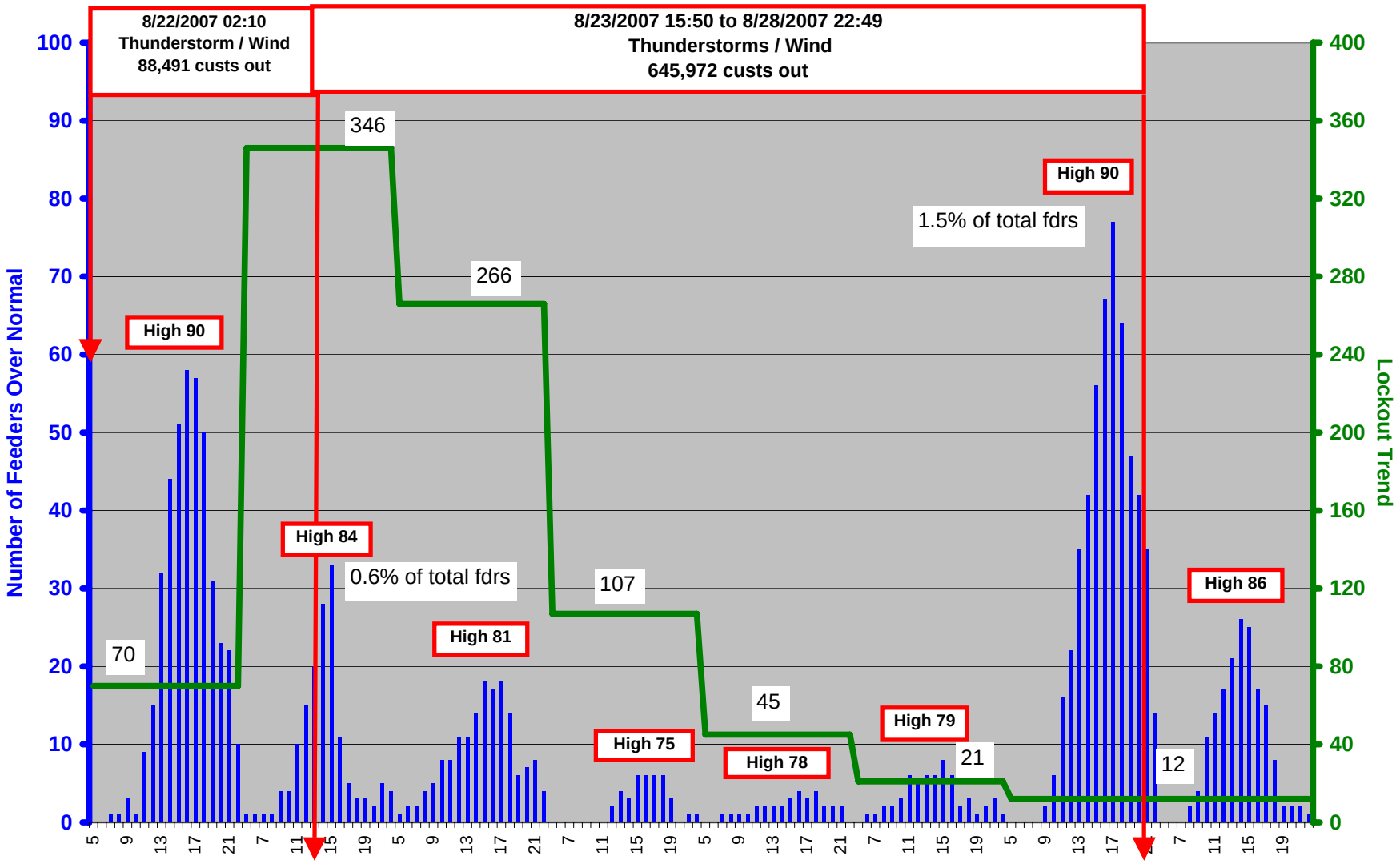
Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
X1462	11/30/2006
X1468	10/13/2006
X1477	11/11/2006
X1496	10/10/2006
X3148	11/1/2003
X3231	New circuit
X3232	5/26/2005
X3232	5/26/2005
X3234	New circuit
X3235	6/17/2005
X3235	6/17/2005
X3730	2/9/2007
X3730	2/9/2007
X3734	1/16/2007
X3740	1/26/2007
X3743	1/17/2007
X3744	1/18/2007
X3745	1/19/2007
X3747	1/15/2007
X3961	7/20/2007
X3978	7/2/2007
X4057	1/30/2004
X4861X	2/21/2005
X5338	12/5/2006
X5339	10/30/2006
X5342	11/29/2006
X5349	11/29/2006
X5350	11/28/2006
X5351	11/6/2006
X5356	11/15/2006
X5362	7/14/2006
X5368	8/11/2006
X5375	10/13/2006
X5379	11/16/2006
X5384	11/6/2006
X5387	10/23/2003
X5389	9/8/2006
X5465	7/29/2005
X7145	4/27/2006
X7150	7/5/2006
X7153	3/6/2006
X8442	2/18/2004
X8450	2/25/2004
X8454	2/13/2004
Y1955	12/5/2005
Y3039	New circuit
Y3084	New circuit
Y3871	8/31/2006

Circuits that experienced Tree Related Primary Outages during the August 23 - 28, 2007 Storm
12 / 34 kV Circuits)

CIRCUIT	LAST TRIM DATE
Y8260	1/13/2004
Z11865	3/3/2005
Z11869	2/11/2005
Z11872	2/7/2005
Z15045	10/10/2005
Z15045	10/10/2005
Z15049	10/14/2005
Z15060	10/5/2005
Z15077	8/30/2005
Z3349	7/13/2007
Z4140	3/5/2007
Z4143	1/26/2007
Z4148	3/16/2007
Z4332	4/26/2005
Z4341	4/1/2005
Z6334	4/6/2007
Z83432	5/27/2005
Z8933Y	10/28/2004
Z8934	1/16/2004
Z8940	2/20/2004
Z8947	8/16/2004
Z8947	8/16/2004

Hourly Count Of Feeders Over Normal Rating - Daily Count Of Outstanding Lockouts
8/22/07 to 8/29/07 (0500 to 2200 daily)



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CATEGORY	FTEs	
DSO South	65	
DSO West	73	
DSO Chicago	136	
DSO North	70	
Distribution Testing	49	
C&M Overhead	590	
C&M Underground	206	
T&S - Chicago	205	
T&S - Engineering	81	
T&S - North	70	
T&S - South	86	
T&S - West	61	
Relay & Protection Services	15	
TransmissionSvcs(Vito Martino)	40	
Native Contractors		
Linemen	239	
Foremen	16	
Supervisors	7	
Vegetation	800	
Foreign Crews	1100	
Supply	150	
Meter Reading	200	
SSG		
SSG Delivering Material	81	
SSG Emp (wire watch, guides, flagging	61	
Call Center		
BU employees	343	
MGMT	45	
Back Office	17	
EOC Teams	73	
OCC	150	
Field Supervision	105	
Foreign Crew Staging Centers	70	
Billing West	14	
New Business Back Office	6	
Revenue MGMT Support	31	
TOTAL	**5255**	