



Control Number: 29165



Item Number: 31

Addendum StartPage: 0



TXU Electric Delivery
500 N. Akard St., Ste. 14128
Dallas, TX 75201
Tel: 214-486-2692
Fax: 214-486-4831
travis.besier@txued.com

Travis Besier, P.E.
Project Manager
Regulatory Affairs

June 11, 2004

Mr. Brian Almon, Director of Engineering
Electric Division, Commission Staff
Public Utility Commission of Texas
1701 N. Congress
Austin, TX 78711

PUBLIC UTILITY & COMMISSION
FILING CLERK

2004 JUN 11 AM 9:34

RECEIVED

Re: Project No. 29165 – 2003 Service Quality Requests for Information

Dear Mr. Almon:

Attached please find the responses of TXU Electric Delivery Company to the nine requests for information as requested in your letter dated April 16, 2004. If you have any questions please call me at 214-486-2692.

Sincerely,

Travis Besier, P.E.
Regulatory Project Manager

cc: Ken Keller

Enclosure

31

REQUEST:

Provide complete records of all sustained interruptions, by interruption class, for the months of April and October, 2003. [Subst. R. 25.52(d)]

RESPONSE:

TXU Electric Delivery Company recorded 10,142 sustained interruptions during April 2003 and 8,013 sustained interruptions during October 2003. Data requested is provided on enclosed CD-ROM.

Definitions of abbreviated column headings:

Custint = number of customers interrupted

SUBCode = code for substation name

In the spreadsheet on the enclosed CD-ROM, a data value of "Not Used" means the interruption was not an interruption of utility facilities or delivery service. For instance, the interruption may have been on the customer side of the meter and therefore not an interruption of utility service.

REQUEST:

Provide the number of significant interruptions sustained during 2003 and the number lasting more than 24 hours. [Subst. R. 25.52(c)(5) and 25.52(e)(2)]

Number of significant interruptions during 2003 = 310

Number of significant interruptions greater than 24 hours = 3

RESPONSE:

Number of significant interruptions during 2003 = 310

Number of significant interruptions greater than 24 hours = 3

REQUEST:

Provide the number of forced interruptions attributable to each cause shown on the 2003 Service Quality Report

RESPONSE:

Cause	Number of Forced Interruptions	Percentage
Weather	11,245	12%
Vegetation	9,281	10%
Animals	10,829	12%
People	16,337	18%
Equipment Failure	20,474	22%
Other	19,016	21%
Unknown	4,265	5%

REQUEST:

Describe the methodology used to calculate the annual average SAIFI value for each interruption class shown on the 2003 Service Quality Report. Include a description of the data used for the calculations.

RESPONSE:

Each interruption event is recorded in the restoration database. The database is queried according to the rules listed below for the year in question, and the total number of customer interruptions is tabulated for each classification. The SAIFI value for each classification is calculated by dividing the total number of customer interruptions by the total number of customers on the system at the end of the period. The total SAIFI for the system can be calculated by adding the forced, scheduled, and major events values. A complete description of the restoration database elements is included in Attachment 1.

Following is a description of the data used for the calculations:

Forced: All sustained interruptions, excluding interruptions during major events, excluding scheduled interruptions, excluding interruptions requested by customer (code 702), and excluding interruptions internal to the customer's premise (beyond the meter).

Scheduled: All sustained interruptions, coded as cause code 701 – Transmission Clearance, or code 703 – Distribution Clearance.

Outside Causes: All sustained interruptions, not occurring during major events, coded as Level 12 (Substation), Level 13 (Transmission), or Level 14 (System).

Major Events: All sustained interruptions, occurring during events that qualify for insurance reserve (interruption events with restoration costs greater than \$500,000 O&M).

ATTACHMENT:

ATTACHMENT 1 - Restoration Database description and Cause Codes, 3 pages

Restoration Database Description

Each restoration record contains the following elements:

Region Code: Oncor Region in which the outage occurred.

Service Center Code: Oncor Service Center area in which the outage occurred.

Date Off: Date the outage began

Time Off: Time the outage began

Restoration Number: sequential number of the outage, by dispatch area and day

Restoration Stage: a sequential number used to account for restorations accomplished in stages (more than one group of customers restored at different times, but for the same outage event)

GLN: the X-Y coordinate of the interrupting device

Substation Code: Substation Identifier

Feeder: Feeder number

Device: type of interrupting device. Circuit Breaker, Recloser, Fuse, or Transformer.

OH/UG: whether the outage occurred on overhead or underground circuits

Weather: Single digit code indicating the weather status (1 – Normal Weather, 2 – Adverse Weather, 0 – Outage Not Weather Related)

Temperature: Single Digit Code giving the temperature range as follows: 1 – below 32 degrees F, 2 – 33 to 95 degrees F, 3 – Above 95 degrees F.

Condition a, Condition b, Condition c: 3 single digit codes giving the weather conditions from the following table:

Code	Condition
1	Fair
2	Cloudy
3	Rain
4	Wind
5	Lightning
6	Sleet/Ice
7	Sand

Level: 2 Digit Code indicating the level on the system where the outage originated, as follows:

Code	Level
02	Meter
04	Service
05	Secondary
06	Transformer
10	Primary
12	Substation
13	Transmission Line
14	System

Cause: 3 Digit Code indicating the cause of the outage (see Attachment A)

Time On: Time the outage was restored.

Number of Customers: Number of customers restored.

Days Off: Days of duration of the outage.

Hours Off: Hours of duration of the outage.

Minutes Off: Minutes of duration of the outage.

Customer Hours of Outage: Total duration of the outage times the number of customers restored. $[(\text{Days Off}) * 24 + \text{Hours Off} + (\text{Minutes Off})/60] * (\text{Number of Customers})$

Each Restoration Record also contains free form Text Comments, and a link to any work order(s) created as a result of the outage.

Cause Codes

Cause Code	Description	PUCT Type
100	Undetermined	Forced/Outside
201	Cable Failure (UG)	Forced/Outside
202	Capacitor	Forced/Outside
203	Cable Failure (sec & serv)	Forced/Outside
204	Conductor	Forced/Outside
208	Connector	Forced/Outside
209	Crossarm	Forced/Outside
211	Cutout	Forced/Outside
213	Elbow	Forced/Outside
221	Insulator	Forced/Outside
225	Jumper Burned Open	Forced/Outside
230	Lightning Arrestor	Forced/Outside
232	Metering Equipment	Forced/Outside
233	Network Protector	Forced/Outside
235	Pole	Forced/Outside
238	Conductor Off Insulator	Forced/Outside
242	Recloser	Forced/Outside
243	Regulator	Forced/Outside
251	Circuit Breaker	Forced/Outside
252	Switch, Gang Operated	Forced/Outside
254	Switch, Disconnect	Forced/Outside
260	Terminator	Forced/Outside
266	Transformer	Forced/Outside
270	Substation Relay	Forced/Outside
307	Dig-In	Forced/Outside
309	Foreign Object in Circuit	Forced/Outside
312	Tree Limb in Conductor (by contractor)	Forced/Outside
313	Vandalism	Forced/Outside
316	Vehicle Struck Facilities	Forced/Outside
319	Affects This Customer Only	Not Used
320	Multiple Customers Affected	Forced/Outside
321	Resolved by Dispatcher	Not Used
322	Customer Problem - Billable	Not Used
501	Error-Non ONCOR	Forced/Outside
502	Error - Distribution	Forced/Outside
505	Transmission Equipment - See TIRS	Forced/Outside
601	Wildlife	Forced/Outside
603	Fire	Forced/Outside
607	Ice	Forced/Outside
608	Lightning	Forced/Outside
609	Swinging Conductor	Forced/Outside
610	Tree Contact	Forced/Outside
611	Water / Flooding	Forced/Outside
612	Off ROW Tree Contact	Forced/Outside
701	Trans/Sub Group	Scheduled
702	Customer	Not Used
703	Distribution	Scheduled
704	Pre-PONSed Distribution Clearance	Scheduled
804	Overload	Forced/Outside
805	Interruptible/Underfrequency/Load Shedding	Forced/Outside

Forced/Outside – Depending on the level -- Outages of level 12 (Substation) or higher are both Forced and Outside. Outages of levels less than 12 are Forced only. Outages on Major Event days are Major Event regardless of level or cause.

REQUEST:

Describe the methodology used to calculate the annual average SAIDI value for each interruption class shown on the 2003 Service Quality Report. Include a description of the data used for the calculations.

RESPONSE:

Each interruption event is recorded in the restoration database. The database is queried according to the rules listed above for the year in question. For each interruption the duration (in minutes) is multiplied by the number of customers affected to obtain the number of customer-minutes. The total customer-minutes for all included interruptions are divided by the total number of customers on the system at the end of the period to obtain the SAIDI value for each classification. The total SAIDI for the system can be found by adding the forced, scheduled, and major events values. A complete description of the restoration database elements is included in a separate document.

Following is a description of the data used for the calculations:

Forced: All sustained interruptions, excluding interruptions during major events, excluding scheduled interruptions, excluding interruptions requested by customer (code 702), and excluding interruptions internal to the customer's premise (beyond the meter).

Scheduled: All sustained interruptions, coded as cause code 701 – Transmission Clearance, or code 703 – Distribution Clearance.

Outside Causes: All sustained interruptions, not occurring during major events, coded as Level 12 (Substation), Level 13 (Transmission), or Level 14 (System).

Major Events: All sustained interruptions, occurring during events that qualify for insurance reserve (restoration costs greater than \$500,000 O&M).

REQUEST:

Describe the methodology used to calculate the system-wide SAIFI standard for 2003, and include a description of the data used for the calculation. Provide the standard for 2003 and provide the calculation showing how this standard was determined [Subst. R. §25.52(f)(1)]

RESPONSE:

Pursuant to Subst. Rule §25.52(f)(1), the system-wide SAIFI standard for 2003 is a simple average of the SAIFI for years 1998, 1999, and 2000. A description of the data is available in the response to Request No. 4.

TXU Electric Delivery SAIFI values for forced interruptions as reported to the PUC for the years 1998, 1999 and 2000 are:

Year	Value
1998	1.18
1999	1.07
2000	1.20

The system-wide SAIFI standard for 2003 is the average of the system SAIFI for the years 1998, 1999, and 2000:

$$(1.18+1.07+1.20)/3 = 1.15 \text{ interruptions per year}$$

REQUEST:

Describe the methodology used to calculate the system-wide SAIDI standard for 2003, and include a description of the data used for the calculation. Provide the standard for 2003 and provide the calculation showing how this standard was determined [Subst. R. §25.52(f)(1)]

RESPONSE:

Pursuant to Subst. Rule §25.52(f)(1), the system-wide SAIDI standard for 2003 is a simple average of the SAIDI for years 1998, 1999, and 2000. A description of the data is available in the response to Request No. 4.

TXU Electric Delivery SAIDI values for forced interruptions as reported to the PUC for the years 1998, 1999 and 2000:

Year	Value
1998	112.07
1999	85.16
2000	92.92

The system-wide SAIDI standard for 2003 is the average of the system SAIDI for the years 1998, 1999, 2000:

$$(112.07+85.16+92.92)/3 = 96.72 \text{ minutes per year}$$

REQUEST:

Identify and list feeders on the 2003 Service Quality Report that did not meet either the SAIDI or SAIFI requirements of Subst. R. §25.52(f)(2)(A). Explain why each feeder did not meet the requirements and what action(s) have been or will be taken to achieve compliance for the feeder (i.e., to prevent the feeder repeating for a third year).

RESPONSE:

An information sheet for each feeder is included in the enclosed CD-ROM. Categories of forced interruptions by year are listed. These interruptions in annual aggregate caused the feeder to not meet either the SAIDI or SAIFI requirements of Subst. R §25.52(f)(2)(A). Feeder specific actions taken and actions to be taken in the future to achieve compliance are described on the information sheet for each feeder.

REQUEST:

Identify and list feeders on the 2003 Service Quality Report that did not meet either the SAIDI or SAIFI requirements of Subst. R. §25.52(f)(2)(B). Explain why each feeder did not meet the requirements and what actions(s) have been or will be taken to achieve compliance for the feeder. Describe the methodology used to calculate the SAIDI and SAIFI system averages of all feeders for purposes of identifying the listed feeders, and provide the calculations.

RESPONSE:

An information sheet for each feeder is included in the enclosed CD-ROM. Categories of forced interruptions by year are listed. These interruptions in annual aggregate caused the feeder to not meet either the 'SAIDI or SAIFI' requirements of Subst. R §25.52(f)(2)(B). Feeder specific actions taken and actions to be taken in the future to achieve compliance are described on the information sheet for each feeder and 2002 – 2004 cumulative O&M and Capital expenditures are noted.

SAIDI and SAIFI system averages of all feeders are calculated by including only feeders with more than ten (10) customers and only forced outages of five (5) minutes or greater. System wide SAIDI and SAIFI values reported for 2003 were 71.16 minutes and 0.94 respectively. Feeders not meeting the requirement of Subst. R §25.52(f)(2)(B) were above the following thresholds:

$$\text{SAIDI} = 4 \times 71.16 \text{ minutes} = 284.64 \text{ minutes}$$

$$\text{SAIFI} = 4 \times 0.94 = 3.37$$

CD_ROM AVAILABLE IN CENTRAL RECORDS