

# ELECTRIC SERVICE RELIABILITY IN PENNSYLVANIA

2005

PENNSYLVANIA PUBLIC UTILITY COMMISSION



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*Disclaimer: Any comments or conclusions contained in this report do not necessarily reflect the views or opinions of the Commission or individual commissioners.*

## **EXECUTIVE SUMMARY**

The Electricity Generation Customer Choice and Competition Act mandates that the Pennsylvania Public Utility Commission (Commission) ensure that levels of reliability that existed prior to the restructuring of the electric utility industry continue in the new competitive markets. Act of December 3, 1996, P.L. 802, No. 138, 66 Pa.C.S. Sec. 2801 et. seq.

In response to this mandate, the Commission adopted reporting requirements designed to ensure the continuing safety, adequacy and reliability of the generation, transmission and distribution of electricity in the Commonwealth.<sup>1</sup> The Commission also established reliability benchmarks and standards to measure the performance of each electric distribution company (EDC).<sup>2</sup>

Given the uncertainty of weather and other events that can affect reliability performance, the Commission has stated that EDCs should set goals to achieve benchmark performance in order to prepare for those times when unforeseen circumstances push the indices above the benchmark.<sup>3</sup> In recognition of these unforeseen circumstances, the Commission set the performance standard as the minimum level of EDC reliability performance. The standard is the level of performance beyond which the company must either justify its poor performance or provide information on the corrective measures it will take to improve performance. Performance that does not meet the standard for any reliability measure may be the threshold for triggering additional scrutiny and potential compliance enforcement actions.

In 2005, two of the 11 EDCs failed to meet their rolling 12-month performance standards for the average duration of service outages per affected customer, while six EDCs performed better than the benchmark. Four EDCs failed to meet their rolling 12-month performance standards for the average frequency of service outages per customer, while five EDCs performed better than the benchmark. Five EDCs petitioned the Commission to amend their performance benchmarks and standards. The Commission adjusted benchmarks and standards for four of these EDCs.<sup>4</sup> As of the release of this document, the Commission has not yet issued a final decision on the remaining petition.<sup>5</sup>

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<sup>1</sup> Docket No. L-00970120; 52 Pa. Code §§ 57.191-57.197.

<sup>2</sup> Docket No. M-00991220.

<sup>3</sup> Docket No. M-00991220, page 25.

<sup>4</sup> Docket No. M-00991220F0003 and P-00042115.

<sup>5</sup> Docket No. M-00991220F0002.

In addition to monitoring the reliability performance of the EDCs, the Commission has initiated a rulemaking proceeding to determine the type and scope of inspection and maintenance standards that would be appropriate for electric transmission and distribution systems.<sup>6</sup>

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<sup>6</sup> Docket No. L-00040167.

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## SECTION 1 – INTRODUCTION

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### *Purpose*

This report discusses the reliability performance of electric distribution companies (“EDCs”) operating within the Commonwealth during the calendar year 2005. Although the reliability of the bulk transmission system<sup>7</sup> is integral to the overall reliability of electric service, this report focuses on the reliability of the electric distribution system.

The information contained in this report was obtained from the annual reliability reports submitted by the EDCs pursuant to the Commission’s regulations.<sup>8</sup> These annual reports provide an assessment of electric service reliability for each EDC’s service territory.

### *Background*

The Electricity Generation Customer Choice and Competition Act<sup>9</sup> (Act) became effective January 1, 1997. The Act amended Title 66 of the Pennsylvania Consolidated Statutes (“Code”) by adding Chapter 28 to establish standards and procedures to create direct access by retail customers to the competitive market for the generation of electricity, while maintaining the safety and reliability of the electric distribution system. Specifically, the Commission was given a legislative mandate to ensure that levels of reliability that existed prior to the restructuring of the electric utility industry would continue in the new competitive markets.<sup>10</sup>

In response to this legislative mandate, the Commission adopted a Final Rulemaking Order on April 23, 1998, setting forth various reporting requirements designed to ensure the continued safety, adequacy and reliability of the generation, transmission and distribution of electricity in the Commonwealth.<sup>11</sup> The Final Rulemaking Order also suggested that the Commission could reevaluate its monitoring efforts at a later time as deemed appropriate.

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<sup>7</sup> The high voltage transmission system, nominally >100 kV, is regulated by the Federal Energy Regulatory Commission. The electric distribution system is under the purview of the Pennsylvania Public Utility Commission.

<sup>8</sup> 52 Pa. Code § 57.195.

<sup>9</sup> Dec. 3, P.L. 802, No. 138 § 4.

<sup>10</sup> 66 Pa.C.S. §§ 2802(12), 2804(1) and 2807(d).

<sup>11</sup> Docket No. L-00970120; 52 Pa. Code §§ 57.191-57.197.

Subsequently, on December 16, 1999, the Commission entered a Final Order establishing reliability benchmarks and standards for the EDCs.<sup>12</sup> The purpose of these reliability indices is to measure the performance of EDCs' transmission and distribution systems in terms of the frequency and duration of unplanned electric service outages to ensure that the levels of reliability existing prior to retail competition do not deteriorate.

On May 7, 2004, the Commission adopted amendments to its existing regulations regarding electric reliability standards, which became effective on September 18, 2004.<sup>13</sup> In conjunction with the adoption of the amended regulations, the Commission adopted an Order amending its benchmarks and standards.

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<sup>12</sup> Docket No. M-00991220.

<sup>13</sup> Docket No. L-00030161; 34 Pa.B. 5135.

## SECTION 2 – RELIABILITY PERFORMANCE MEASURES

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### *Reliability Performance Indices*

The benchmarks and standards established by the Commission are based on four reliability performance indices which have been adopted by the Institute of Electrical and Electronic Engineers, Inc. (IEEE). These indices include: (1) Customer Average Interruption Duration Index (CAIDI); (2) System Average Interruption Frequency Index (SAIFI); (3) System Average Interruption Duration Index (SAIDI); and (4) Momentary Average Interruption Frequency index (MAIFI).

CAIDI is the average duration of sustained interruptions<sup>14</sup> for those customers who experience interruptions during the analysis period. CAIDI represents the average time required to restore service to the average customer per sustained interruption. It is determined by dividing the sum of all sustained customer interruption durations, in minutes, by the total number of interrupted customers.

SAIFI measures the average frequency of sustained interruptions per customer occurring during the analysis period. It is calculated by dividing the total number of sustained customer interruptions by the total number of customers served.

SAIDI is the average duration of sustained customer interruptions per customer occurring during the analysis period. It is the average time customers were without power. It is determined by dividing the sum of all sustained customer interruption durations, in minutes, by the total number of customers served. SAIDI is also the product of CAIDI and SAIFI.

MAIFI measures the average frequency of momentary interruptions<sup>15</sup> per customer occurring during the analysis period. It is calculated by dividing the total number of momentary customer interruptions by the total number of customers served.

The actual values of these four reliability indices are submitted by the EDCs on both a quarterly (rolling 12-month average) and annual basis. Also

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<sup>14</sup> The loss of electric service by one or more customers for the period defined as a sustained customer interruption by IEEE as it may change from time to time – currently 5 minutes or greater. The term does not include “major events” or the authorized termination of service to an individual customer.

<sup>15</sup> The loss of electric service by one or more customers for the period defined as a momentary customer interruption by the IEEE as it may change from time to time – currently less than 5 minutes. The term does not include “major events” or the authorized termination of service to an individual customer.

included is the data used in calculating the indices, namely the average number of customers served, the number of sustained customer interruption minutes and the number of customers affected by service interruptions.<sup>16</sup>

It is noted that some EDCs do not currently have the necessary equipment to collect data relating to momentary service interruptions (MAIFI). However, the Commission desires to assess, where possible, the affect of frequent momentary interruptions on EDCs' customers. Thus, the provision of this data is required, if available.

In addition to the outage data mentioned above, the Commission's regulations require EDCs to report a breakdown and analysis of outage causes, such as equipment failure, animal contact and contact with trees. This analysis is helpful in identifying the primary causes of service interruptions and determining which causes, if any, can be prevented in the future through proposed solutions.

The revised regulations require EDCs to report reliability performance on a system-wide basis, rather than on an operating area basis, and provide an analysis of the worst performing five percent of circuits and major remedial efforts to improve those circuits.

## ***Major Events***

In order to analyze and set measurable goals for electric service reliability performance, outage data is separated into normal and abnormal periods so that only normal event periods are used for calculating reliability indices. The term "major event" is used to identify an abnormal event, such as a major storm, and is defined as either of the following:

An interruption of electric service resulting from conditions beyond the control of the EDC which affects at least 10% of the customers in the EDC's service territory during the course of the event for a duration of five minutes or greater.

An unscheduled interruption of electric service resulting from an action taken by an EDC to maintain the adequacy and security of the electrical system.

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<sup>16</sup> For some EDCs, MAIFI statistics are unavailable due to insufficient field equipment necessary to provide meaningful data.

Outage data relating to major events are to be excluded from the calculation of reliability indices. In order to avoid the inappropriate exclusion of outage data, the Commission has implemented a process whereby an EDC must submit a formal request for exclusion of service interruptions for reporting purposes, accompanied by data which demonstrates that a service interruption qualifies as a major event.

For the calendar year 2005, 31 requests for exclusion of major outage data relating to major events were filed by the EDCs. Of these requests, 25 were approved and six were denied. Three decisions were appealed; one appeal was granted. A major event exclusion request may be denied for a variety of reasons, including such things as the event not meeting the 10% of customers interrupted threshold or equipment failure without supporting maintenance records.

## ***Reliability Performance Benchmarks and Standards***

As currently established, the *performance benchmark* represents the statistical average of the EDC's annual, system-wide, reliability performance index values for the five-year time period from 1994-1998. The benchmark serves as an objective level of performance that each EDC should strive to achieve and maintain, and is a reference point for comparison of future reliability performance.

The current *performance standard* is a numerical value that represents the minimal performance allowed for each reliability index for a given EDC. Performance standards are based on each EDC's historical performance benchmarks. Both long-term (rolling three-year) and short-term (rolling 12-month) performance standards have been established for each EDC. The performance standard is the minimum level of EDC reliability performance permitted by the Commission and is a level of performance beyond which the company must either justify its poor performance or provide information on corrective measures it will take to improve performance. Performance that does not meet the standard for any reliability measure is the threshold for triggering additional scrutiny and potential compliance enforcement actions.

The rolling 12-month standard is 120% of the benchmark for the major EDCs and 135% for the small EDCs.<sup>17</sup> A greater degree of short-term latitude recognizes that small EDCs have fewer customers and fewer circuits than large EDCs, potentially allowing a single event to have a more significant impact on

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<sup>17</sup> Large EDCs currently include: Allegheny Power, Duquesne Light, Met-Ed, Penelec, Penn Power, PECO and PPL. Small EDCs include: UGI, Citizens', Pike County and Wellsboro.

the reliability performance of the small EDCs' distribution systems. The 12-month standard became effective on November 1, 2004.

The rolling three-year standard is 110% of the benchmark for all EDCs. This new performance standard was set at 10% above the historical benchmark to ensure that the standard is no higher than the worst annual performance experienced during the years prior to restructuring. The three-year average performance will be measured against the standard at the end of each calendar year. The Commission will begin enforcement of the rolling three-year standard with the submission of the annual reports due on or before April 30, 2007. The first rolling three-year standard analysis will utilize 2004, 2005 and 2006 calendar year data.

If any electric distribution company's reliability performance does not meet Commission standards, the Commission may require a report discussing the reasons for not meeting the standard and the corrective measures the company is taking to improve performance.<sup>18</sup> In addition, Commission staff may initiate an investigation to determine whether an electric distribution company is providing reliable service.<sup>19</sup>

Benchmarks and standards for EDC reliability performance are listed in Appendix A.

Note: A lower number for any index indicates better reliability performance; i.e., a lower frequency of outages or shorter outage duration. A higher number indicates worse performance. For example, if an EDC has a CAIDI benchmark of 180 minutes, a rolling 12-month CAIDI standard of 216 minutes and an actual CAIDI for a particular year of 200 minutes, its performance is considered to be adequate. If CAIDI is 160 minutes, the performance is better than the historical average performance. A CAIDI of 240 minutes, on the other hand, indicates a failure to meet the performance standard.

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<sup>18</sup> 52 Pa. Code § 57.195(g).

<sup>19</sup> 52 Pa. Code § 57.197(a).

## SECTION 3 – STATISTICAL UTILITY PERFORMANCE DATA

### Statewide Summary

The 2005 reliability data submitted by the EDCs indicates that two EDCs failed to meet their rolling 12-month performance standards for CAIDI and four EDCs failed to meet their rolling 12-month SAIFI and SAIDI performance standards. Six EDCs' performances were better than their CAIDI benchmarks and five were better than their SAIFI benchmarks. The following table provides actual 2005 reliability performance for each EDC and the benchmarks and standards for each reliability index.

Customer Average Interruption Duration Index (CAIDI)				% Above (+) or Below (-) Standard	% Above (+) or Below (-) Benchmark
EDC	2005	Benchmark	Standard		
Allegheny Power	195	170	204	-4.4%	14.7%
Duquesne Light	98	108	130	-24.6%	-9.3%
Met-Ed (FE)	122	117	140	-12.9%	4.3%
Penelec (FE)	151	117	141	7.1%	29.1%
Penn Power (FE)	151	101	121	24.8%	49.5%
PECO	99	112	134	-26.1%	-11.6%
PPL	125	145	174	-28.2%	-13.8%
UGI	119	169	228	-47.8%	-29.6%
Citizens	116	105	141	-17.7%	10.5%
Pike County	109	178	240	-54.6%	-38.8%
Wellsboro	105	124	167	-37.1%	-15.3%
System Average Interruption Frequency Index (SAIFI)				% Above (+) or Below (-) Standard	% Above (+) or Below (-) Benchmark
EDC	2005	Benchmark	Standard		
Allegheny Power	1.15	1.05	1.26	-8.7%	9.5%
Duquesne Light	0.98	1.17	1.40	-30.0%	-16.2%
Met-Ed (FE)	1.70	1.15	1.38	23.2%	47.8%
Penelec (FE)	1.87	1.26	1.52	23.0%	48.4%
Penn Power (FE)	1.56	1.12	1.34	16.4%	39.3%
PECO	1.02	1.23	1.48	-31.1%	-17.1%
PPL	0.97	0.98	1.18	-18.1%	-1.4%
UGI	0.64	0.83	1.12	-42.9%	-22.9%
Citizens	0.10	0.20	0.27	-63.0%	-50.0%
Pike County	1.85	0.39	0.53	249.1%	374.4%
Wellsboro	1.37	1.23	1.66	-17.5%	11.4%
System Average Interruption Duration Index (SAIDI)				% Above (+) or Below (-) Standard	% Above (+) or Below (-) Benchmark
EDC	2005	Benchmark	Standard		
Allegheny Power	224	179	257	-12.8%	25.1%
Duquesne Light	97	126	182	-46.7%	-23.0%
Met-Ed (FE)	209	135	194	7.7%	54.8%
Penelec (FE)	284	148	213	33.3%	91.9%
Penn Power (FE)	236	113	162	45.7%	108.8%
PECO	100	138	198	-49.5%	-27.5%
PPL	121	142	205	-41.0%	-14.8%
UGI	76	140	256	-70.3%	-45.7%
Citizens	12	21	38	-68.4%	-42.9%
Pike County	202	69	127	59.1%	192.8%
Wellsboro	144	153	278	-48.2%	-5.9%

Note: GREEN = better than benchmark; RED = worse than standard; BLACK = between benchmark and standard.

## *Utility Specific Performance Data*

### **Allegheny Power**

On May 26, 2004, Allegheny Power filed a petition to amend its benchmarks, asserting that the recomputed benchmarks were unrealistic and artificially low.<sup>20</sup> On July 20, 2006, the Commission adopted an Order modifying the benchmarks and standards for Allegheny Power. Allegheny's CAIDI benchmark was decreased from 178 minutes to 170 minutes; the SAIFI benchmark was increased from 0.67 interruptions to 1.05 interruptions; and the SAIDI benchmark was increased from 119 minutes to 179 minutes.

Allegheny's overall reliability performance in 2005 was consistent with its performance in the calendar year 2004. Allegheny's 2005 SAIFI, CAIDI and SAIDI values were between the newly adjusted benchmarks and the standards.

The calculation of the 2005 reliability indices exclude outage data relating to one major event, which was approved by the Commission:

October 24 - 30, 2005: heavy, wet snowstorm; 69,676 customer interruptions excluded; 83,330,542 customer minutes excluded.

For the 2005 calendar year, Allegheny filed three outage reports pursuant to 52 Pa. Code § 67.1, including one for the major event discussed above.

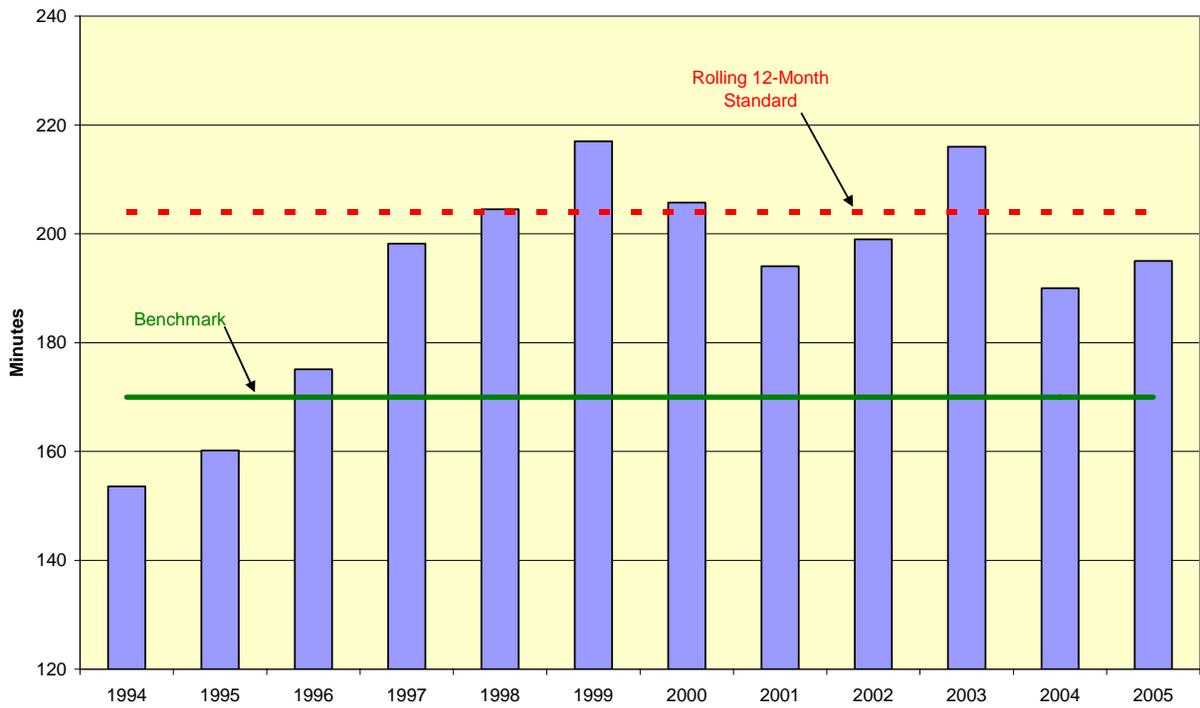
In 2005, Allegheny experienced 797,656 service interruptions with a total duration of 155.7 million minutes, which was about 4.6% higher than that which was reported last year.

The following graphs depict trends in the duration of service interruptions for the Allegheny system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.

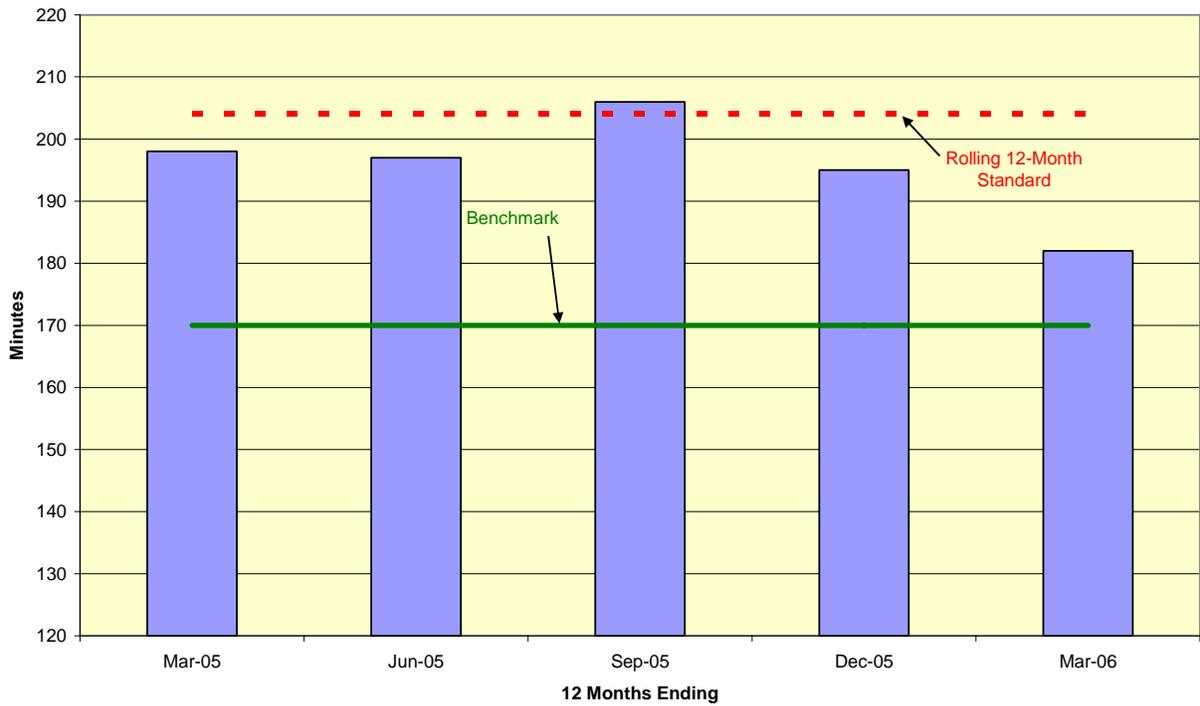
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<sup>20</sup> Docket No. M-00991220 F0003.

**Allegheny Power System  
Customer Average Interruption Duration Index (CAIDI)**

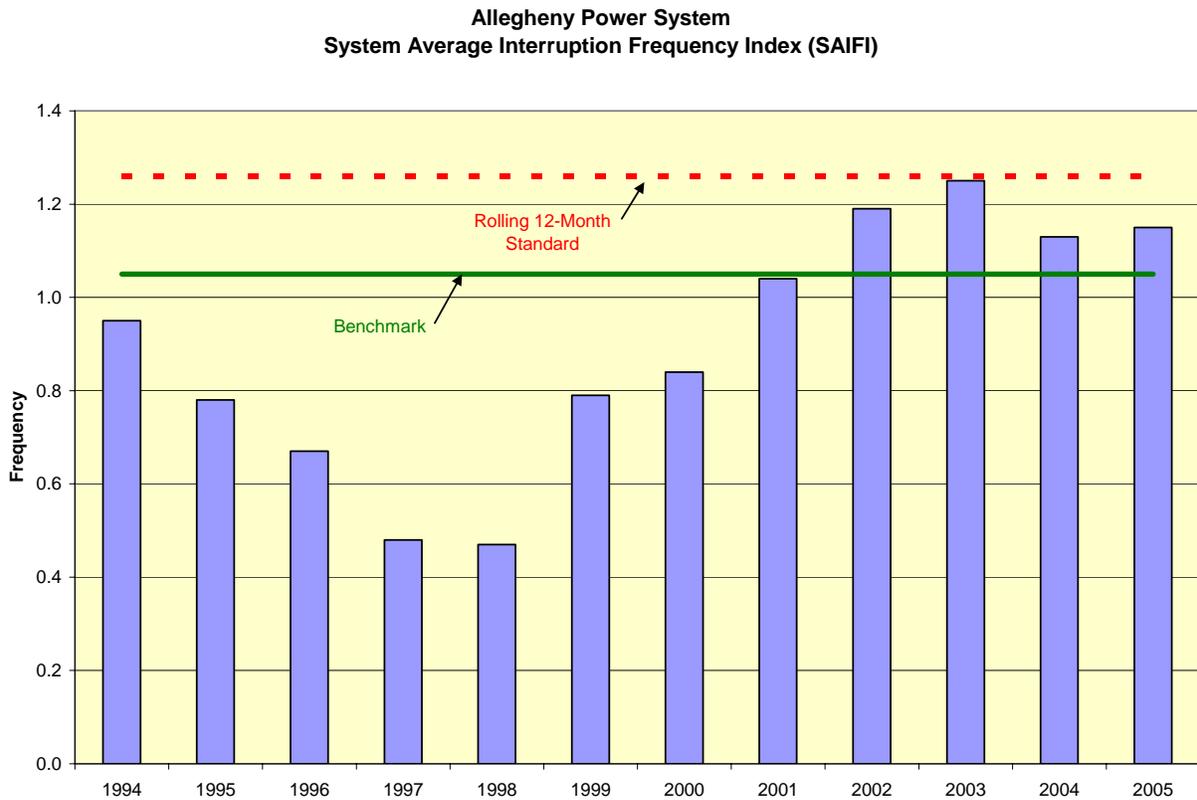


**Allegheny Power System  
Customer Average Interruption Duration Index (CAIDI)**

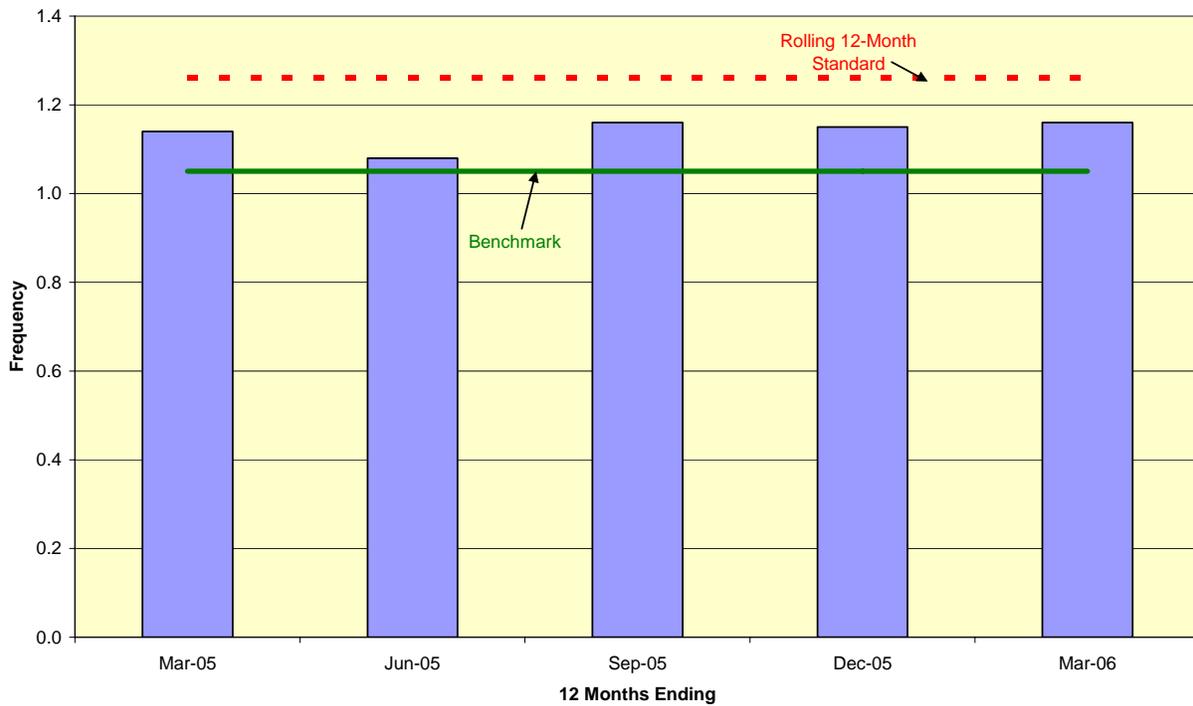


As seen here, CAIDI improved from the 12 months ended March 2005 to the 12 months ended March 2006. Average CAIDI values decreased from 198 minutes to 182 minutes, which was 10.8% better than the standard. Performance remained within an acceptable range throughout 2005.

The next two graphs depict trends in the frequency of service interruptions for the Allegheny system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards for SAIFI.

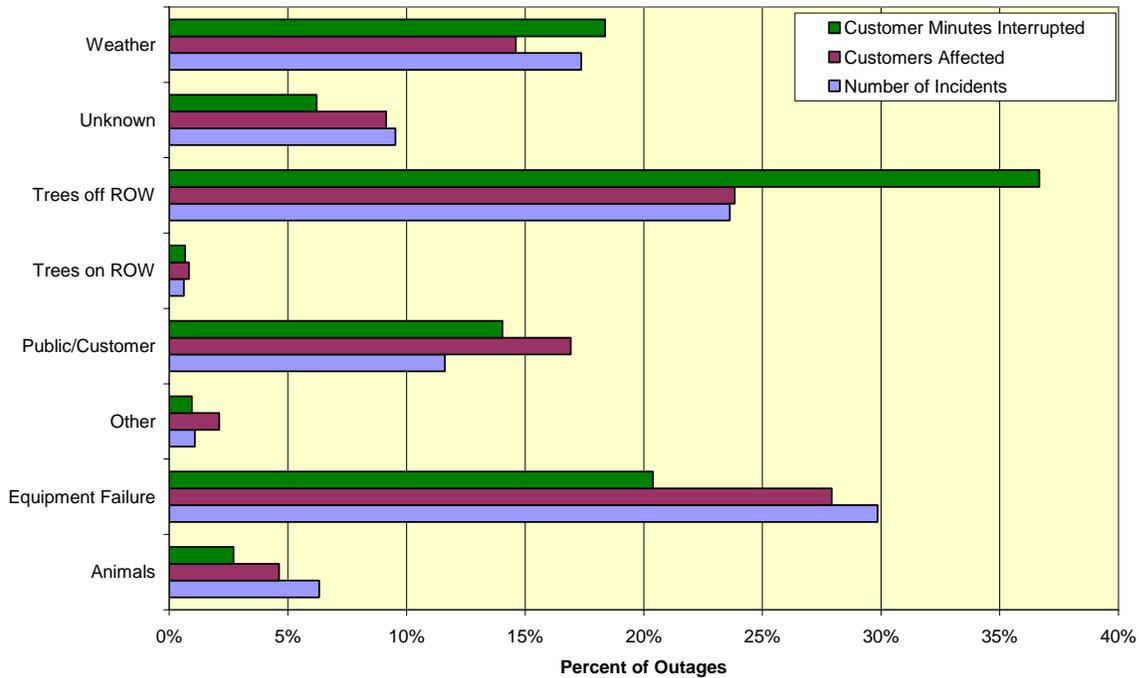


**Allegheny Power System  
System Average Interruption Frequency Index (SAIFI)**



The graph below shows the distribution of causes of service outages occurring during 2005 as a percentage of total outages. Equipment failure was responsible for 29.9% of the outages, 27.9% of customers affected and 20.4% of customer minutes interrupted. Trees off the right-of-way were the second leading cause of service interruptions, with 23.6% of the outages, 23.8% of customers affected and 36.7% of interruption minutes.

**Allegheny Power System  
2005 Outage Causes**



## Duquesne Light Company

Duquesne’s overall performance continues to be better than the reliability standard. In fact, Duquesne’s 2005 CAIDI of 98 minutes was 10 minutes better than the benchmark of 108 minutes. The 2005 SAIFI was an average of 0.98 outages per customer, compared to a benchmark of 1.17 outages.<sup>21</sup>

Duquesne states that its effective outage restoration process and significant distribution automation allows it to restore power quickly to large numbers of customers.

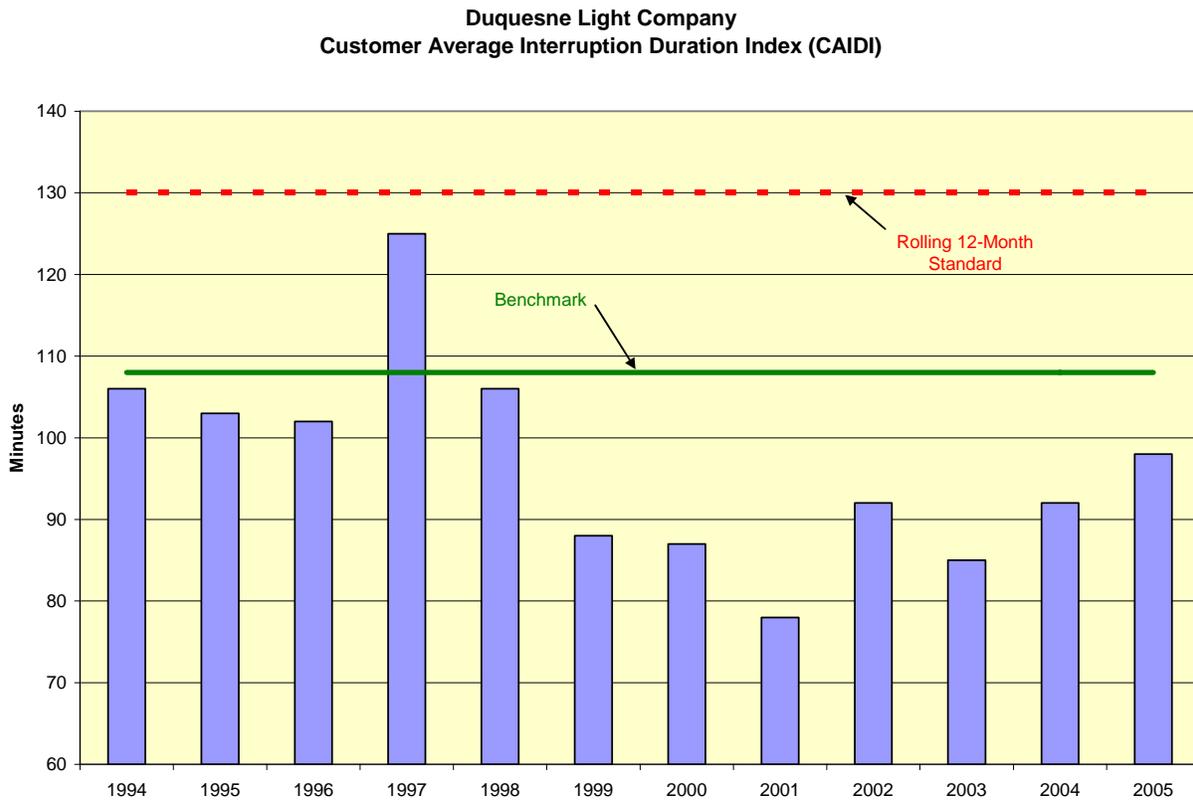
Duquesne reported no major events for 2005.

For the 2005 calendar year, Duquesne filed three outage reports pursuant to 52 Pa. Code § 67.1.

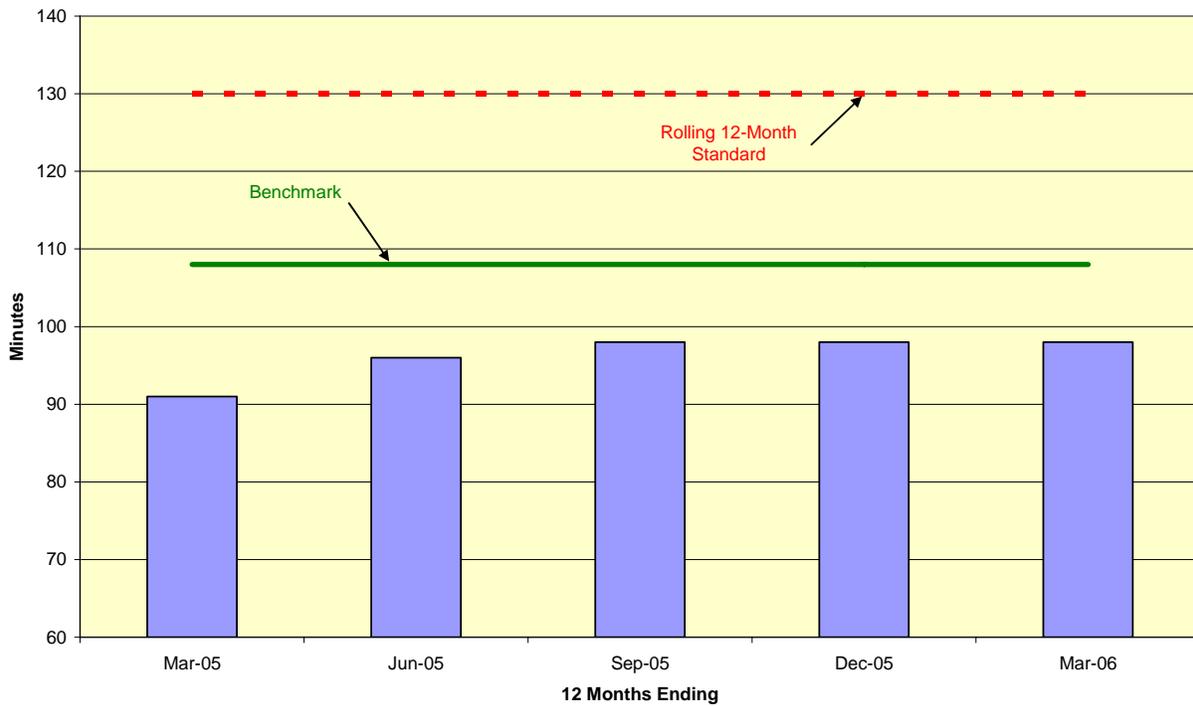
<sup>21</sup> Duquesne’s system does not provide an actual count of customers interrupted. The data available is in regard to interrupted load. The unit used is KVA, or kilovoltampere, which is the basic unit of apparent power.

In 2005, Duquesne experienced a total of 6.8 million kilovoltamperes (KVA) interrupted with a total duration of 664.3 million KVA-minutes, which was 9.1% higher than that which was reported last year, excluding major events.

The following graphs depict trends in the duration of service interruptions for the Duquesne system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.



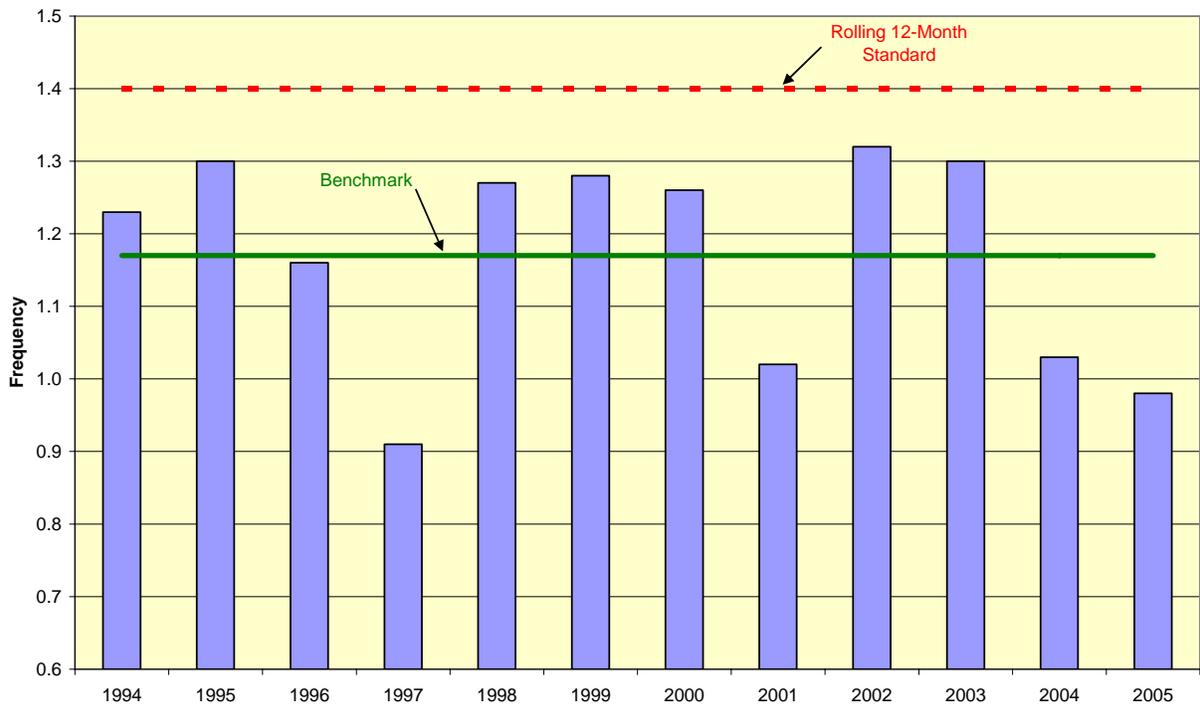
**Duquesne Light Company  
Customer Average Interruption Duration Index (CAIDI)**



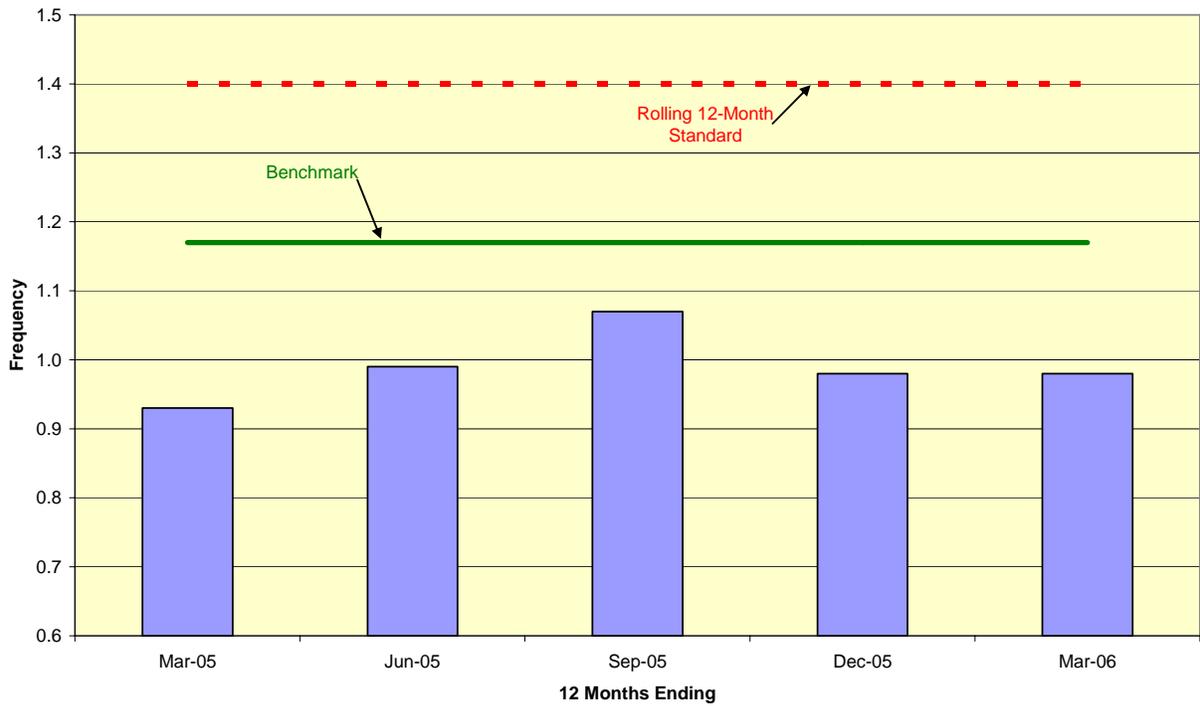
The next two graphs show trends in the frequency of service interruptions for the Duquesne service territory from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards for SAIFI.

As can be seen, Duquesne’s reliability performance falls well within the parameters of acceptability for both CAIDI and SAIFI. CAIDI has remained consistently below 100 minutes over the past several years. Interruption frequency dropped to 0.98 in 2005, the lowest since 1997.

**Duquesne Light Company  
System Average Interruption Frequency Index (SAIFI)**

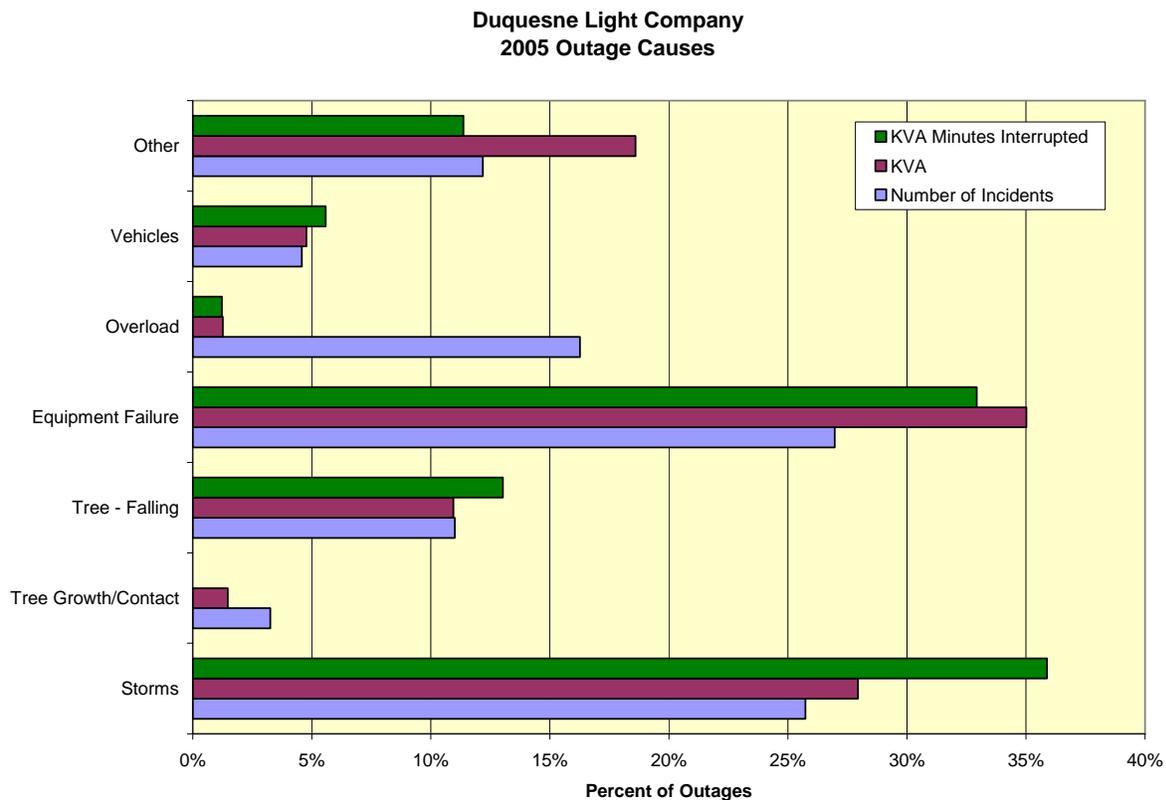


**Duquesne Light Company  
System Average Interruption Frequency Index (SAIFI)**



The graph below shows the distribution of causes of service outages occurring during 2005 as a percentage of total outages. Equipment failure was responsible for 27.0% of the outages, 35.0% of interrupted load and 32.9% of interruption minutes. Storms were identified as causing 25.7% of the outages, 27.9% of interrupted load and 35.9% of interruption minutes.

Duquesne states that scheduled preventative and predictive maintenance activities continue to reduce the potential for future service interruptions. Component failure analysis is utilized to identify equipment types to target for preventative maintenance and/or capital replacement. Isolated problem areas with multiple outages are identified by tracking component lockouts.



## Metropolitan Edison Company

Met-Ed's reliability performance summary was filed as a joint report submitted on behalf of the three Pennsylvania operating companies of FirstEnergy: Met-Ed, Penelec and Penn Power.

On May 26, 2004, FirstEnergy filed a Petition for the Amendment of Benchmarks.<sup>22</sup> On February 17, 2006, the Commission entered an Order modifying the benchmarks and standards for the three FirstEnergy companies. Met-Ed's CAIDI benchmark was decreased from 127 minutes to 117 minutes; the SAIFI benchmark was increased from 1.06 interruptions to 1.15 interruptions; and the SAIDI benchmark remained at 135 minutes.

Met-Ed's CAIDI for 2005 was 122 minutes, compared to 128 minutes in 2004, and five minutes greater than the benchmark. SAIFI, on the other hand, was 1.7 interruptions, compared to last year's 1.54 and 23.2% over the standard.

In 2005, Met-Ed's service area experienced one major event. The calculation of the reliability indices exclude outage data related to this event, which was approved by the Commission:

January 6 - 11, 2005: ice storm; 73,100 customers affected; 45,456,576 minutes excluded.

For the 2005 calendar year, Met Ed filed five outage reports pursuant to 52 Pa. Code § 67.1, including one for the major event discussed above.

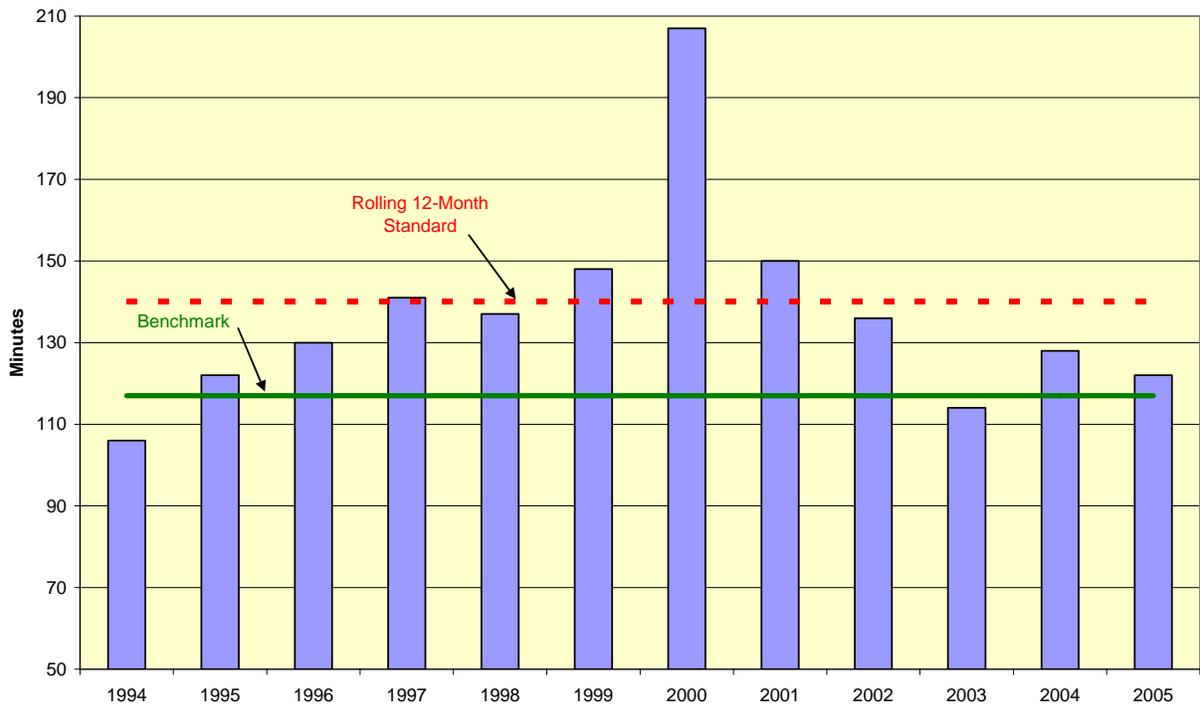
In 2005, Met-Ed experienced 897,931 customer interruptions with a total duration of 110 million customer minutes, or 12.7% higher than 2004.

The following graphs depict trends in the duration of service interruptions for the Met-Ed system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.

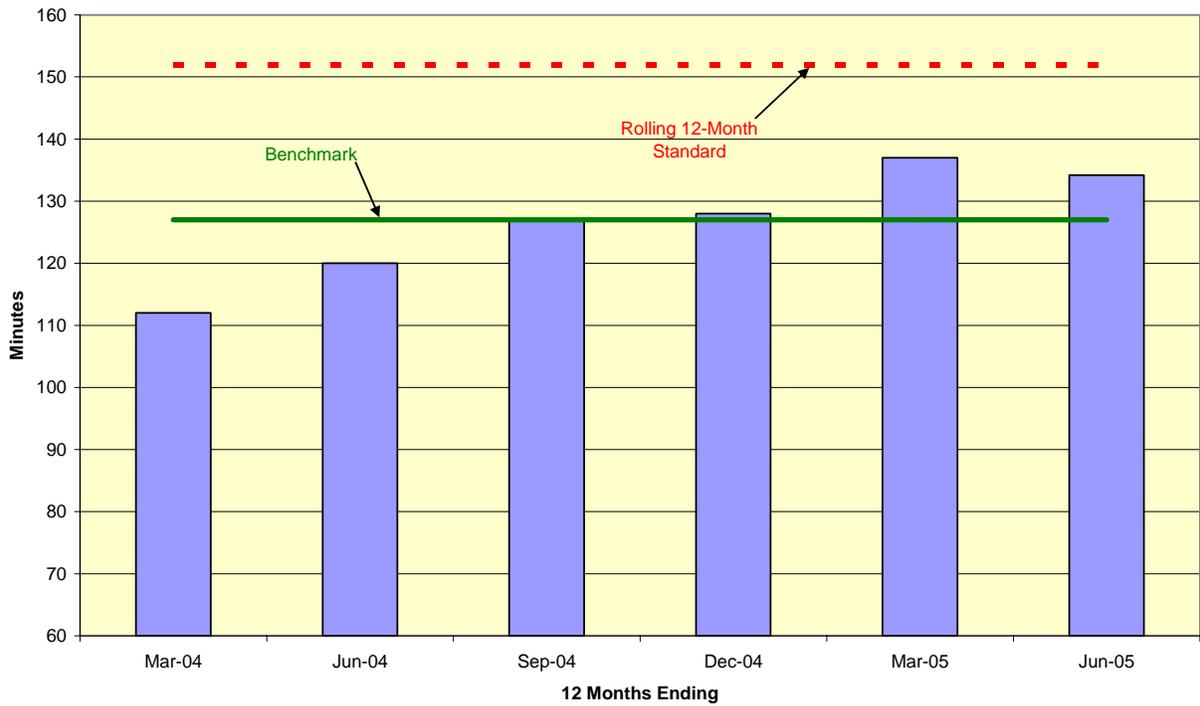
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<sup>22</sup> Docket No. P-00042115.

**Metropolitan Edison Company  
Customer Average Interruption Duration Index (CAIDI)**

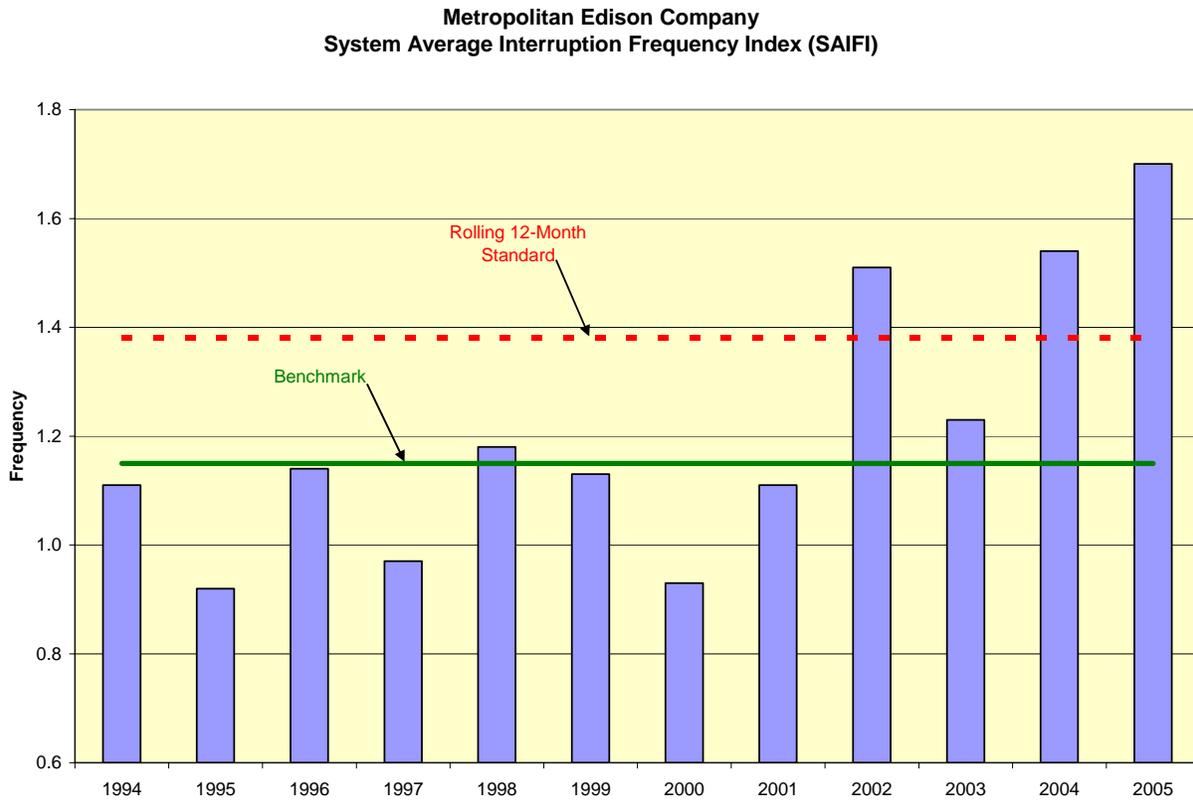


**Metropolitan Edison Company  
Customer Average Interruption Duration Index (CAIDI)**



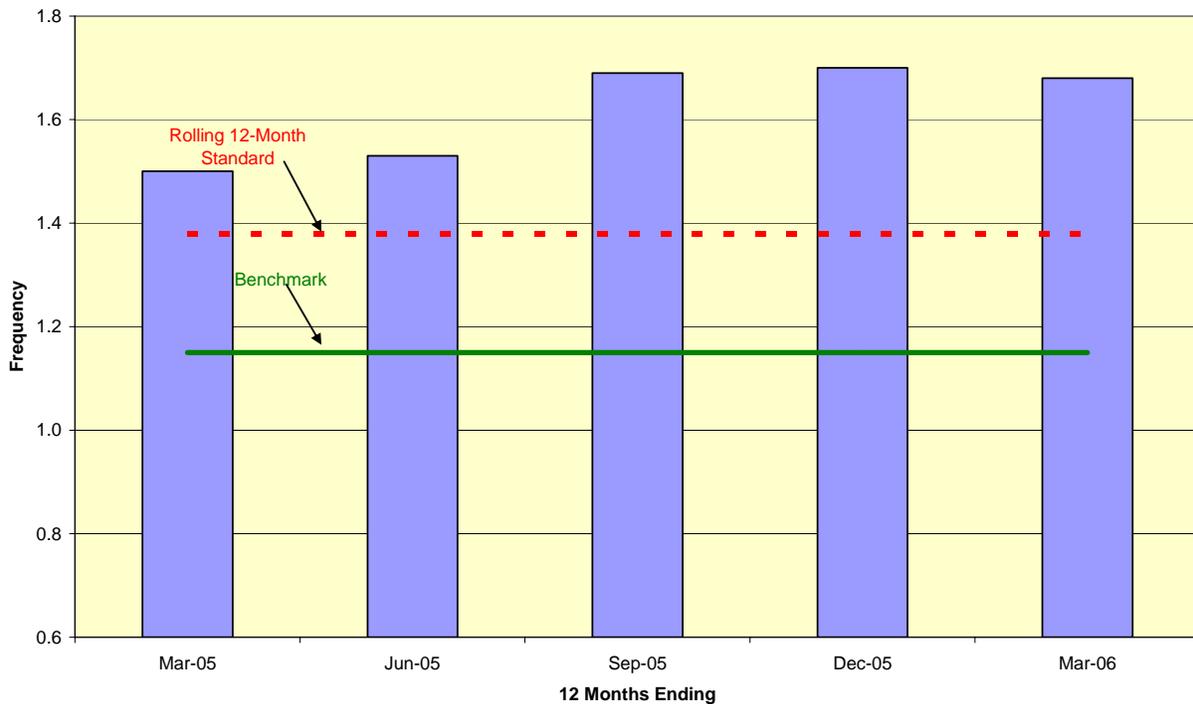
CAIDI has decreased from 137 minutes for the 12 months ending March 2005, to 120 minutes for the 12 months ending March 2006, or an improvement of 12.4%.

The next two graphs depict trends in the frequency of service interruptions from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.



The increase in last year's frequency of service outages is indicated by the continuing upward trend in the rolling 12-month averages for the four quarters of 2005. SAIFI rose from an unacceptable level of 1.5 for the 12 months ending March 2005 to 1.7 for the 12 months ended December 2005. For the 12 months ending March 2006, SAIFI was 1.68.

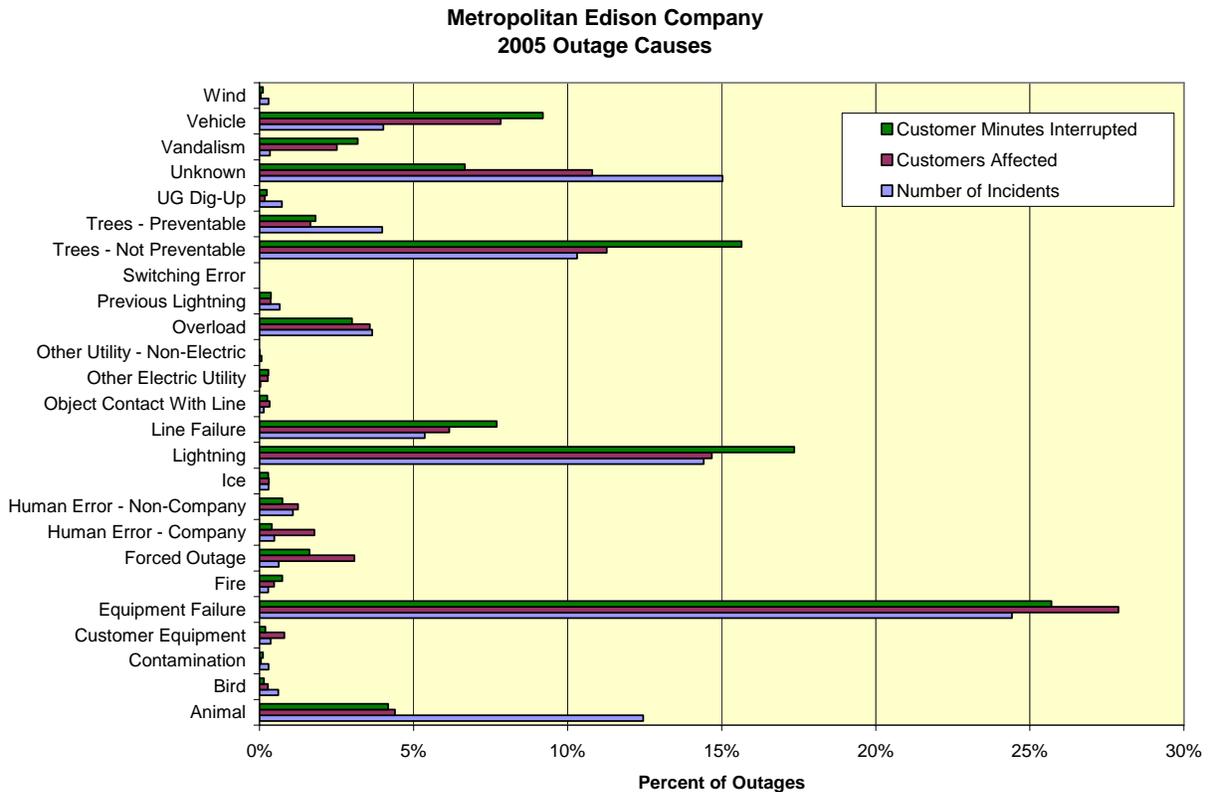
**Metropolitan Edison Company  
System Average Interruption Frequency Index (SAIFI)**



It should be noted that the Joint Petition for Settlement in the investigation of FirstEnergy’s reliability performance requires Met-Ed to achieve an established reliability benchmark for SAIDI by the end of 2007.<sup>23</sup> The settlement requires Met-Ed to achieve at least a 5% improvement over the 2003 achieved SAIDI for the 12 months ending December 31, 2007. In addition, the settlement requires Met-Ed achieve SAIDIs for the calendar years 2005 and 2006 that reflect values equal to or better than its achieved SAIDI for 2003. The resulting settlement SAIDI milestones are 140 for the calendar years 2005 and 2006 and 133 for the calendar year 2007. By letter dated June 22, 2006, Prosecutory Staff informed Met-Ed that it is in violation of the Settlement and requested that a specific remediation plan be implemented. Per the letter, Prosecutory Staff informed Met-Ed that if it does not adopt an acceptable remediation plan, Prosecutory Staff will request that the Commission impose penalties, including, but not limited to, fines for noncompliance with the Settlement.

<sup>23</sup> On January 16, 2004, the Commission instituted an investigation of FirstEnergy’s compliance with the Commission’s regulations and orders relating to reliable electric service, and seeking recommendations for reliability improvements. On November 4, 2004, the Commission approved a Joint Petition for Settlement which, among other things, sets forth goals for improving reliability performance and achieving milestone levels of reliability by the end of 2005, 2006 and 2007 for Met-Ed, Penelec and Penn Power. Docket No. I-00040102.

The graph below shows the distribution of causes of service outages occurring during 2005 as a percentage of total outages. Equipment failure was responsible for 24.4% of incidents, 27.9% of customers affected and 25.7% of interruption minutes. Lightning caused 14.4% of the incidents, 14.7% of customers affected and 17.4% of interruption minutes.



## Pennsylvania Electric Company

Penelec’s reliability performance summary was filed as a joint report submitted on behalf of the three Pennsylvania operating companies of FirstEnergy: Met-Ed, Penelec and Penn Power.

On May 26, 2004, FirstEnergy filed a Petition for the Amendment of Benchmarks.<sup>24</sup> On February 17, 2006, the Commission entered an Order modifying the benchmarks and standards for the three FirstEnergy companies. Penelec’s CAIDI benchmark was increased from 115 minutes to 117 minutes;

<sup>24</sup> Docket No. P-00042115.

the SAIFI benchmark was increased from 1.15 interruptions to 1.26 interruptions; and the SAIDI benchmark increased from 132 minutes to 148 minutes.

Penelec's overall reliability performance in 2005 was worse than last year's performance. CAIDI was 151 minutes, compared to 140 minutes in 2004, and 7.1% worse than the standard of 141 minutes. SAIFI was 1.87 service interruptions, compared to last year's 1.77 and a performance standard of 1.52.

In 2005, Penelec's service territory experienced two major events. The calculation of the reliability indices exclude outage data related to these events, which were approved by the Commission:

January 5 – 12, 2005; ice storm; 88,901 customers affected; 82,496,471 minutes excluded.

April 2 – 6, 2005; snow storm; 126,281 customers affected; 51,480,450 minutes excluded.

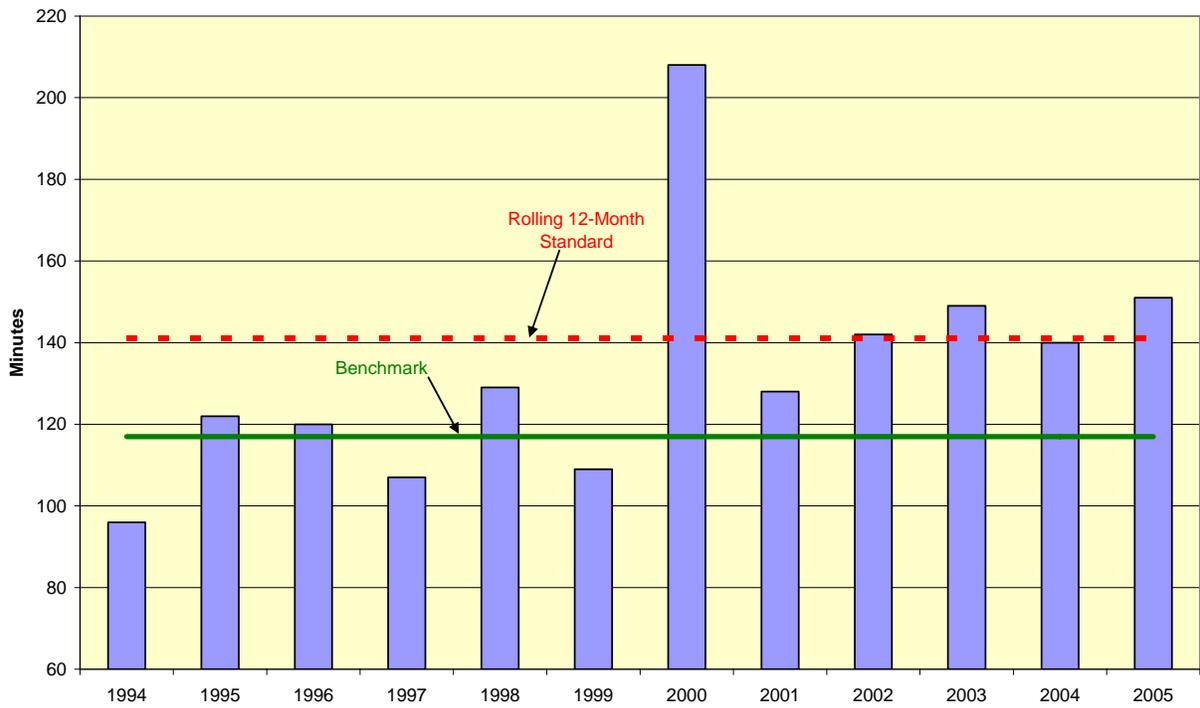
For the 2005 calendar year, Penelec filed 10 outage reports pursuant to 52 Pa. Code § 67.1, including two for the major events discussed above.

In 2005, Penelec experienced 1,100,830 customer interruptions with a total duration of 166.7 million customer minutes, or 15.6% higher than 2004.

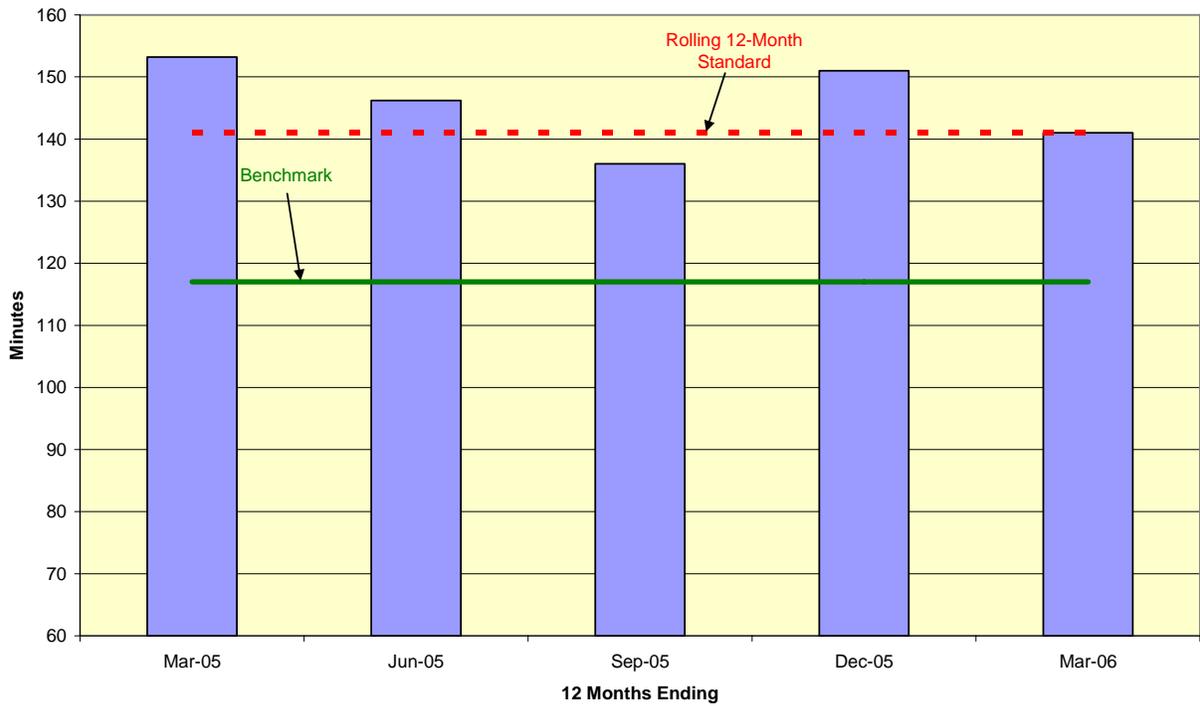
The following graphs depict trends in the duration of service interruptions for Penelec from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.

The annual CAIDI values have exceeded the performance standard for three of the past four years.

**Pennsylvania Electric Company  
Customer Average Interruption Duration Index (CAIDI)**



**Pennsylvania Electric Company  
Customer Average Interruption Duration Index (CAIDI)**

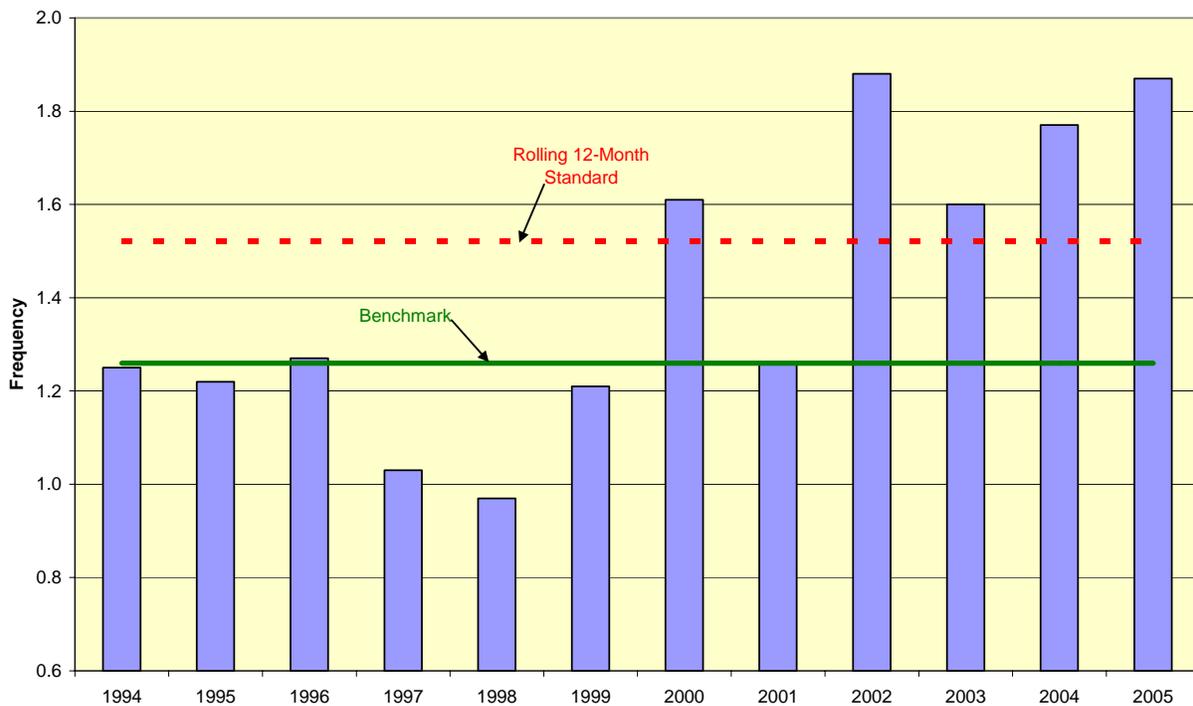


The rolling 12-month averages for the first, second and fourth quarters of 2005 were worse than the standard. For the 12 months ending March 2006, Penelec met the CAIDI standard.

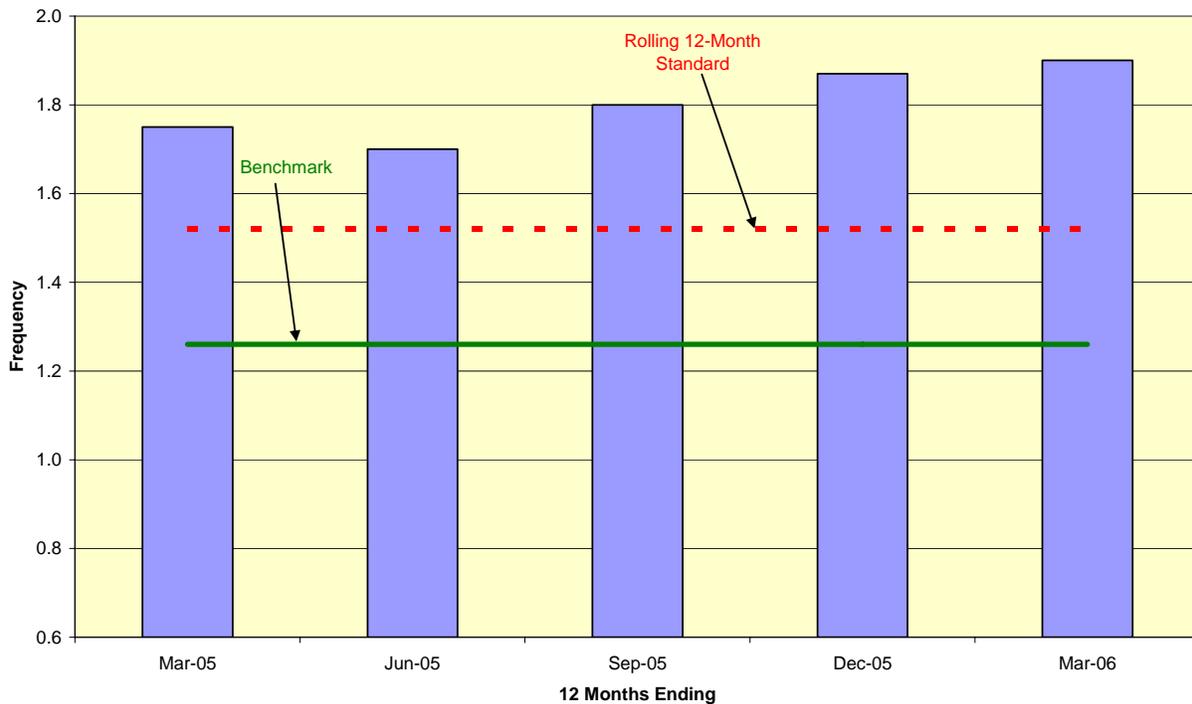
The next two graphs show trends in the frequency of service interruptions from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.

Annual SAIFI values have exceeded the performance standard for the past four years. The rolling 12-month averages for each of the four quarters of 2005 and the first quarter of 2006 consistently exceeded the standard by a sizable margin and are trending toward worse performance. The SAIFI value for the 12 months ending March 2006 was 23% worse than the standard.

**Pennsylvania Electric Company  
System Average Interruption Frequency Index (SAIFI)**



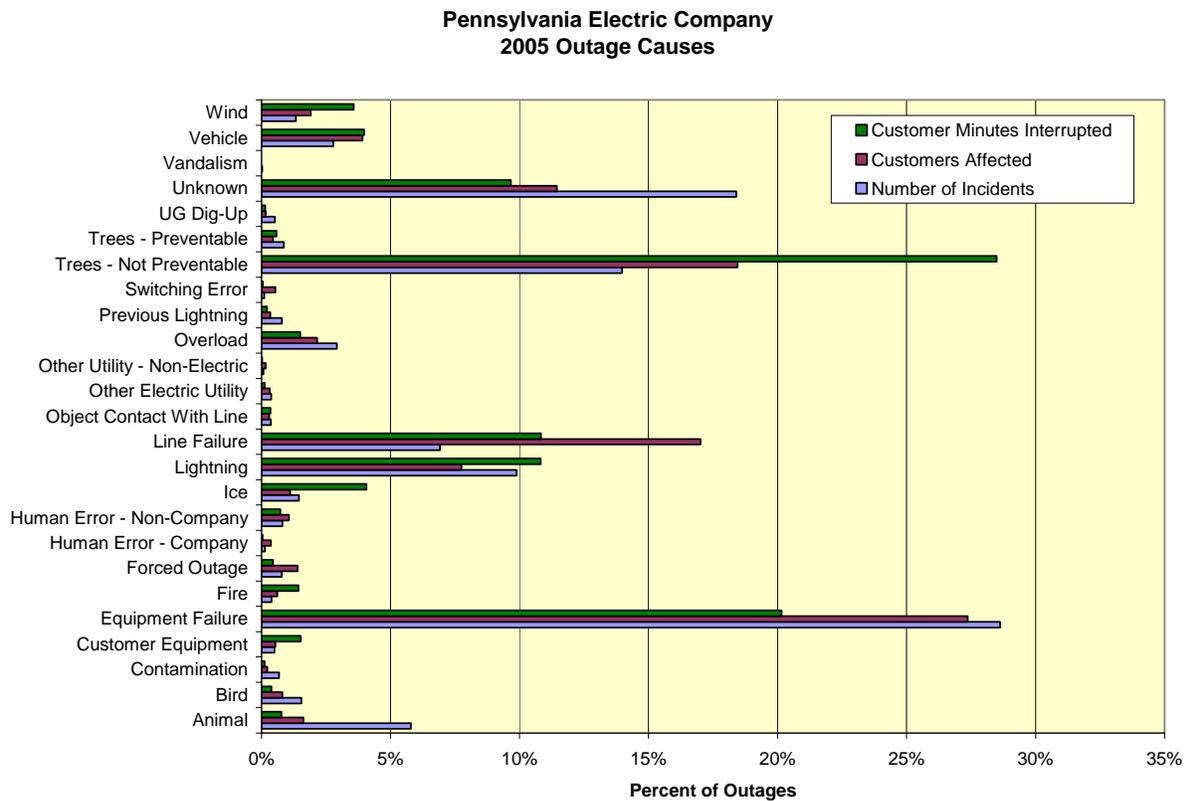
**Pennsylvania Electric Company  
System Average Interruption Frequency Index (SAIFI)**



It should be noted that the Joint Petition for Settlement in the investigation of FirstEnergy’s reliability performance requires Penelec to achieve an established reliability benchmark for SAIDI by the end of 2007. The settlement requires Penelec to achieve at least a 25% improvement over the 2003 SAIDI for the 12 months ending December 31, 2007. In addition, the settlement requires Penelec to achieve SAIDIs for the calendar years of 2005 and 2006 that reflect values equal to or better than its achieved SAIDI for 2003. The resulting settlement SAIDI milestones are 239 for the calendar years 2005 and 2006 and 179 for the calendar year 2007. By letter dated June 22, 2006, Prosecutory Staff informed Penelec that it is in violation of the Settlement and requested that a specific remediation plan be implemented. Per the letter, Prosecutory Staff informed Penelec that if it does not adopt an acceptable remediation plan, Prosecutory Staff will request that the Commission impose penalties, including, but not limited to, fines for noncompliance with the Settlement.

The graph below shows the distribution of causes of service outages occurring during 2005 as a percentage of total outages. Equipment failure was responsible for 28.6% of incidents, 27.4% of customers affected and 20.2% of interruption minutes. Non-preventable tree-related incidents accounted for

14.0% of total incidents, 18.5% of customers affected and 28.5% of interruption minutes.



### Pennsylvania Power Company

Penn Power’s reliability performance summary was filed as a joint report submitted on behalf of the three Pennsylvania operating companies of FirstEnergy: Met-Ed, Penelec and Penn Power.

On May 26, 2004, FirstEnergy filed a Petition for the Amendment of Benchmarks.<sup>25</sup> On February 17, 2006, the Commission entered an Order modifying the benchmarks and standards for the three FirstEnergy companies. Penn Power’s CAIDI benchmark was increased from 92 minutes to 101 minutes; the SAIFI benchmark was increased from 1.02 interruptions to 1.12 interruptions; and the SAIDI benchmark was increased from 94 minutes to 113 minutes.

<sup>25</sup> Docket No. P-00042115.

Penn Power's overall reliability performance in 2005 was worse than last year's performance; performance for all three indices remained unacceptable. CAIDI was 151 minutes, compared to 120 minutes in 2004, and 30 minutes greater than the performance standard. SAIFI was 1.56 interruptions, compared to last year's 1.43 and 16.4% over the standard.

In 2005, Penn Power's customers experienced one major event. The outage data relating to this event has been excluded from the calculation of the reliability indices.

June 28 - 30, 2005; heavy rain, high winds and lightning; 18,062 customers affected; 1,804,646 minutes excluded.

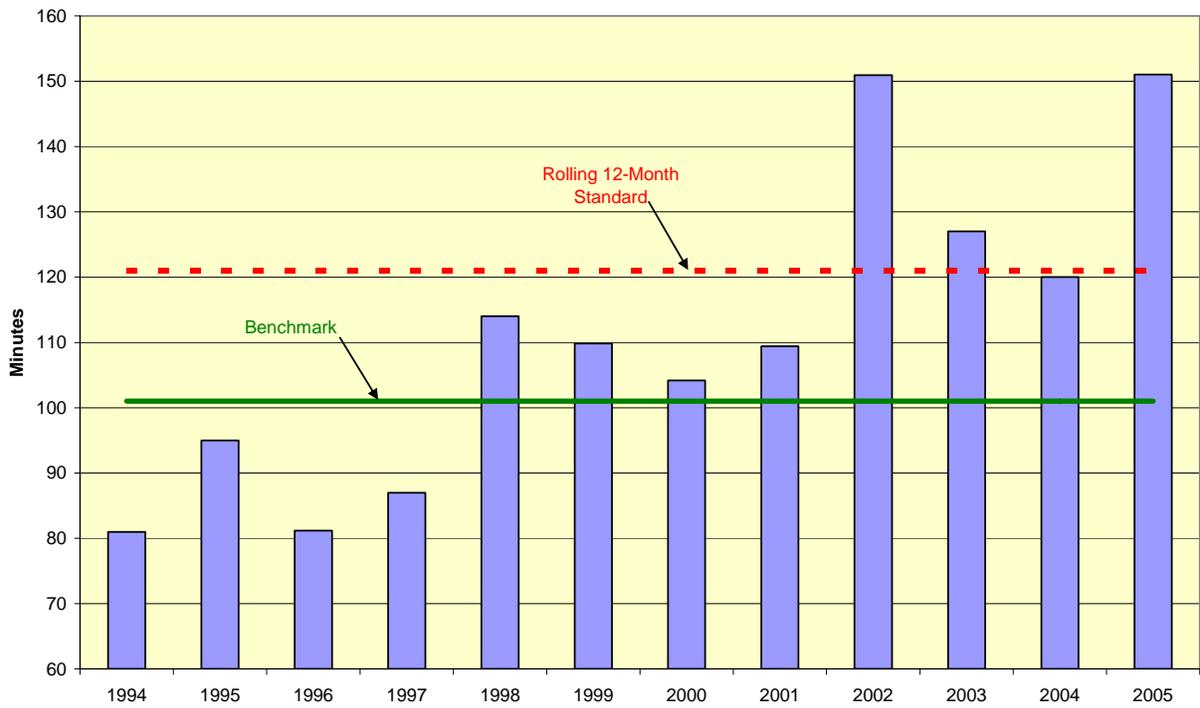
One other request for a major event exclusion for an outage, occurring on March 11, 2005, was denied.

For the 2005 calendar year, Penn Power filed four outage reports pursuant to 52 Pa. Code § 67.1, including one for the major event discussed above.

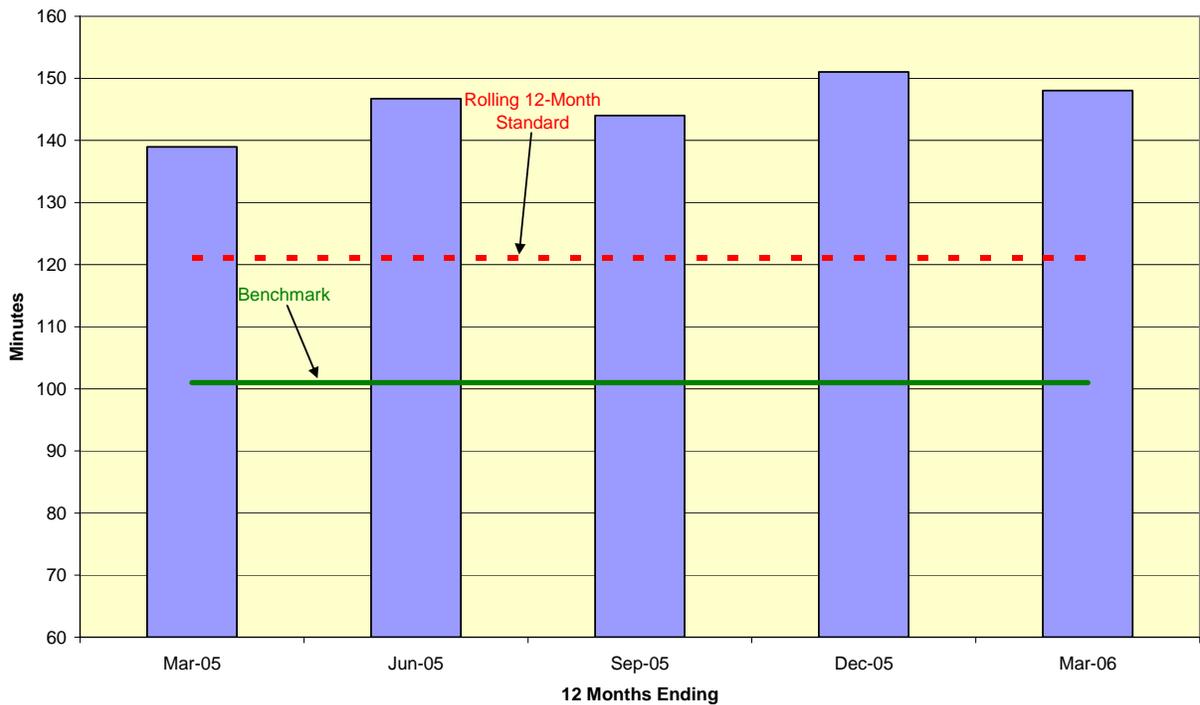
In 2005, Penn Power experienced 245,082 customer interruptions with a total duration of 37.1 million minutes, or 39.2% higher than 2004.

The following graphs depict trends in the duration of service interruptions for the Penn Power system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.

**Pennsylvania Power Company  
Customer Average Interruption Duration Index (CAIDI)**

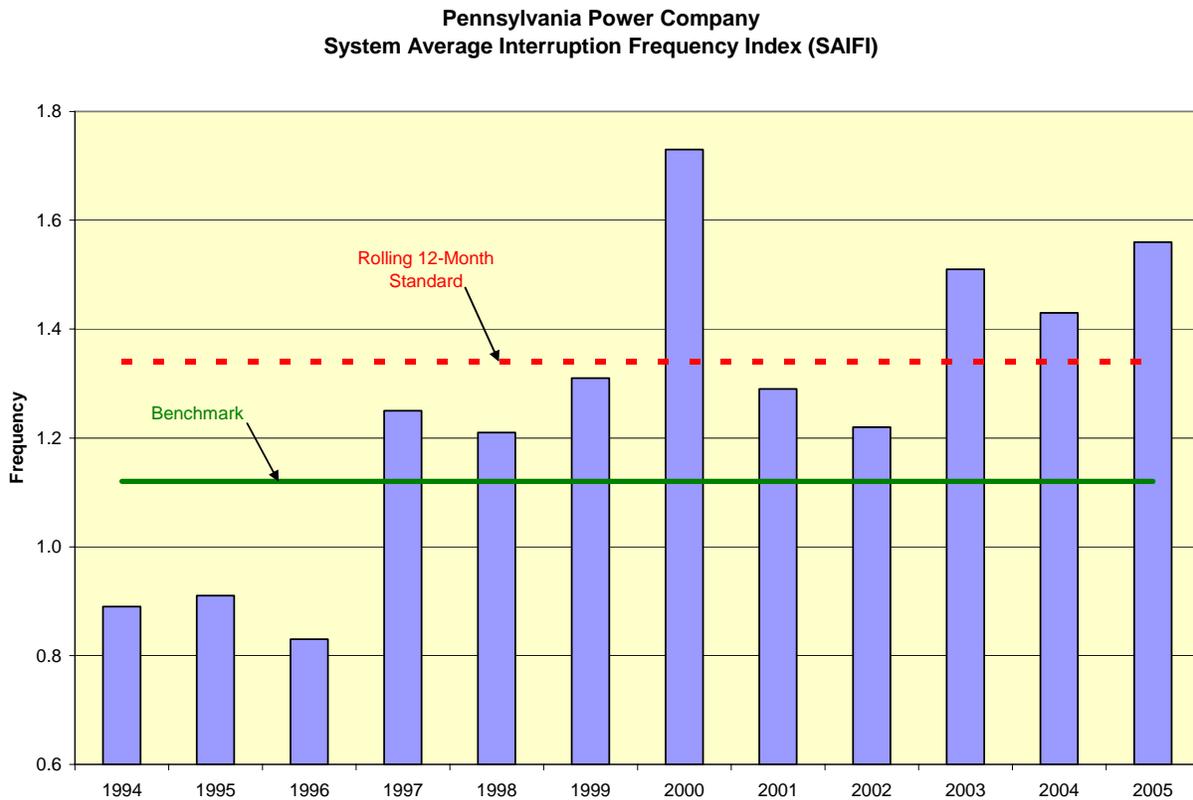


**Pennsylvania Power Company  
Customer Average Interruption Duration Index (CAIDI)**

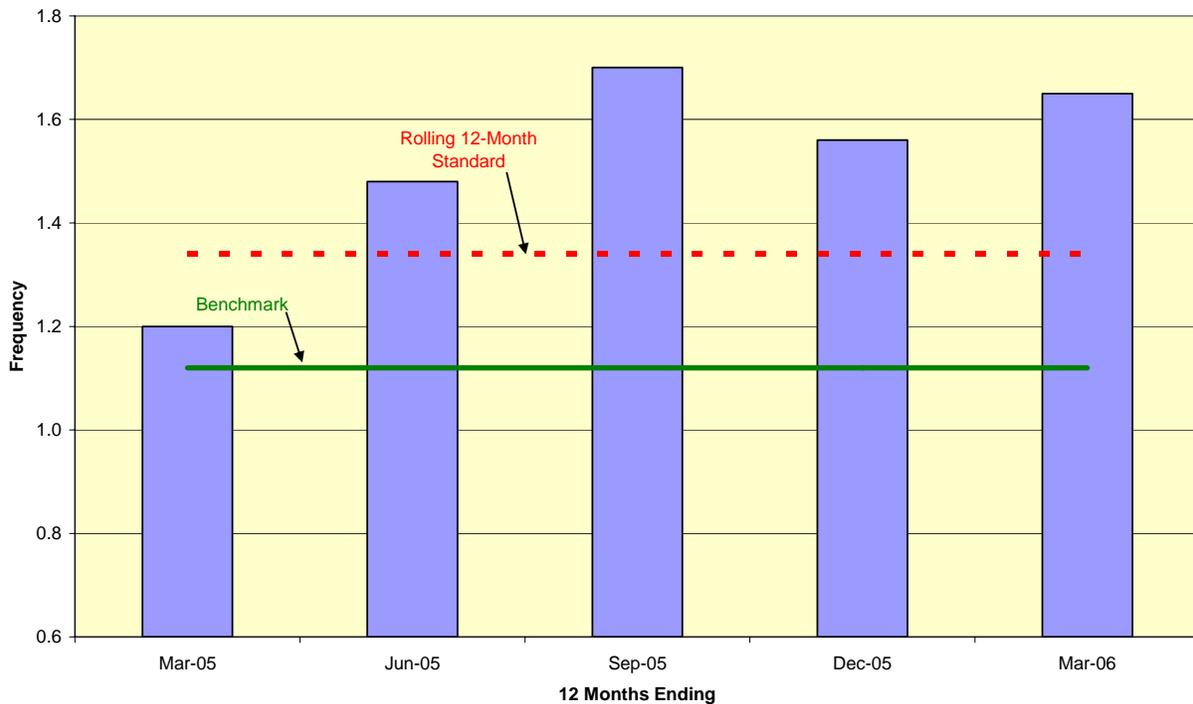


CAIDI has returned to the level experienced in 2002, 24.8% worse than the standard. The quarterly data shows average outage durations consistently exceeding the standard.

The next two graphs show trends in the frequency of service interruptions from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.



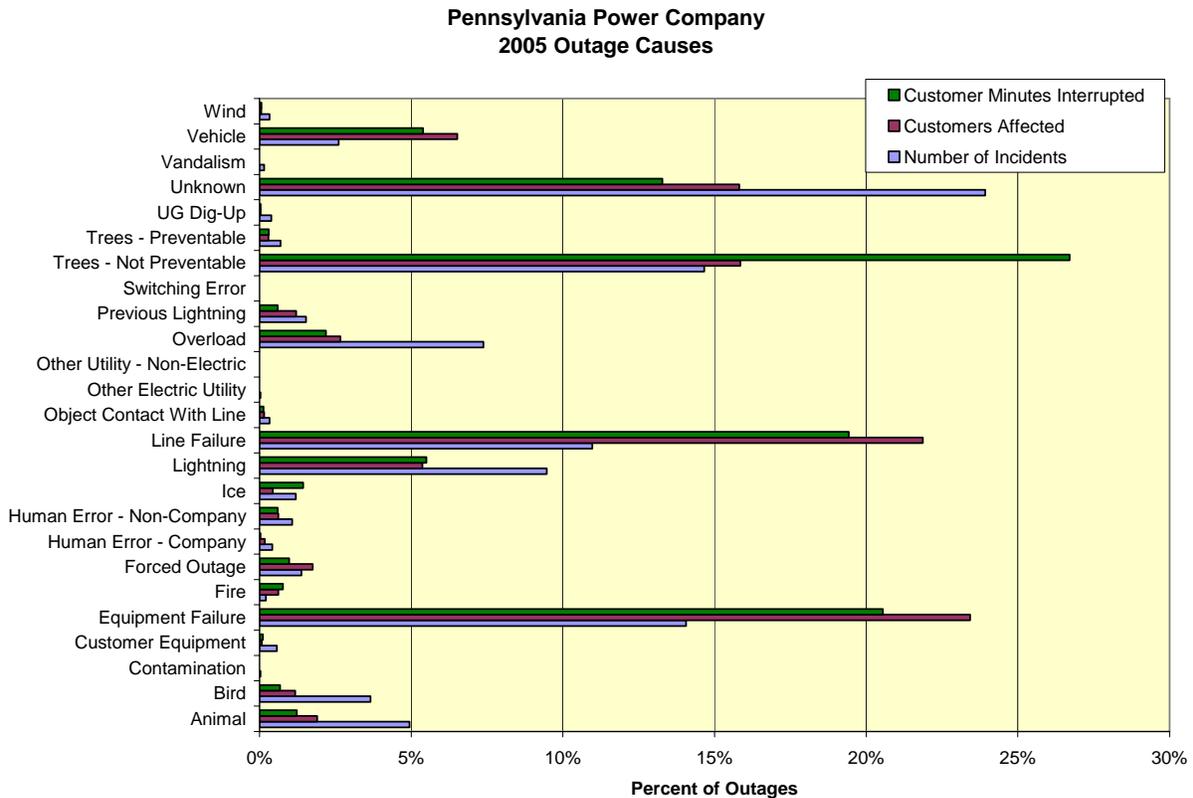
**Pennsylvania Power Company  
System Average Interruption Frequency Index (SAIFI)**



SAIFI remains well above the performance standard of 1.34 and significantly above the benchmark of 1.12. Except for the 12 months ending March 2005, SAIFI exceeded the standard through the first quarter of 2006.

It should be noted that the Joint Petition for Settlement in the investigation of FirstEnergy’s reliability performance requires Penn Power to achieve an established reliability benchmark for SAIDI by the end of 2007. The settlement requires Penn Power to achieve at least a 30% improvement over the 2003 achieved SAIDI for the 12 months ending December 31, 2007. In addition, the settlement requires Penn Power to achieve SAIDIs for the calendar years 2005 and 2006 that reflect values equal to or better than its achieved SAIDI for 2003. The resulting settlement SAIDI milestones are 192 for the calendar years 2005 and 2006 and 134 for the calendar year 2007. By letter dated June 22, 2006, Prosecutory Staff informed Penn Power that it is in violation of the Settlement and requested that a specific remediation plan be implemented. Per the letter, Prosecutory Staff informed Penn Power that if it does not adopt an acceptable remediation plan, Prosecutory Staff will request that the Commission impose penalties, including, but not limited to, fines for noncompliance with the Settlement.

The graph below shows the distribution of causes of service outages occurring during 2005 as a percentage of total outages. Non-preventable tree-related outages represented 14.7% of the incidents, 15.9% of customers affected and 26.7% of interruption minutes. Equipment failure accounted for 14.1% of the incidents, 23.4% of customers affected and 20.6% of interruption minutes.



### PECO Energy Company

PECO’s overall reliability performance has remained consistent over the past several years. The SAIFI value for 2005 of 1.02 interruptions was below the benchmark of 1.23 or 17.1%. The CAIDI value of 99 minutes was also below the benchmark of 112.

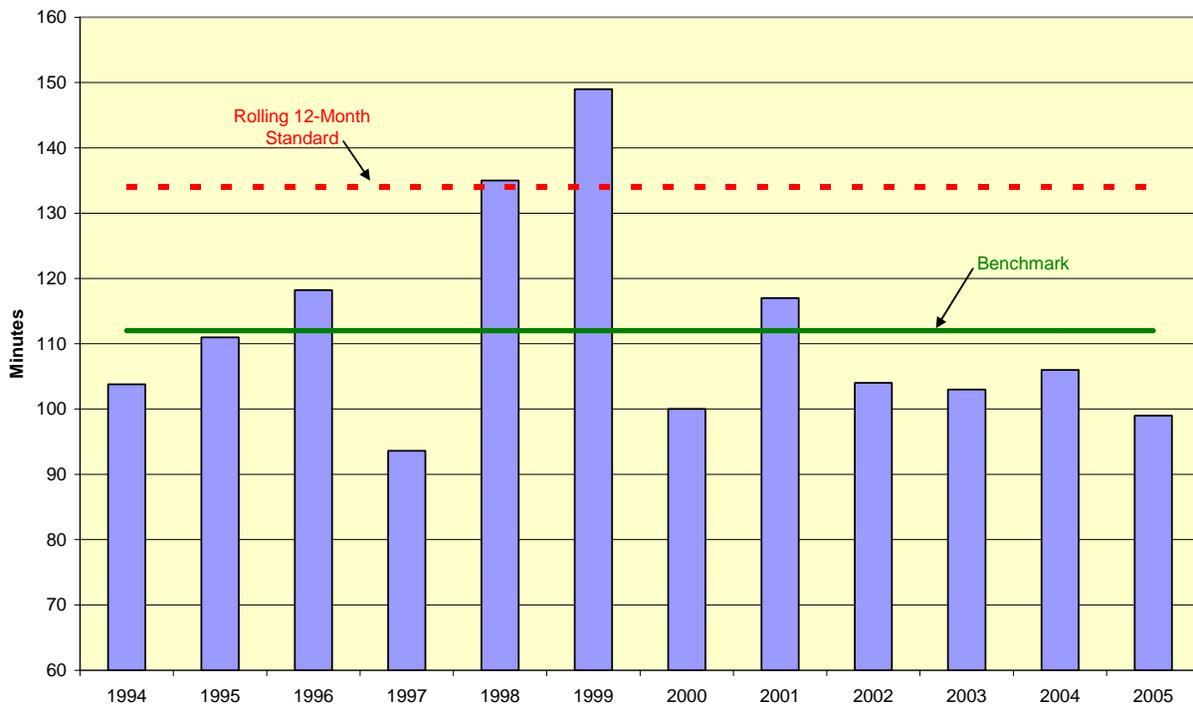
No major events occurred in PECO’s service territory in 2005.

For the 2005 calendar year, PECO filed five outage reports pursuant to 52 Pa. Code § 67.1.

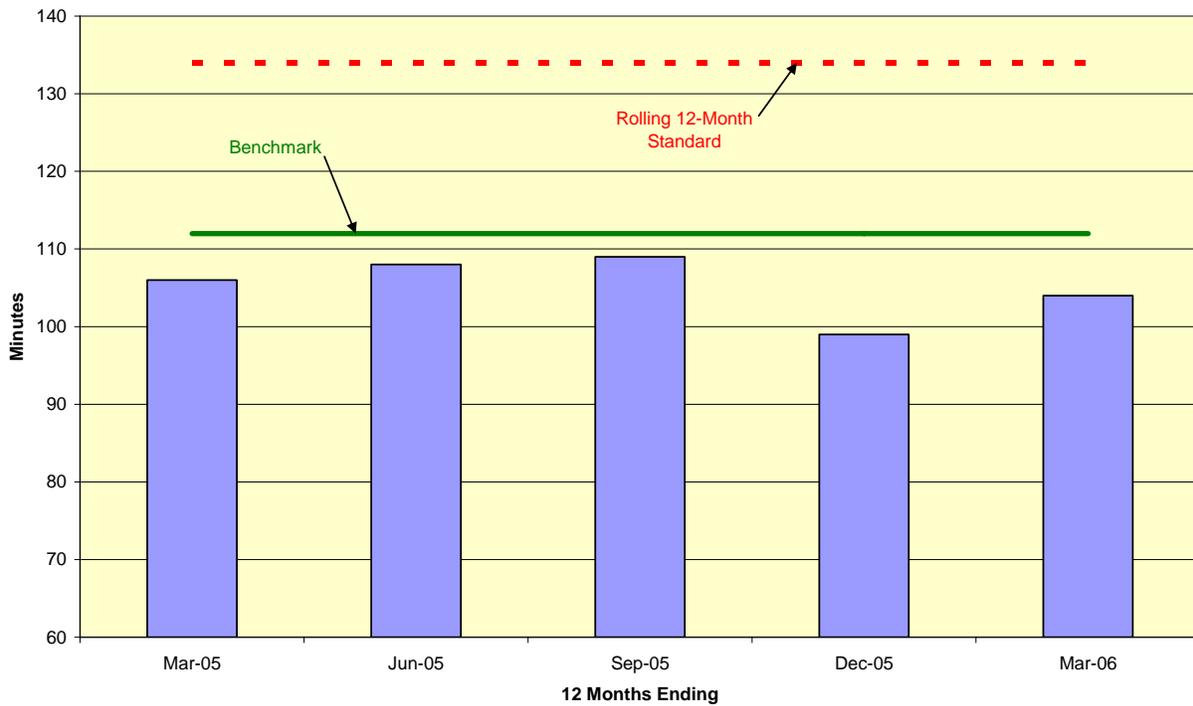
In 2005, PECO's customers experienced 1,652,581 service interruptions with a total duration of 162.9 million minutes, which was about 2.2% less than the 2004 outage minutes.

The following graphs depict trends in the duration of service interruptions for the PECO system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.

**PECO Energy Company  
Customer Average Interruption Duration Index (CAIDI)**



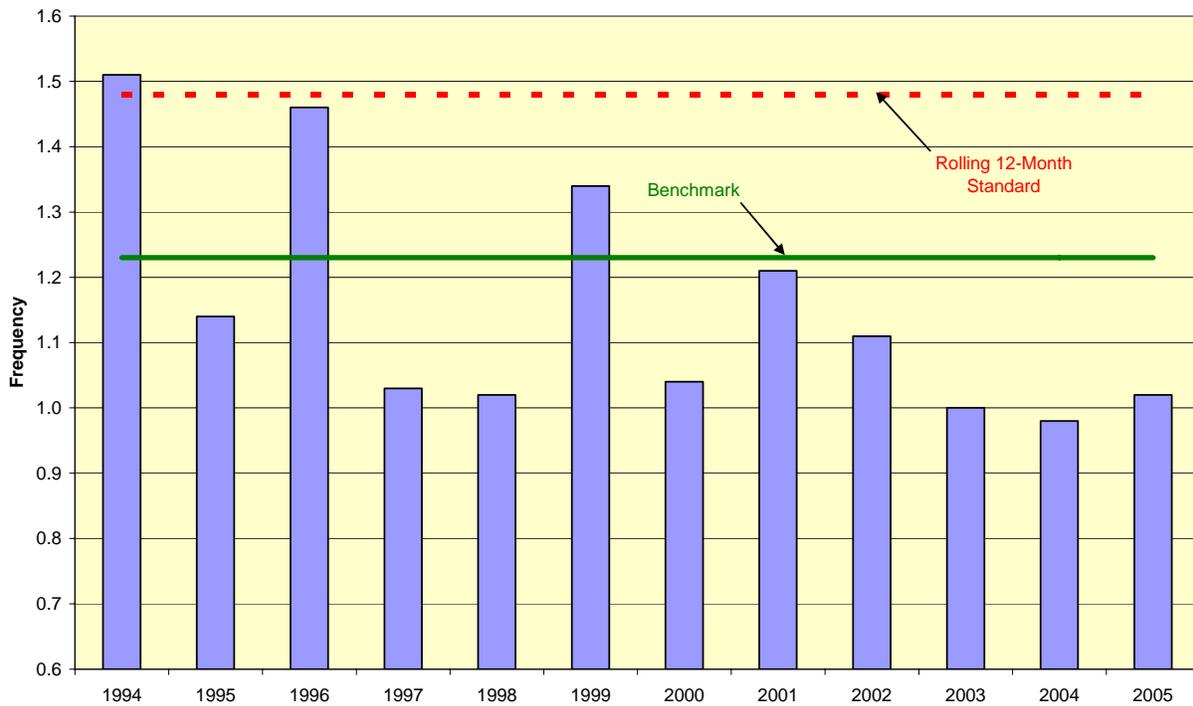
**PECO Energy Company  
Customer Average Interruption Duration Index (CAIDI)**



As seen here, for each of the rolling 12-month averages in 2005, CAIDI was consistently better than the established benchmark, ranging from 99 to 109 minutes.

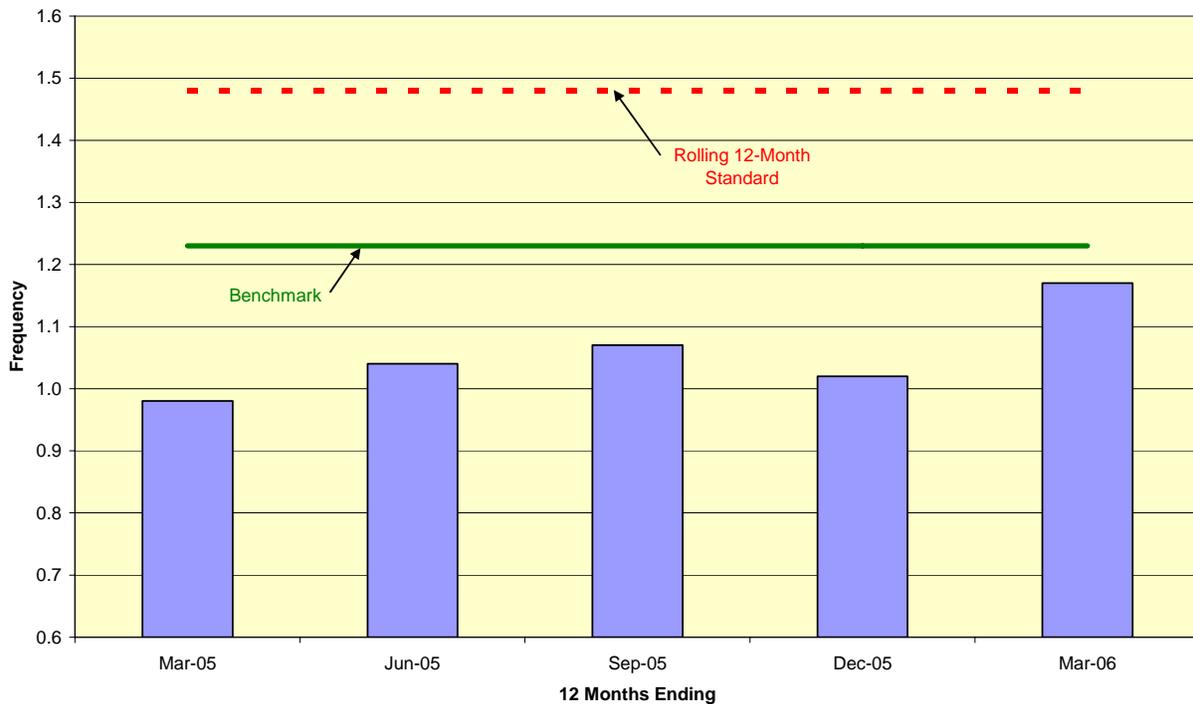
The next two graphs show trends in the frequency of service interruptions for the PECO system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards for SAIFI.

**PECO Energy Company  
System Average Interruption Frequency Index (SAIFI)**



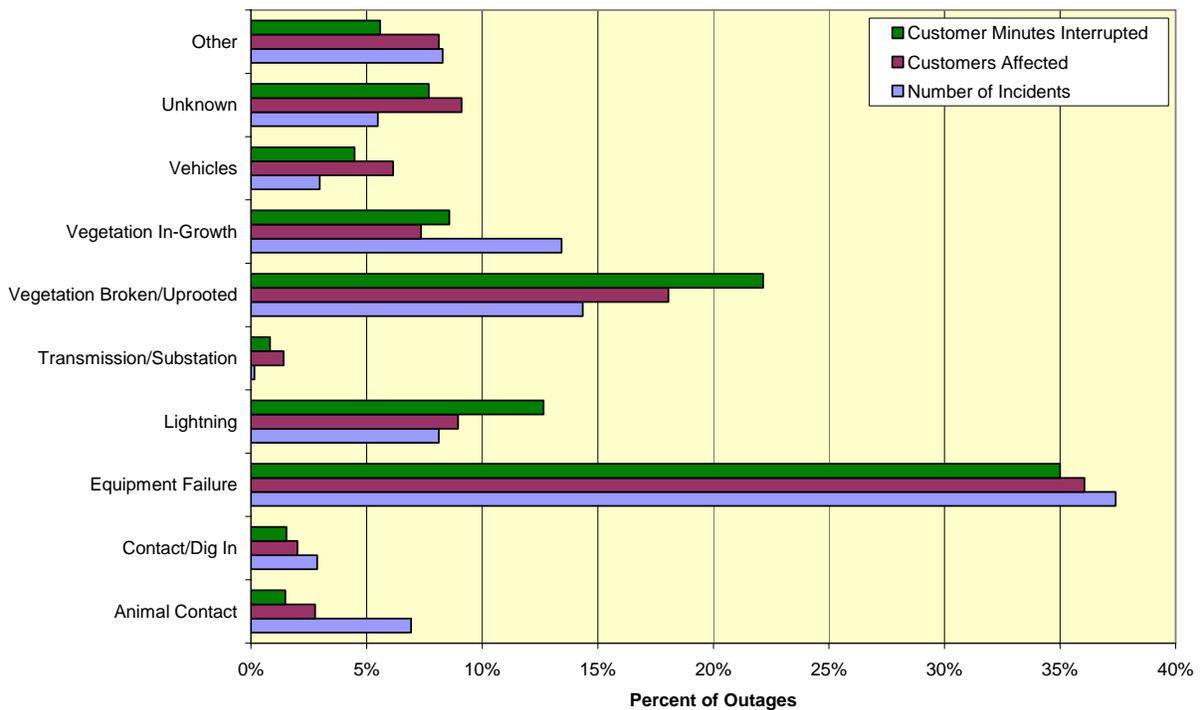
From 2002 to 2004, the annual values for SAIFI trended downward to 20% below (better than) the benchmark. The slight increase in 2005 is insignificant, since SAIFI is still 17% below the benchmark. The rolling 12-month averages for all four quarters in 2005 remained well below the benchmark. For the 12-month period ending March 2006, SAIFI was slightly higher at 1.17.

**PECO Energy Company  
System Average Interruption Frequency Index (SAIFI)**



The graph below shows the distribution of causes of service outages occurring during 2005 as a percentage of total outages. Equipment failure was responsible for 37.4% of the incidents, 36.1% of customers affected and 35.0% of interruption minutes. Tree-related outages (27.7% of incidents) were caused by broken branches and trunks or uprooted trees (71%) and vegetation in-growth (29%). Together, these outages resulted in 25.4% of the customers affected and 30.8% of interruption minutes. PECO's service territory experienced 14 storms containing lightning activity in 2005.

**PECO Energy Company  
2005 Outage Causes**



**PPL Electric Utilities Corporation**

In 2005, PPL provided service to its customers at a performance level that was better than the standards established by the Commission. CAIDI and SAIFI were also better than the benchmarks: 125 minutes for CAIDI, compared to a benchmark of 145 minutes and 0.96 interruptions for SAIFI, compared to a benchmark of 0.98. All three indices improved from 2004.

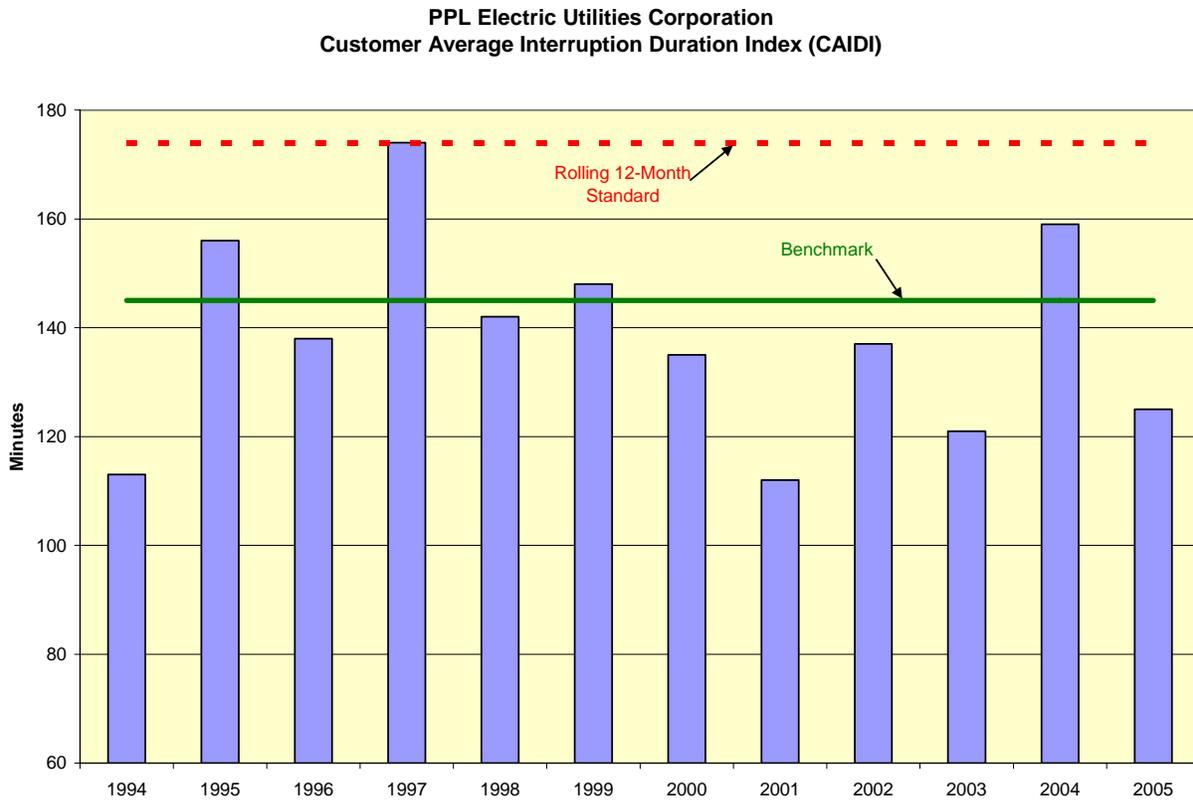
One major event occurred in PPL’s service territory during 2005. The calculations for the reliability indices excluded outage data related to this event, which was approved by the Commission.

January 6-16, 2005; snow, sleet and freezing rain; 238,154 customer service interruptions.

For the 2005 calendar year, PPL filed seven outage reports pursuant to 52 Pa. Code § 67.1, including one for the major event discussed above.

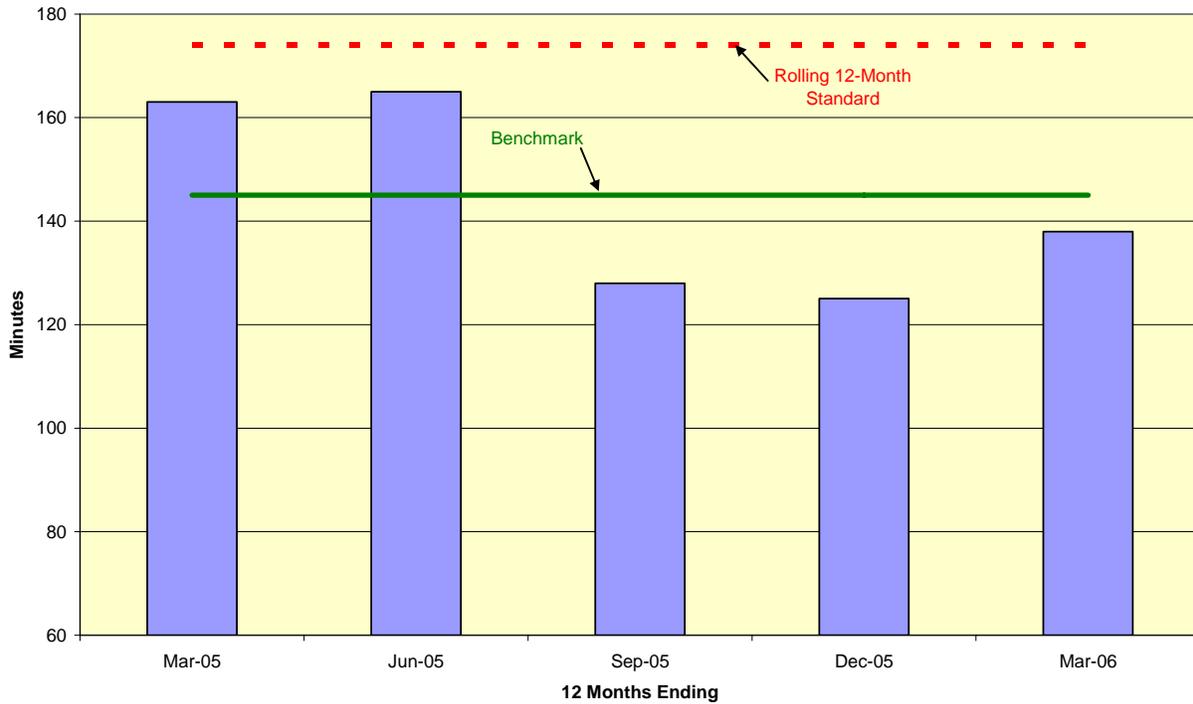
PPL experienced 1,297,546 service interruptions in 2005 with a total duration of 162.6 million minutes, or 29.4% lower than last years figure.

The following graphs depict trends in the duration of service interruptions for the PPL system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.



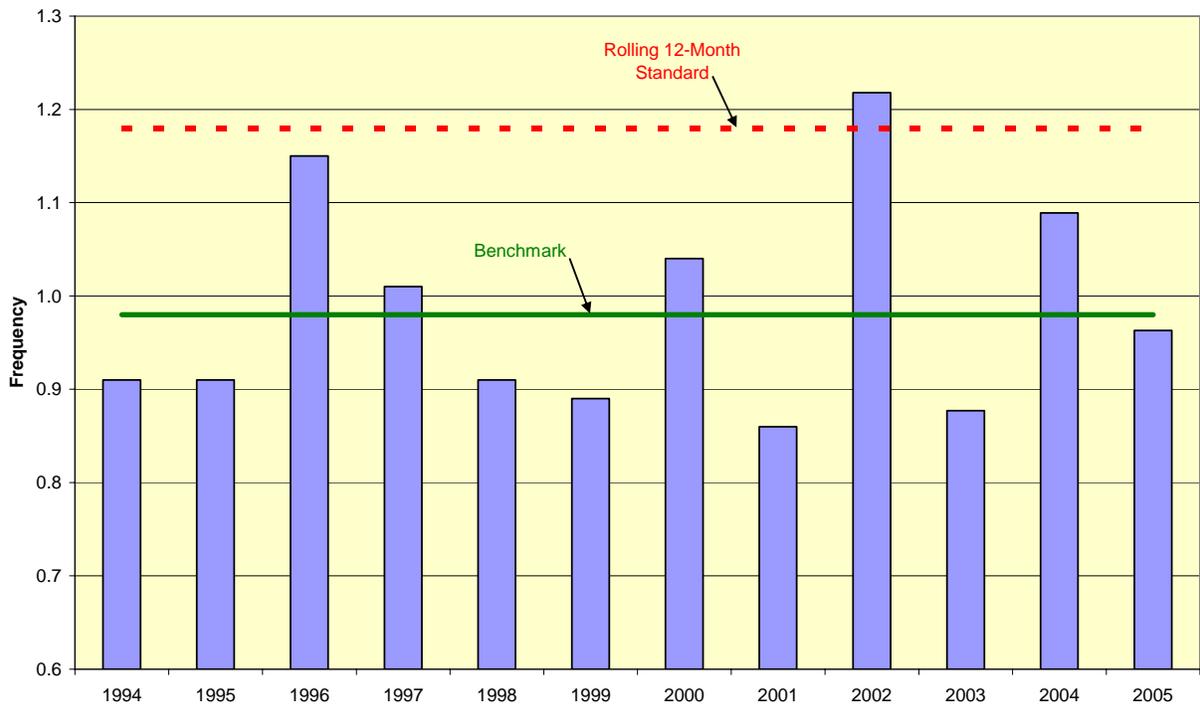
Except for 2004, the average interruption duration was below the benchmark from 2000 through 2005. None of the historical CAIDI values have exceeded the performance standard.

**PPL Electric Utilities Corporation  
Customer Average Interruption Duration Index (CAIDI)**

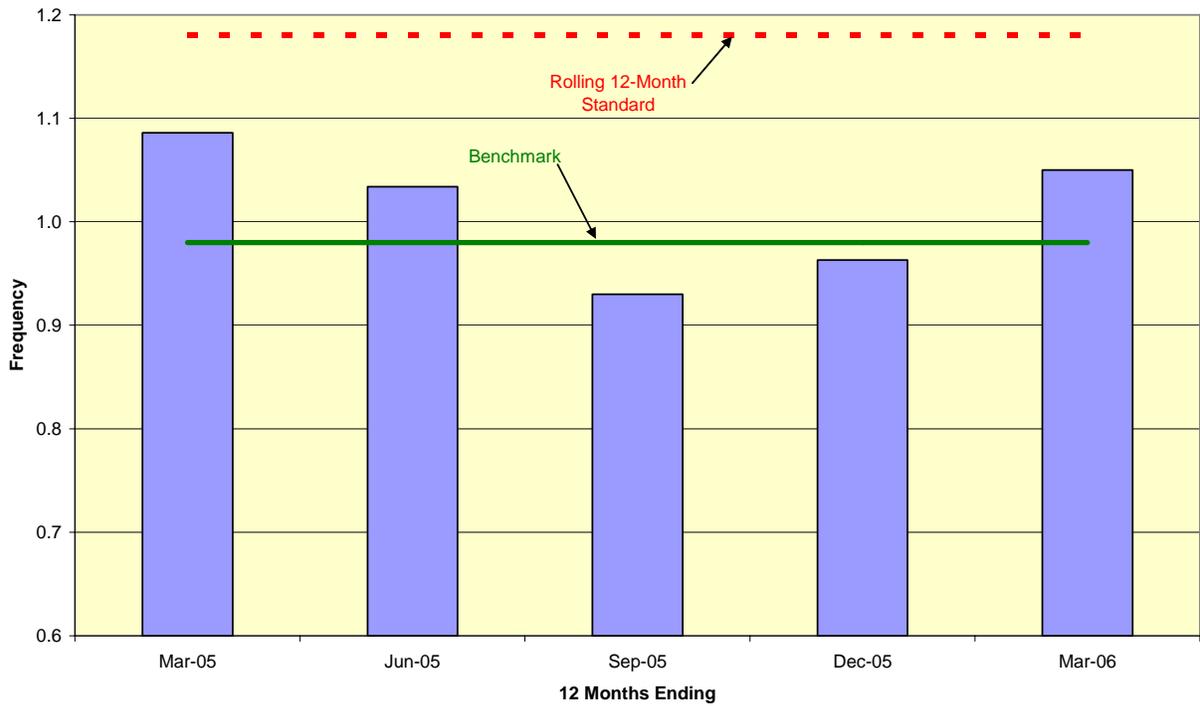


The next two graphs show trends in the frequency of service interruptions for the PPL system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards for SAIFI.

**PPL Electric Utilities Corporation  
System Average Interruption Frequency Index (SAIFI)**

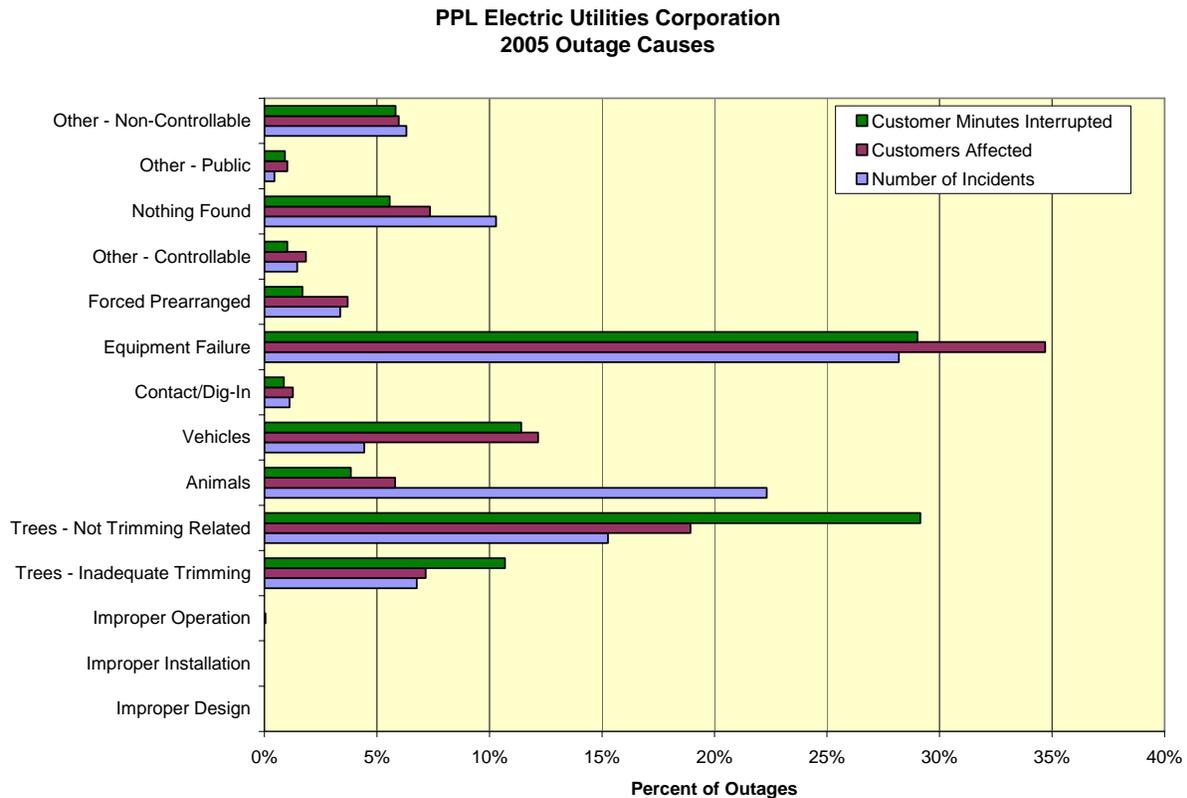


**PPL Electric Utilities Corporation  
System Average Interruption Frequency Index (SAIFI)**



PPL's SAIFI was below the benchmark for seven of the past 12 years. In 2002, SAIFI slightly exceeded the standard (1.22 vs. 1.18), which PPL attributes to an unusually high number of storms. The 2005 SAIFI of 0.96 interruptions was below the benchmark of 0.98 interruptions.

The graph below shows the distribution of causes of service outages occurring during 2005 as a percentage of total outages. Equipment failure represented 28.2% of the interruptions, 34.7% of customers affected and 29.0% of interruptions minutes. Non-trimming tree related outages were the second largest cause of customer outages (18.9%) and 29.1% of interruption minutes. Animal related outages accounted for 22.3% of incidents, but affected only 5.8% of the customers with an outage duration of 3.8% of total minutes, since most of the trouble cases are associated with individual distribution transformers.



PPL reports that 35% of trouble cases, 38% of customer interruptions and 39% of interruption minutes attributed to equipment failure are weather-related and are not considered to be indicators of equipment condition or performance.

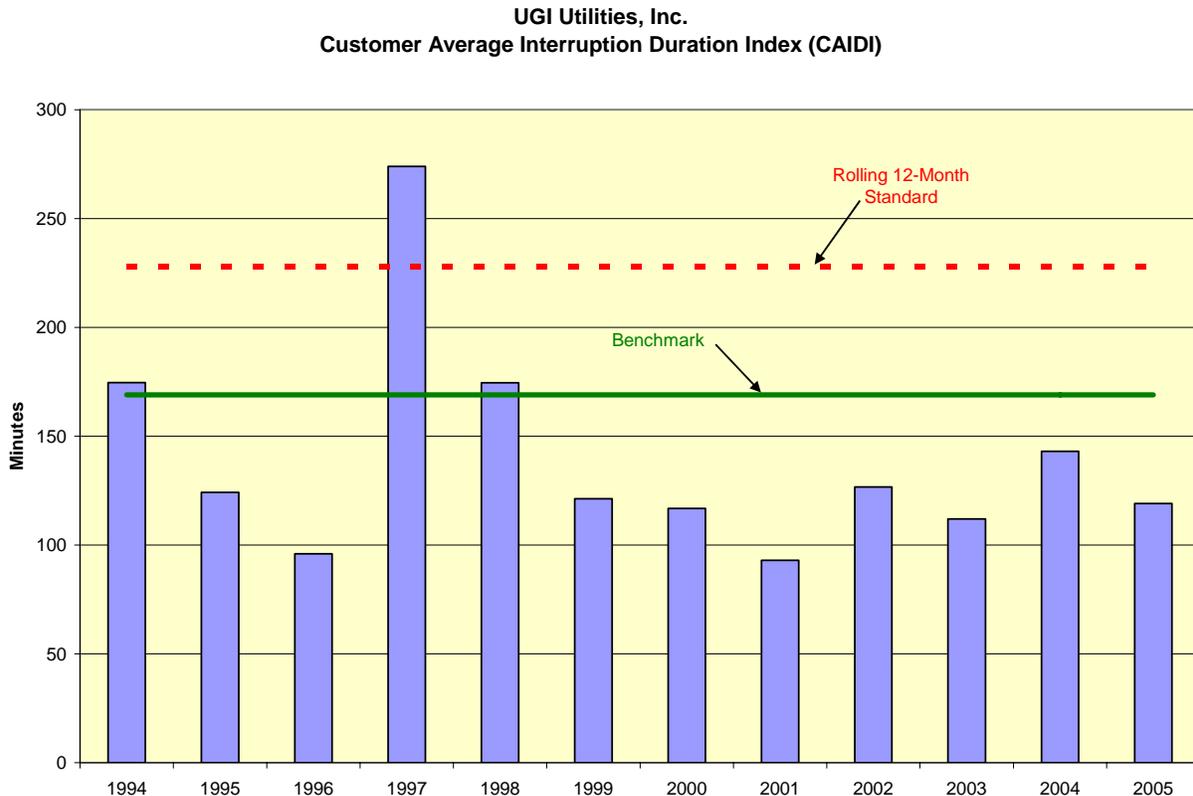
## UGI Utilities, Inc.

UGI's overall reliability performance during 2005 was better than the established benchmarks. The 2005 CAIDI of 119 minutes was 24 minutes better than the 2004 CAIDI and 29.6% better than the benchmark of 169 minutes. The 2005 SAIFI of 0.64 interruptions was slightly better than last year's SAIFI and 22.9% better than the benchmark. UGI points out that favorable weather conditions experienced during 2004 and 2005 have contributed significantly to these results.

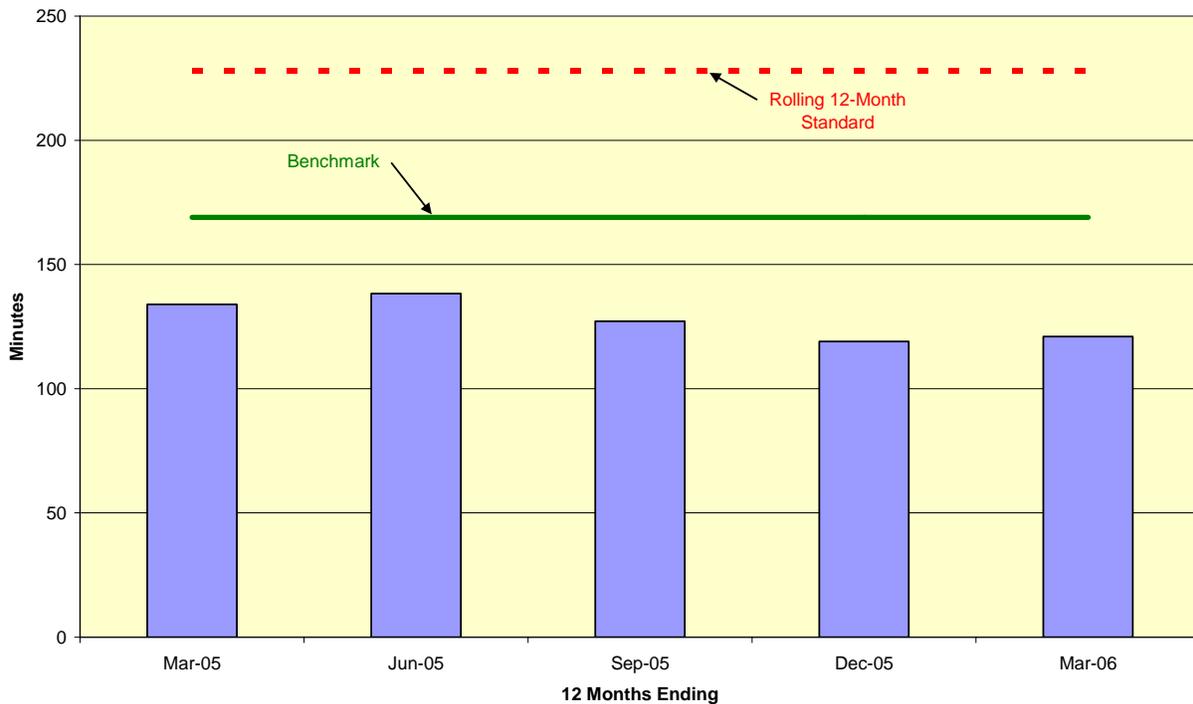
No major events have been reported for 2005.

In 2005, UGI experienced 39,679 service interruptions with a total duration of 4.7 million minutes, which was about 18.1% lower than that which was reported last year.

The following graphs depict trends in the duration of service interruptions for the UGI system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.



**UGI Utilities, Inc.**  
**Customer Average Interruption Duration Index (CAIDI)**



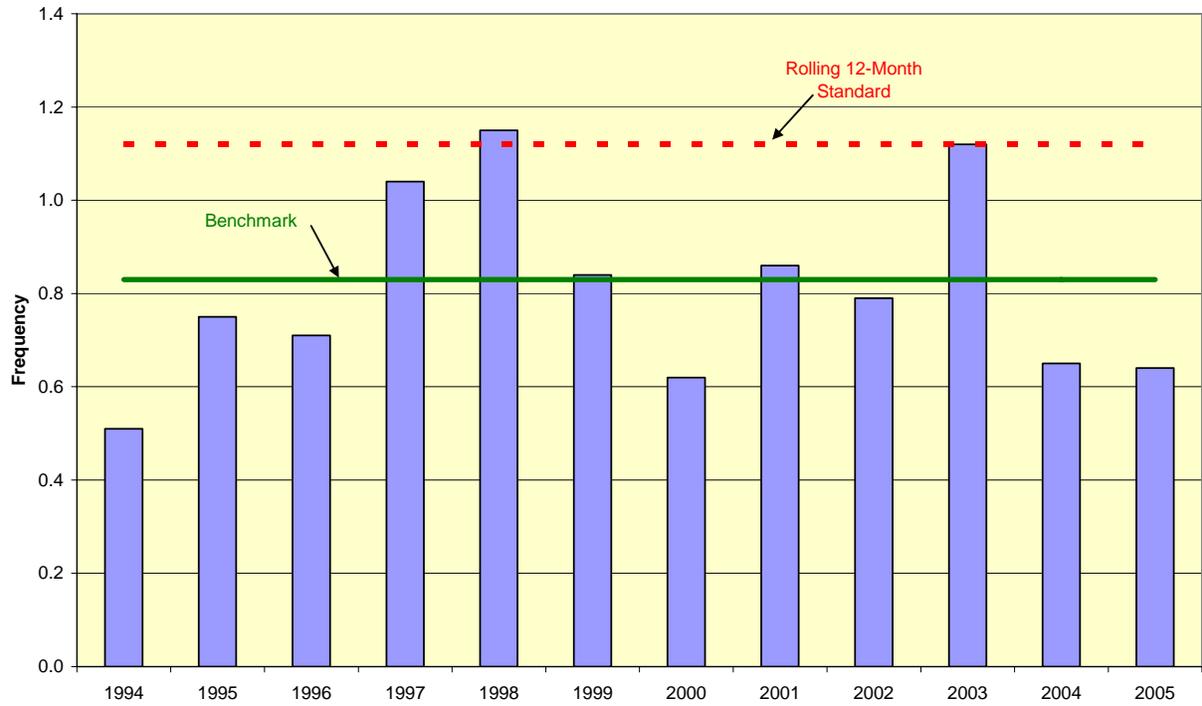
During 2005, UGI's CAIDI showed slight improvement. UGI's SAIFI results have shown consistent performance throughout the period.

The next two graphs show trends in the frequency of service interruptions for the UGI system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards for SAIFI.

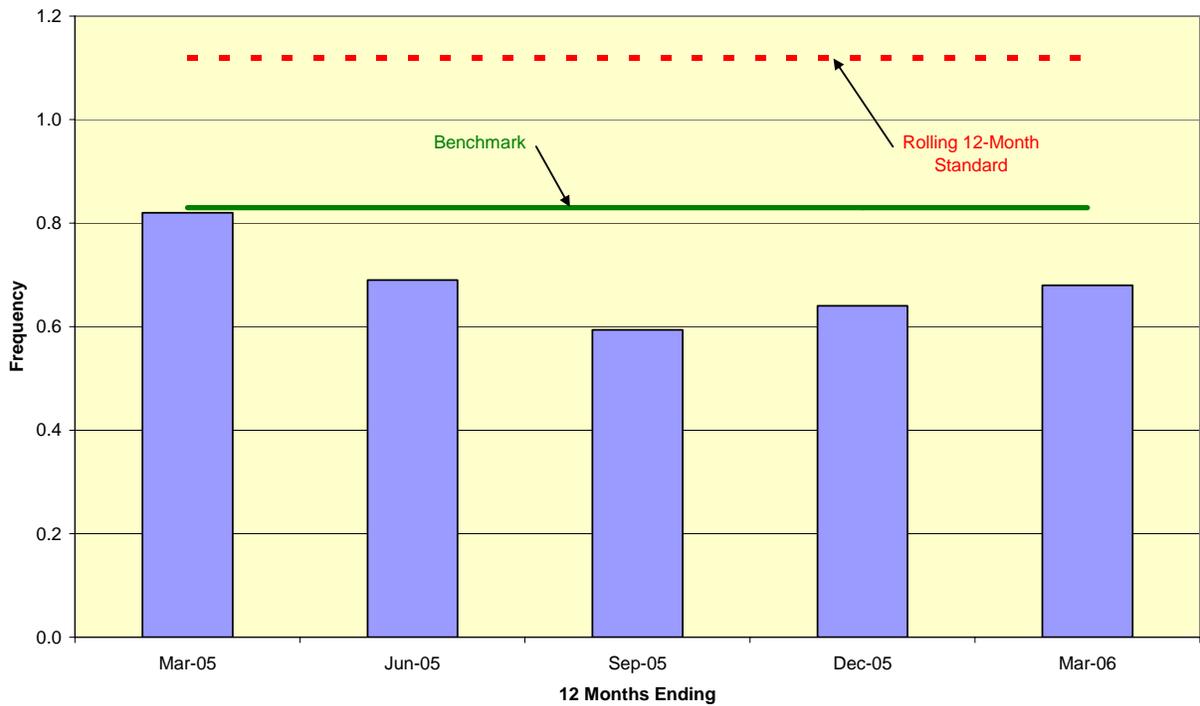
The final graph shows the distribution of causes of service outages occurring during 2005 as a percentage of total outages. Equipment failure caused 33.9% of the incidents, resulting in 28.7% of customers affected and 15.4% of interruption minutes. Tree-related outages represented 31.0% of incidents, 39.1% of customers affected and 52.7% of interruption minutes.

A large portion of equipment failures are attributed to a problem in a distribution-type fuse cutout. UGI has implemented a replacement program to identify and replace these defective parts. Tree trimming is scheduled as needed based on UGI's assessment of tree encroachment and circuit performance. Trim cycles vary from three years in urban areas to seven years in rural areas.

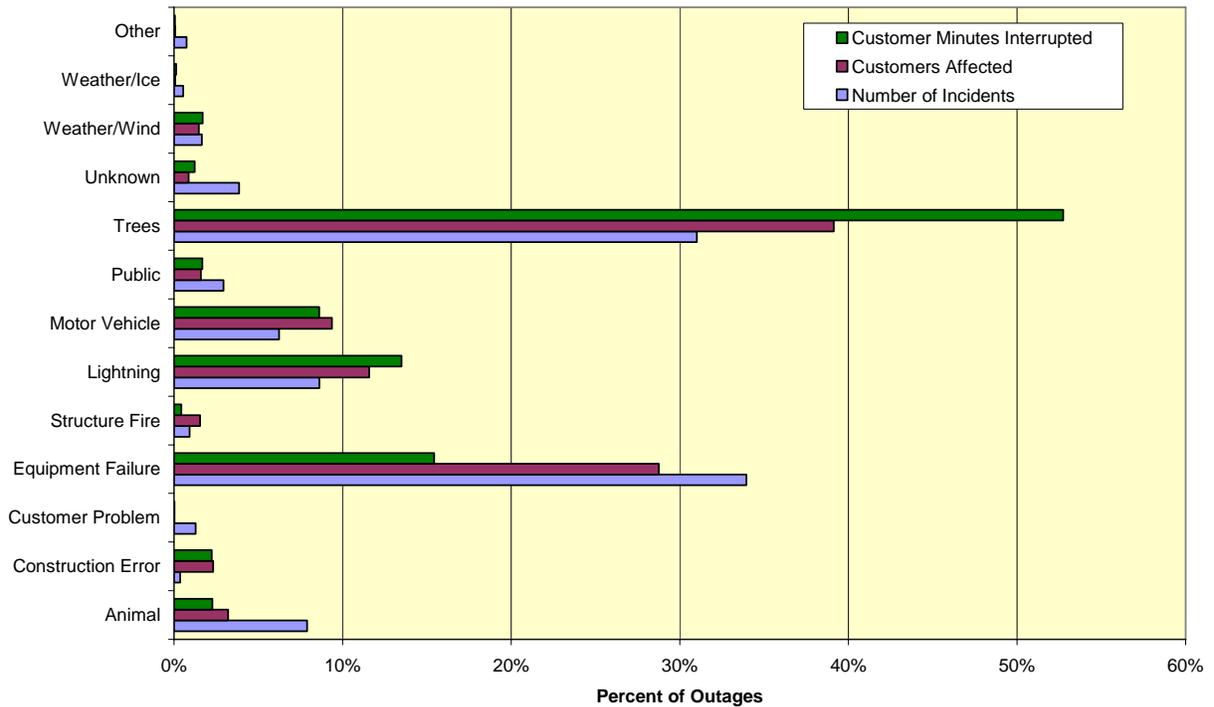
UGI Utilities, Inc.  
System Average Interruption Frequency Index (SAIFI)



**UGI Utilities, Inc.  
System Average Interruption Frequency Index (SAIFI)**



**UGI Utilities, Inc.  
2005 Outage Causes**



## Citizens' Electric Company

Citizens' has a relatively small operating area with an electric system consisting of one distribution substation and nine distribution feeder lines.

In 2005, Citizens' system reliability performance was within the Commission established benchmarks and standards. Citizens' CAIDI of 116 minutes was 52 minutes longer than the 2004 CAIDI, but only 11 minutes above the benchmark of 105 minutes. The 2005 SAIFI was an average of 0.1 outages per customer, compared to the previous year's SAIFI of 0.39. For the first year since 2002, the outage frequency was better than the rolling 12-month standard of 0.27 and 0.1 below the benchmark.

Citizens' continued deployment of an Automatic Meter Reading system across its service territory. The project was completed in February 2006. In addition to the meter reading functionality, this system will enable Citizens' to verify service outages and perform quicker assessments of overall system conditions during a major event. With the system fully operational, Citizens' plans to redirect a significant part of the labor previously spent reading meters to maintenance and inspection activities.

The calculations for the 2005 reliability indices exclude outage data relating to four major events, which were approved by the Commission:

April 30, 2005: equipment failure during extended rain event; 1,153 customers affected; 92 interruption minutes excluded.

May 14, 2005: off right-of-way tree contacted a 3-phase line during a thunderstorm; 1,252 customers affected; 51 interruption minutes excluded.

November 6, 2005: strong winds damaged a 3-phase line; 1,252 customers affected; 16 interruption minutes excluded.

November 10, 2005: Strong winds caused phase wires to contact; 1,252 customers affected; 50 interruption minutes excluded.

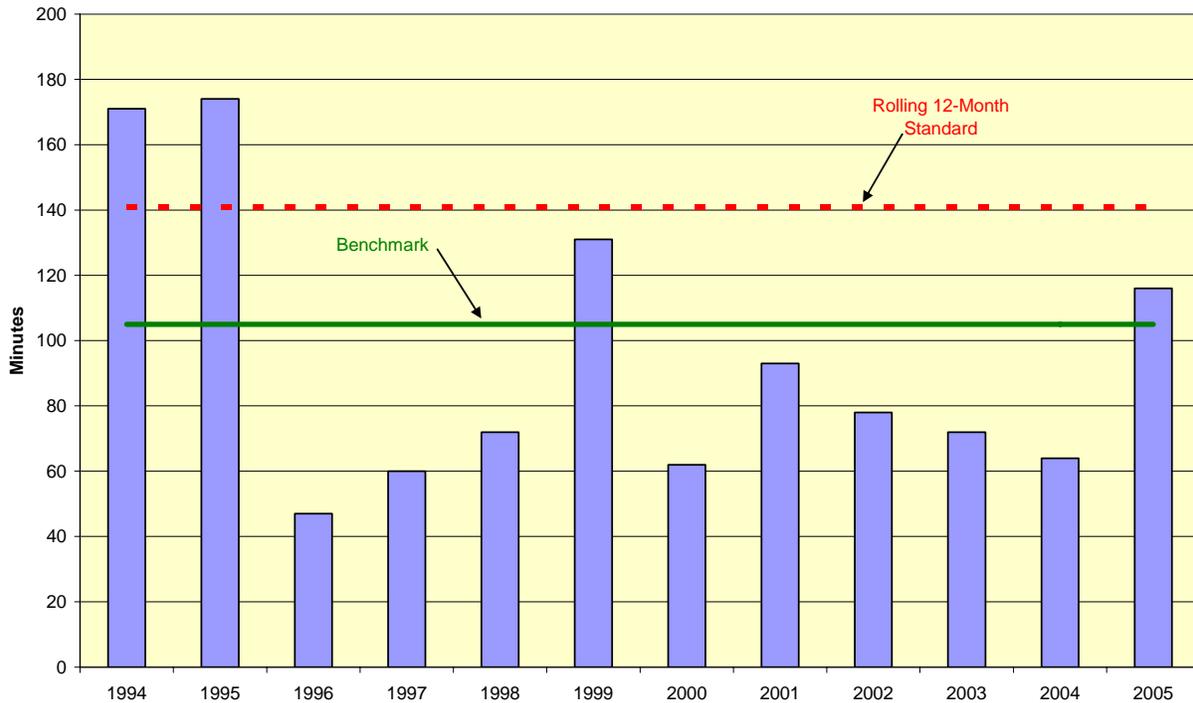
On August 11, 2005, Citizens' Petition for Appeal of Staff Determination Denying Request for Exclusion of Major Event was denied by the Commission, regarding the exclusion of a service outage occurring on April 25, 2004, and granted for the purpose of verifying the recalculation of Citizens' historic reliability benchmarks. Citizens' requested that, if it is the Commission's policy to deny major event exclusion status for distribution equipment failures, that it be permitted to recalculate its base year historic reliability benchmarks accordingly. Docket No. P-00042127. Citizens' has submitted additional information to

determine the type of each event excluded from the recomputation. Upon Commission review of this information, a corrected level of historic reliability benchmarks will be established, if deemed appropriate.

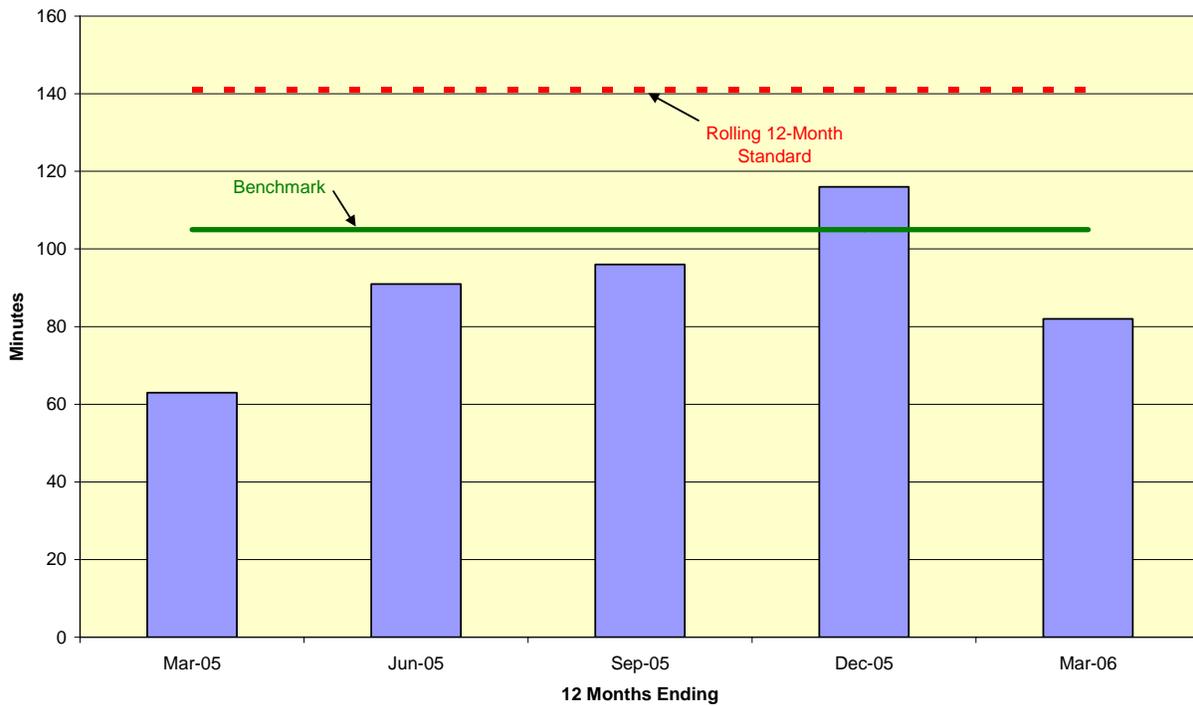
Citizens' experienced a total of 667 customer interruptions in 2005, with a total duration of 77,100 minutes, excluding major events, which was 52.0% lower than that which was reported last year.

The following graphs depict trends in the duration of service interruptions for the Citizens' system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.

**Citizens' Electric Company  
Customer Average Interruption Duration Index (CAIDI)**



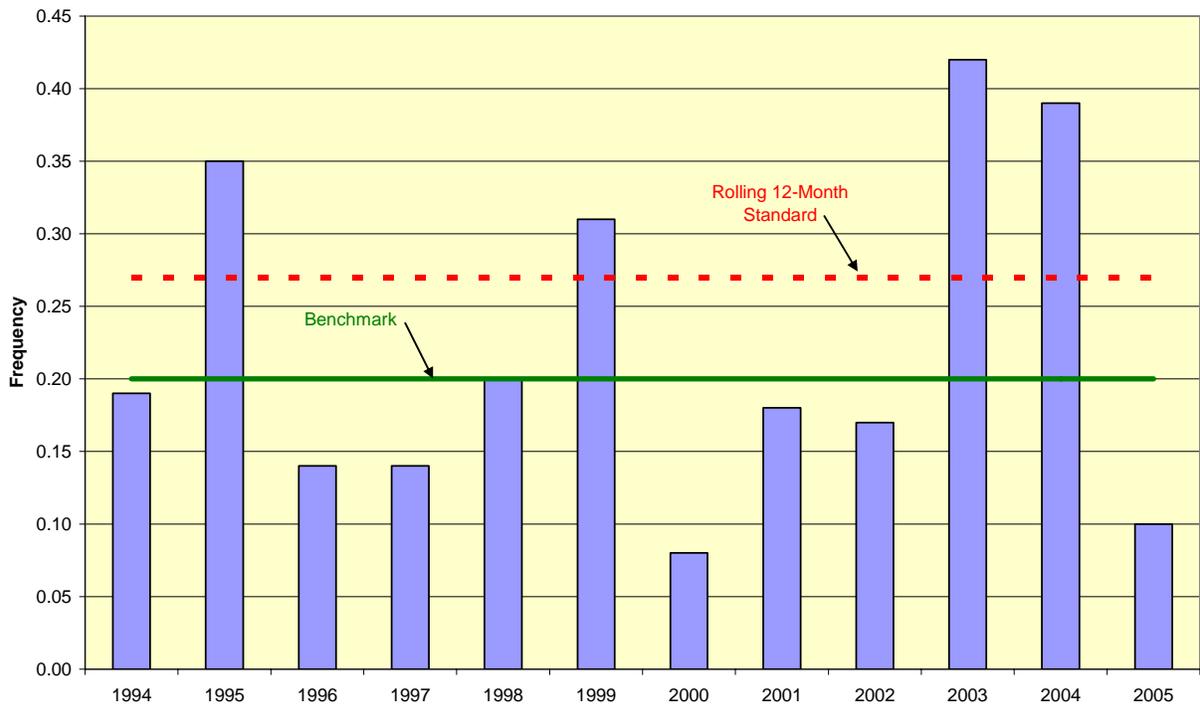
**Citizens' Electric Company  
Customer Average Interruption Duration Index (CAIDI)**



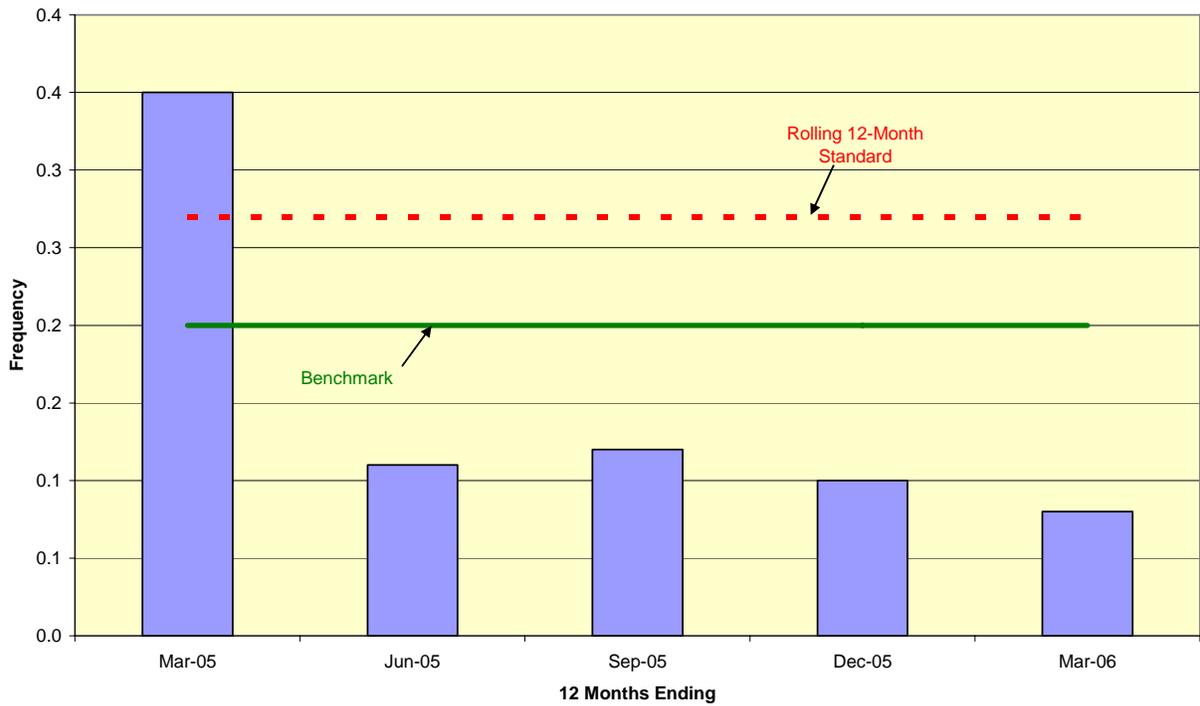
Except for the fourth quarter of 2005, the quarterly rolling 12-month averages are well below (better than) the CAIDI benchmark. The 2005 average is above the benchmark, but well within the acceptable bandwidth.

The next two graphs show trends in the frequency of service interruptions for the Citizens' service territory from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards for SAIFI.

**Citizens' Electric Company  
System Average Interruption Frequency Index (SAIFI)**



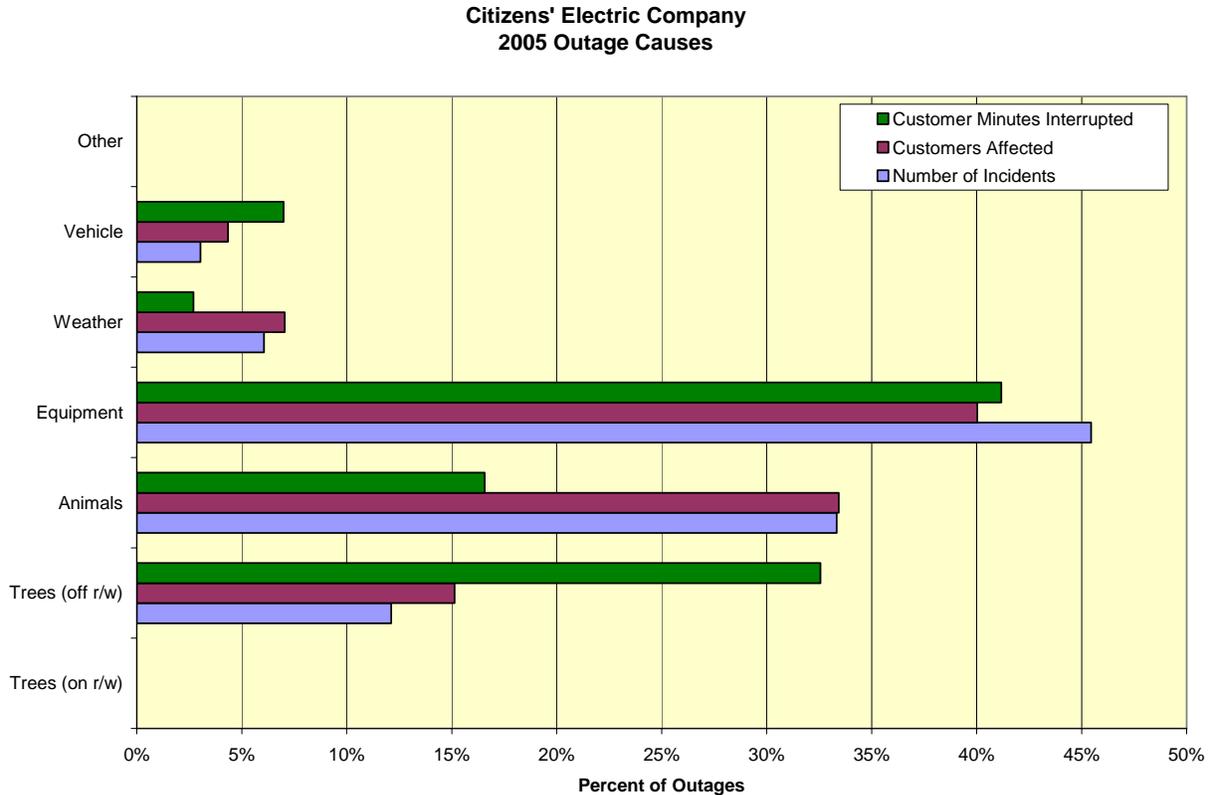
**Citizens' Electric Company  
System Average Interruption Frequency Index (SAIFI)**



Although the outage frequency values shown on these graphs are much smaller than the SAIFI values of larger companies, valid comparisons are not made with other companies' reliability performance, but with the historical performance of Citizens'. Smaller systems tend to experience more variability in service outage data, which is captured in the development of historical benchmarks.

In 2003 and 2004, Citizens' SAIFI exceeded the performance standard. The rolling 12-month average SAIFI for the first quarter of 2005 was 0.35, exceeding the standard. For the last three quarters of 2005, SAIFI averaged 0.1, well below the benchmark.

The graph below shows the distribution of causes of service outages occurring during 2005 as a percentage of total outages. The most frequent outage cause was equipment failure, representing 45.5% of the outages and 42.1% of customer minutes interrupted. Animal-related outages were 33.4% of customers affected, but only 16.6% of customer minutes interrupted. Tree-related outages (off right-of way) totaled 15.1% of customers affected, but resulted in 32.6% of customer minutes interrupted.



## Pike County Light & Power Company

Pike County is the westernmost portion of Orange & Rockland's Northern Operating Division. This area is fed from two 34.5 kV radial circuits. Thus, sustained interruptions are usually smaller, affecting fewer customers, and will take a longer amount of time per customer to restore service.

The 2005 overall reliability performance of Pike County was worse than the 2004 performance. The SAIDI value increased from 90 minutes in 2004 to 202 minutes in 2005. The outage frequency increased from 0.52 in 2004 to 1.85 in 2005 or 3.5 times the SAIFI standard of 0.53. The CAIDI value of 109 minutes was 63 minutes less than the previous year and 38.8% below the benchmark of 178 minutes.

The calculations for the 2005 reliability indices exclude outage data relating to ten major events, which were approved by the Commission:

January 12, 2005: tree contact; 468 customers affected; 52,272 interruption minutes excluded.

March 24, 2005: storm; 848 customers affected; 1,067,666 interruption minutes excluded.

April 14, 2005: non-company accident; 2,230 customers affected; 138,872 interruption minutes excluded.

May 2, 2005: equipment failure; 820 customers affected; 26,240 interruption minutes excluded.

June 10, 2005: non-company accident; 2,804 customers affected; 738,697 interruption minutes excluded.

June 17, 2005: tree contact; 2,706 customers affected; 111,864 interruption minutes excluded.

June 22, 2005: tree contact; 2,232 customers affected; 381,583 interruption minutes excluded.

August 8, 2005: storm; 3,052 customers affected; 221,297 interruption minutes excluded.

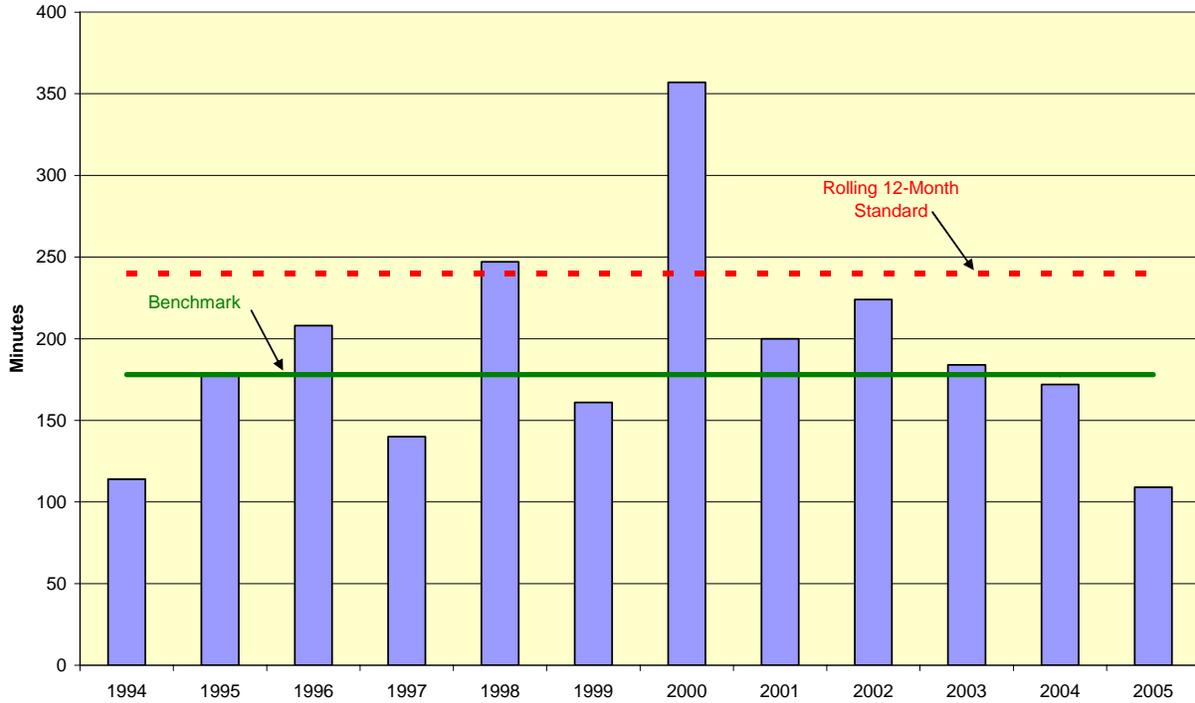
August 12, 2005: storm; 1,727 customers affected; 290,416 interruption minutes excluded.

November 6, 2005: storm; 2,255 customers affected; 259,065 interruption minutes excluded.

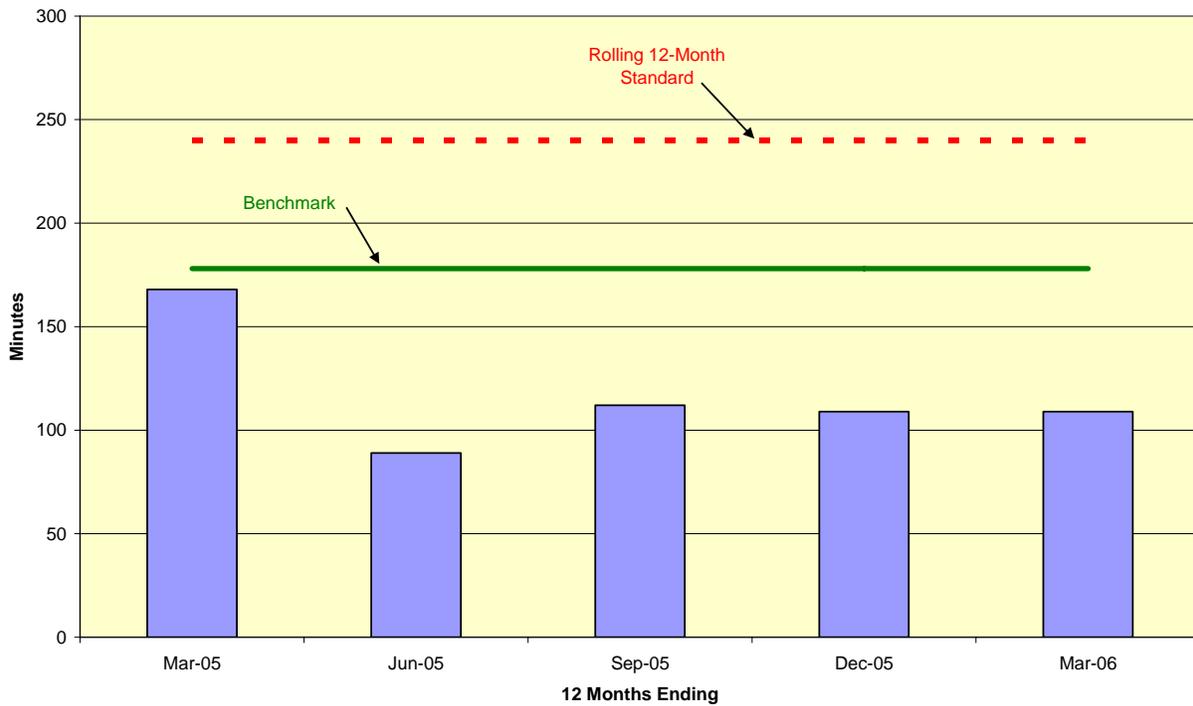
In 2005, Pike County experienced 8,123 customer interruptions with a total duration of 885,329 minutes, which was about 127% higher than that which was reported last year.

The following graphs depict trends in the duration of service interruptions for the Pike County system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.

**Pike County Light & Power Company  
Customer Average Interruption Duration Index (CAIDI)**



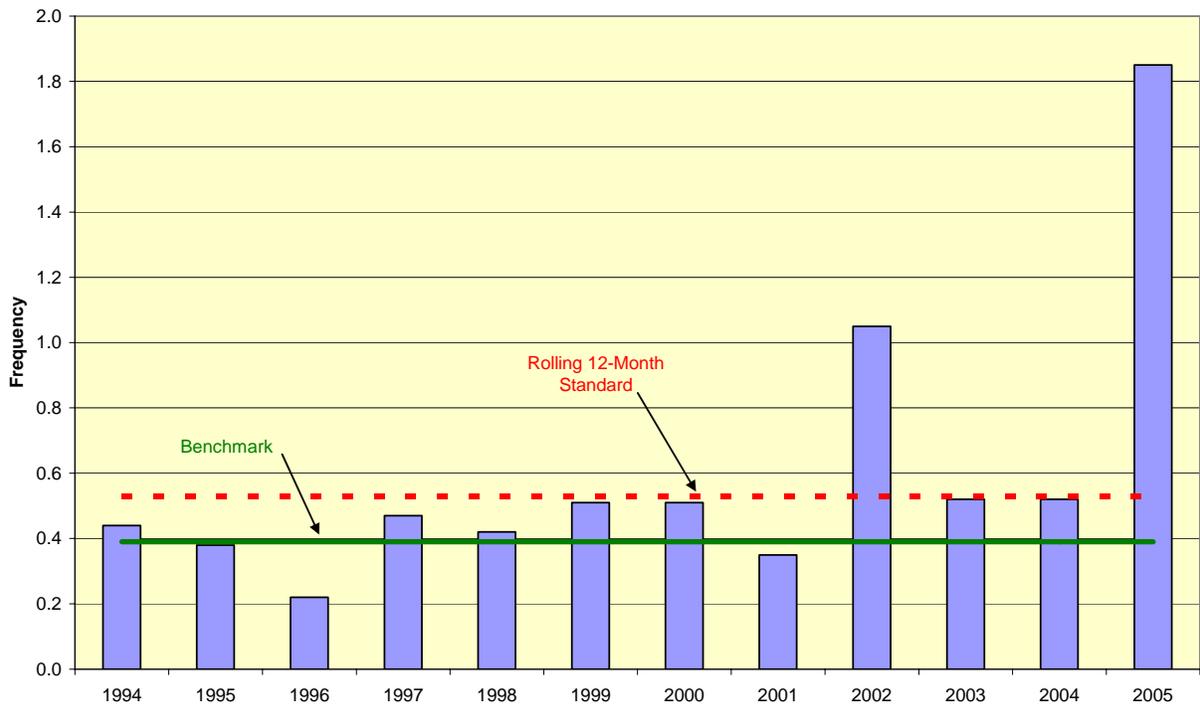
**Pike County Light & Power Company  
Customer Average Interruption Duration Index (CAIDI)**



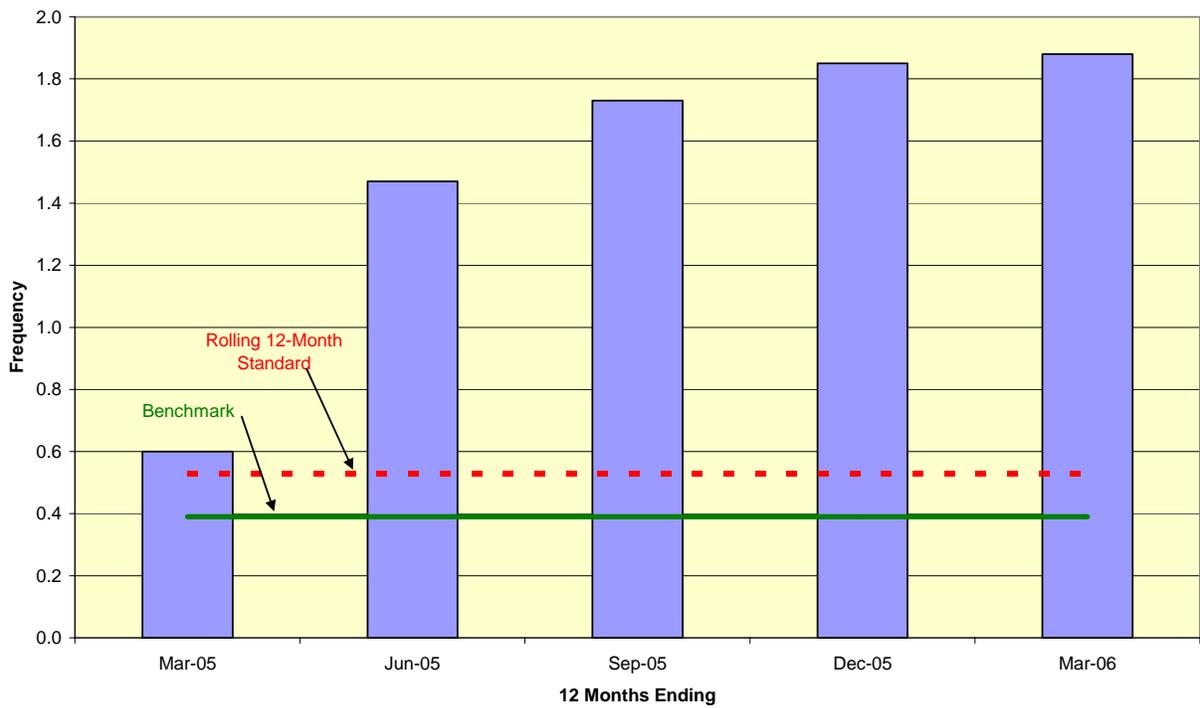
The annual CAIDI values have improved over the past three years, and the 2005 CAIDI is at its lowest level in the past 12 years. Rolling 12-month averages for the four quarters of 2005 and the first quarter of 2006 were better than the benchmark.

The next two graphs depict trends in the frequency of service interruptions for the Pike County system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards for SAIFI.

**Pike County Light & Power Company  
System Average Interruption Frequency Index (SAIFI)**



**Pike County Light & Power Company  
System Average Interruption Frequency Index (SAIFI)**



For 2003 and 2004, SAIFI has been acceptable at 0.52, compared to a current benchmark of 0.39 and a rolling 12-month standard of 0.53. The SAIFI values for each quarter in 2005 significantly exceeded the performance standard. For the 12-month period ending December 2005, Pike County's SAIFI was 1.85, over three times the standard, resulting, in part, from the denial of two requests for major event exclusions occurring in May 2005. With these two incidents excluded, SAIFI would be reduced to 0.97, still well above the current standard. Pike also reports that temporary circuit configurations due to capital improvements increased the impact of interruption on its system.

On June 9, 2004, Pike County filed comments to the Commission's Order<sup>26</sup> of May 11, 2004, which were treated as a petition to amend its benchmarks.<sup>27</sup> Pike County submits that the five years of data used to establish reliability benchmark values disadvantages Pike County since such data fails to account adequately for the small size of its service area, the configuration of the system and the potential for volatility in reliability index performance. A settlement agreement was reached by all of the parties to the proceeding. The matter was subsequently remanded to the Commission's Office of Administrative Law Judge for further development of the record regarding the re-calculation of Pike County's reliability benchmarks.

A related matter involves a review of the exclusion of certain major events from the calculation of the historical benchmarks. Pike has submitted additional information which may require a further revision of the benchmarks contained in the settlement agreement.<sup>28</sup>

The graph below shows the distribution of causes of service outages occurring during 2005 as a percentage of total outages. The major cause of service outages is tree contact with 39 interruptions (43.3%) affecting 3,160 customers (38.9%) for a total of 540,843 minutes (61.1%). Improvement efforts in this area include a four-year, cycle-based tree clearance program. A "cycle-buster" trimming program was also in effect to address key areas where recurring outages have occurred. Pike County has not identified which outages are related to trees on the right-of-way or off the right-of-way.

The second largest contributor to service outages in 2005 was equipment failure, with 20 incidents (22.2%) affecting 3,691 customers (45.4%) for a total of 212,029 minutes (23.9%).

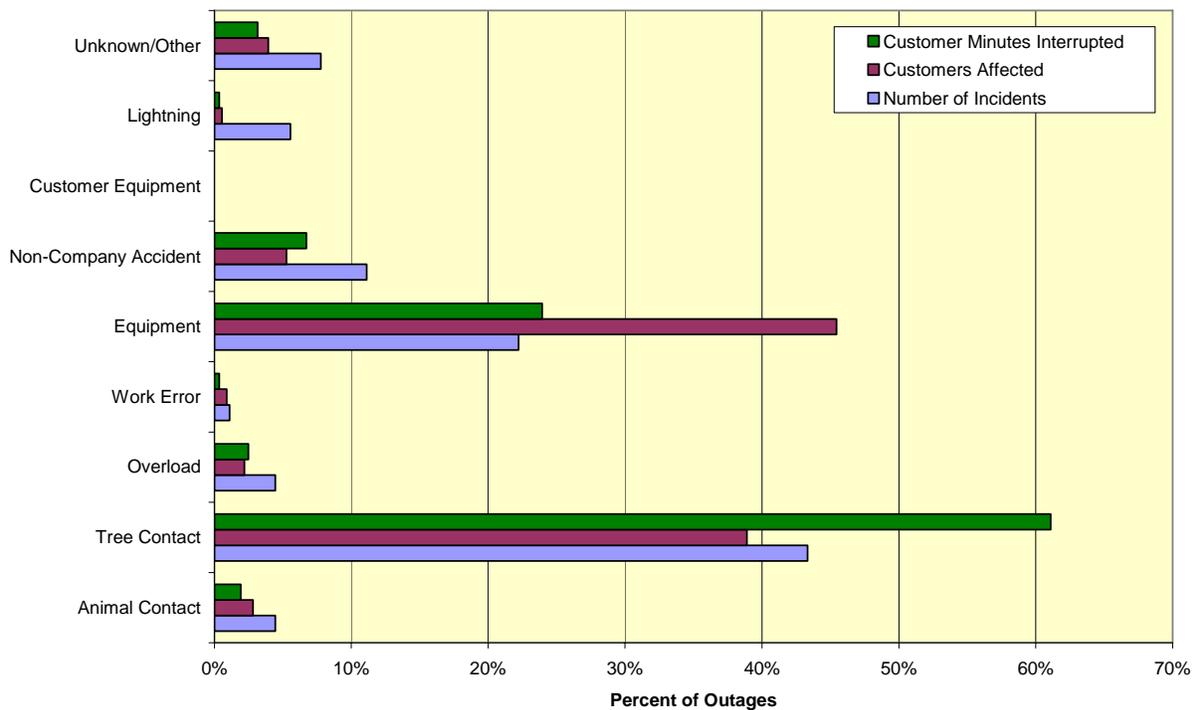
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<sup>26</sup> Docket No. M-00991220.

<sup>27</sup> Docket No. M-00991220F0002.

<sup>28</sup> Docket Nos. M-00991220F2005 and P-00052174.

**Pike County Light & Power Company  
2005 Outage Causes**



### Wellsboro Electric Company

Wellsboro’s overall reliability performance in 2005 was better than its performance in 2004. While Wellsboro’s CAIDI of 105 minutes was higher than last year’s figure, it was still better than the benchmark of 124 minutes. SAIFI improved substantially, decreasing to 1.37, 17.5% better than the standard.

In 2005, Wellsboro experienced five major events. The calculations for the reliability indices exclude outage data related to these events, which were approved by the Commission.

June 6, 2005: information not available.

July 26, 2005: severe thunderstorm; 601 customers affected; 739,230 interruption minutes excluded.

October 23, 2005: animal contact in substation; 1,866 customers affected; 164,208 interruption minutes excluded.

November 9, 2005: severe weather event; 1,336 customers affected; 200,400 interruption minutes excluded.

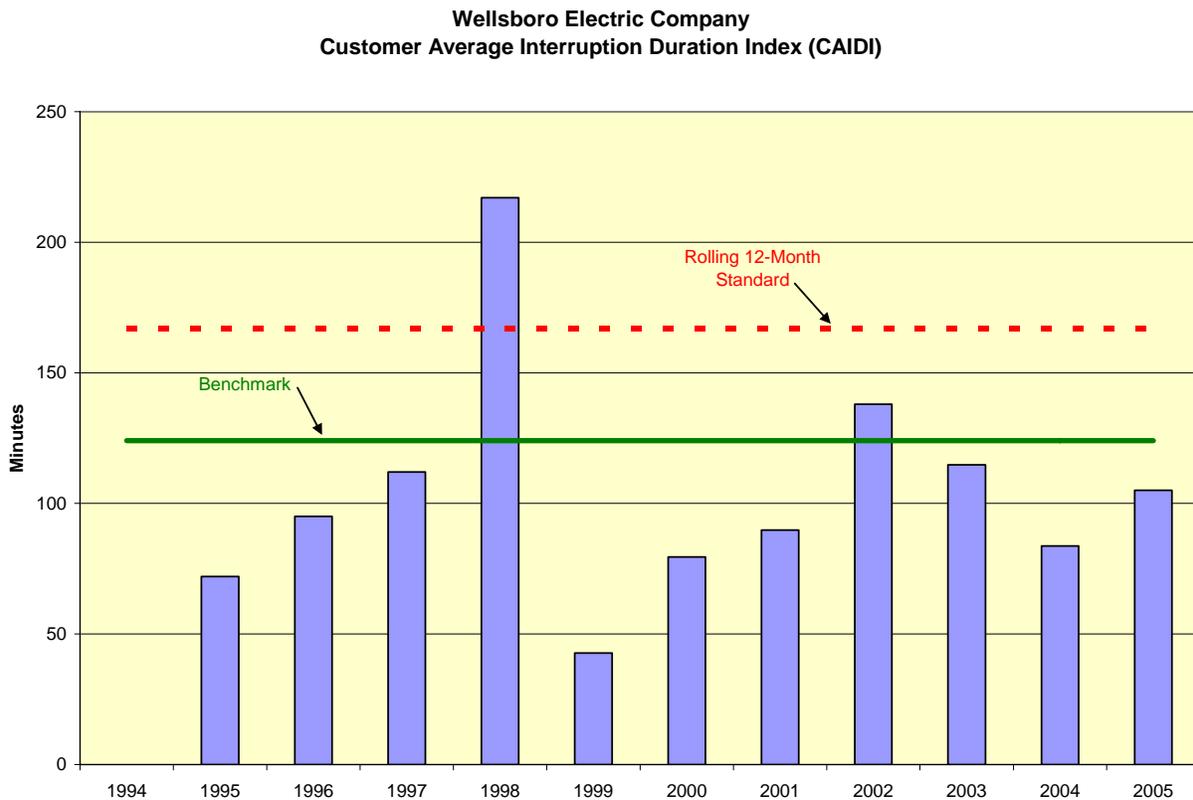
November 28, 2005: severe weather event; 3,193 customers affected; 240,564 interruption minutes excluded.

Two other major event exclusion requests were denied. The denial for exclusion of a major outage occurring on December 23, 2005, was appealed on January 6, 2006.

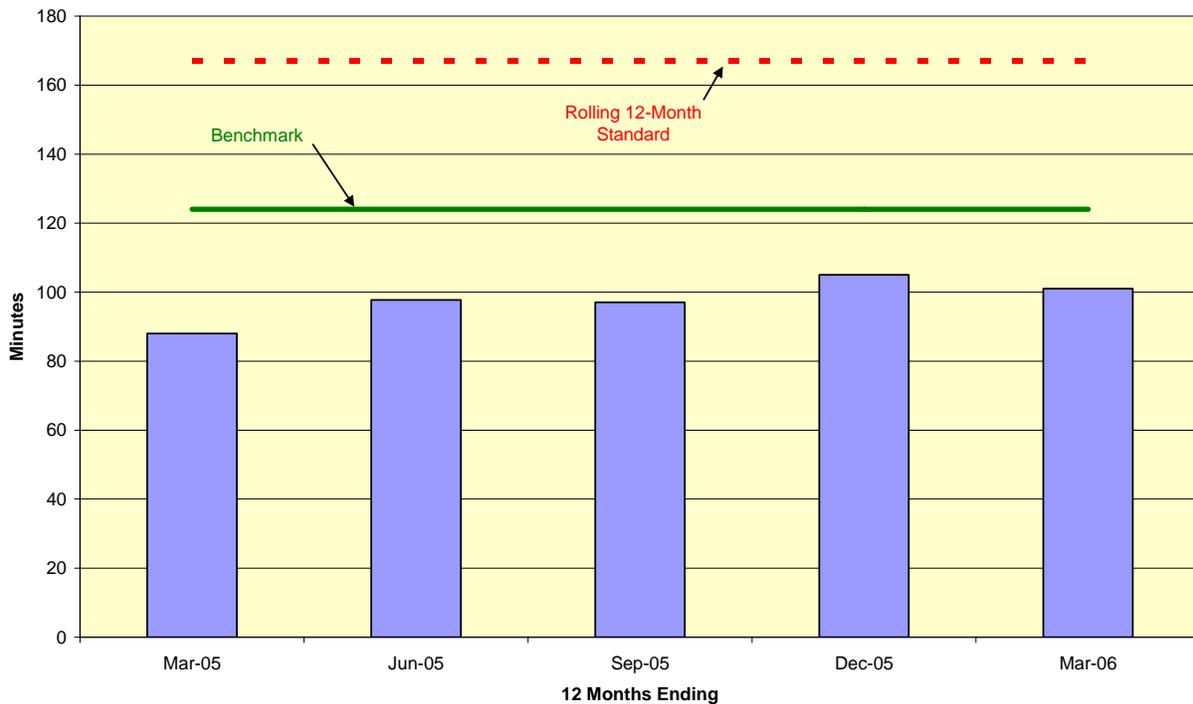
For the 2005 calendar year, Wellsboro filed one outage report pursuant to 52 Pa. Code § 67.1.

In 2005, Wellsboro experienced 8,083 customer interruptions with a total duration of 846,031 customer minutes.

The following graphs depict trends in the duration of service interruptions for the Wellsboro system from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.



**Wellsboro Electric Company  
Customer Average Interruption Duration Index (CAIDI)**

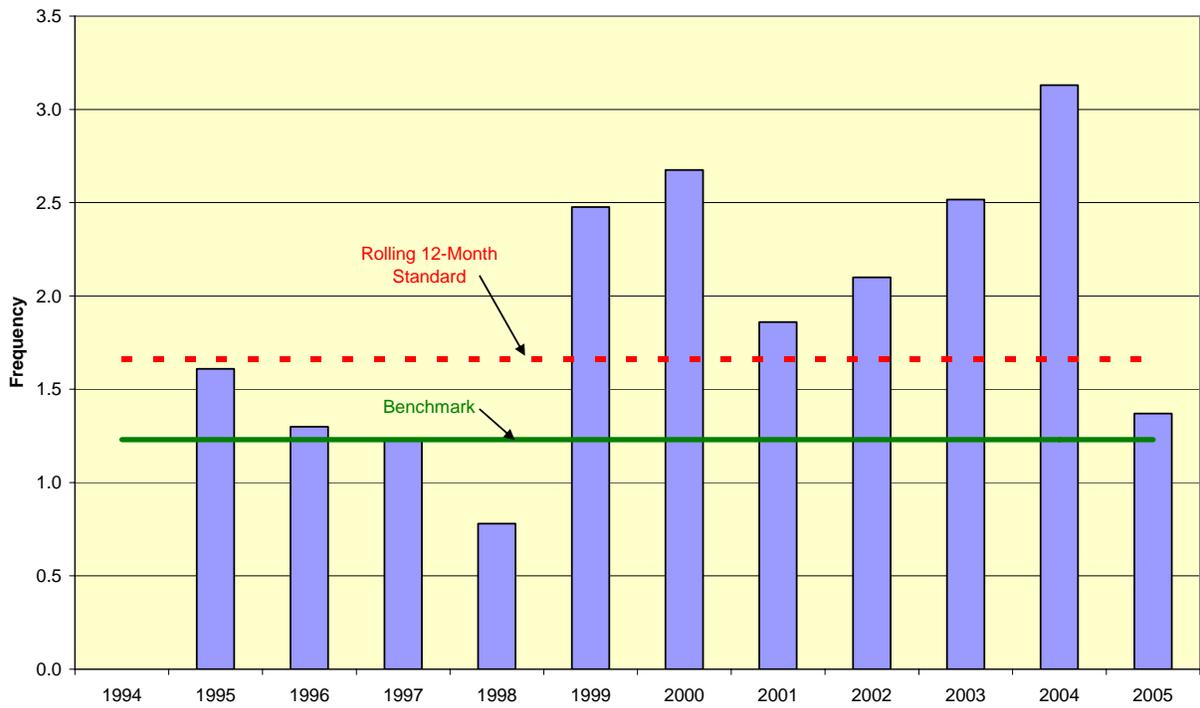


Wellsboro’s average interruption duration increased from 84 minutes in 2004 to 105 minutes in 2005, or 15.3% better than the benchmark. For the 12 months ending March 2006, CAIDI was 101 minutes.

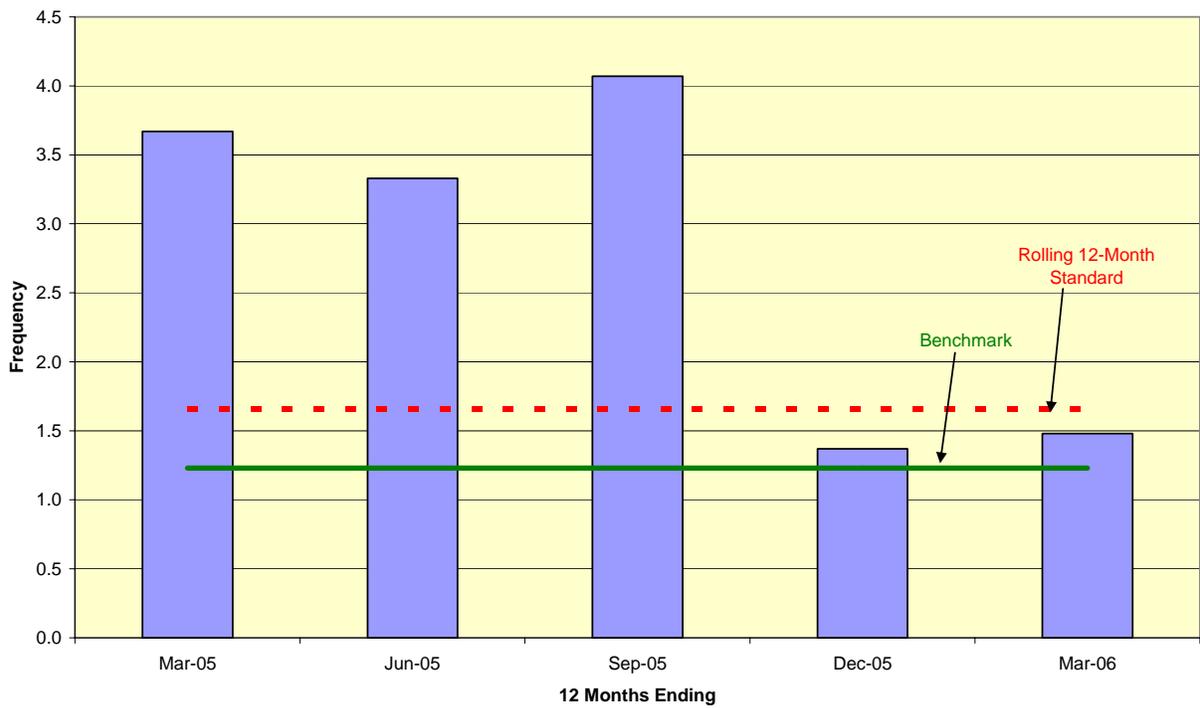
The next two graphs show trends in the frequency of service interruptions from 1994 to 2005, and for the four quarters of 2005 and the first quarter of 2006, compared to the established benchmarks and standards.

After a period of years when Wellsboro’s SAIFI values were above the standard, Wellsboro’s SAIFI is now at an acceptable level. Similar performance is seen in the 12-month rolling average for the period ending March 2006, with a SAIFI of 1.48.

**Wellsboro Electric Company  
System Average Interruption Frequency Index (SAIFI)**

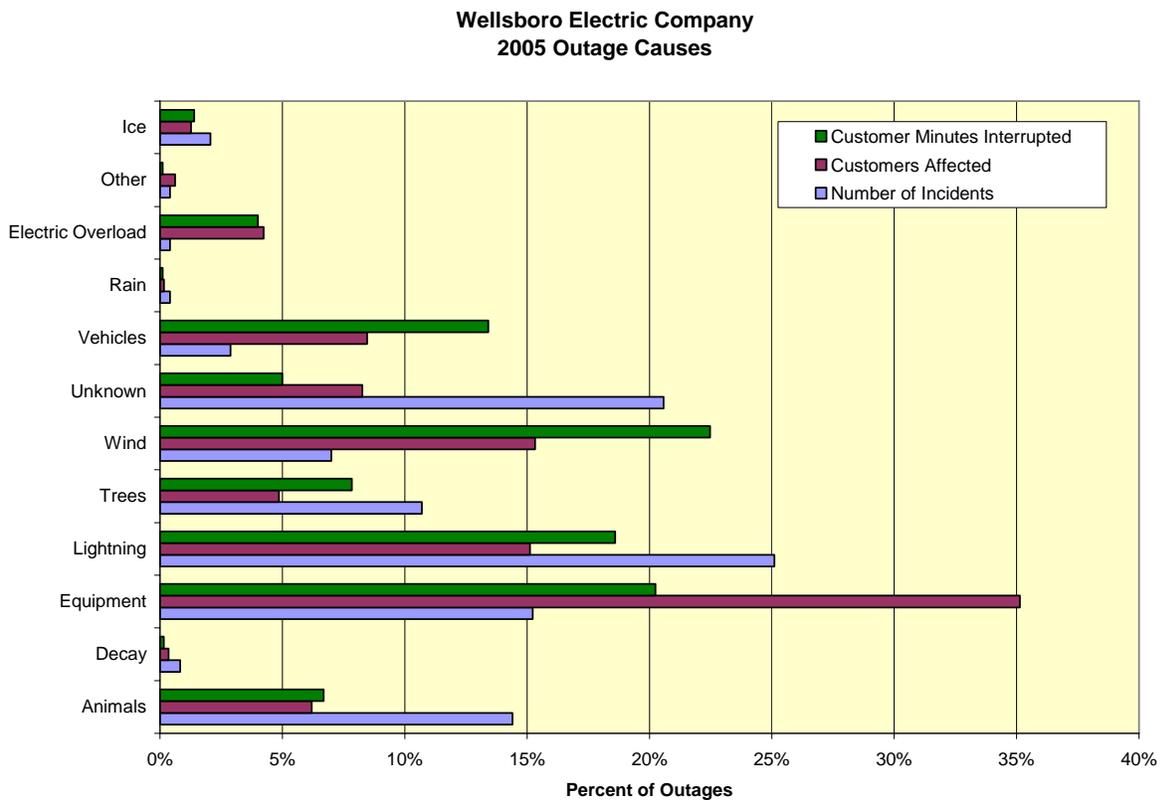


**Wellsboro Electric Company  
System Average Interruption Frequency Index (SAIFI)**



Wellsboro’s new OMS tracks causes of outages and is used to identify circuits or individual customers that are experiencing multiple outages due to animal contact, trees etc. This data assists Wellsboro in preventing future outages from occurring.

The graph below shows the distribution of causes of service outages occurring during 2005 as a percentage of total outages. Lightning caused 25.1% of the outages, representing 15.1% of customers affected and 18.6% of interruption minutes. Equipment failure was responsible for 15.2% of incidents, 35.1% of customers affected and 20.2% of interruption minutes. Wind was identified as being responsible for 7.0% of incidents, 15.3% of customers affected and 22.5% of interruption minutes.



## SECTION 4 – INSPECTION AND MAINTENANCE STANDARDS

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In an Order entered on August 29, 2002 at Docket No. M-00021619, the Commission adopted a Staff report, entitled *Inspection and Maintenance Study of Electric Distribution Systems*. The Staff report found that, based on outage statistics, the greatest impact an EDC can make in improving its service performance is by properly maintaining its equipment and implementing a reasonable vegetation control program. At that time, however, the Commission declined to require specific inspection and maintenance (“I&M”) standards.

In lieu of prescriptive I&M standards, the Commission directed the EDCs to include in their annual reliability reports documentation on inspection and maintenance activities, including vegetation management, distribution and substation maintenance activity and capital improvement projects. The EDCs must provide a comparison of established inspection and maintenance goals and objectives versus actual results achieved during the year.

New information arising out of the blackout in August 2003 formed a basis for further evaluating the need for inspection and maintenance standards. One of the causes of the blackout was the failure to adequately manage tree growth along transmission lines.<sup>29</sup> In the wake of the blackout, the Federal Energy Regulatory Commission (FERC) commissioned a study of utility vegetation management practices. The resulting FERC report to Congress recommended that oversight organizations should work with the utilities, the utility vegetation management industry and other stakeholders to develop measurable and achievable program objectives to identify what can be done to reduce the likelihood of a recurrence of tree and power line conflicts.<sup>30</sup>

In light of the national attention to inspection and maintenance standards with particular regard to vegetation management procedures, the Commission initiated a rulemaking proceeding to consider revisions to Chapter 57 of the Code relating to electric service reliability. A Proposed Rulemaking Order was adopted on April 20, 2006. Interested parties have 30 days from the date of publication in the *Pennsylvania Bulletin* to file written comments.<sup>31</sup> The purpose of this proceeding is to evaluate comments from interested parties to determine the type and scope of inspection and maintenance standards that would be appropriate.

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<sup>29</sup> *Final Report on the August 14 Blackout in the U.S. and Canada*, U.S.—Canada Power System Outage Task Force, pp. 17, 57-64 (April 2004).

<sup>30</sup> “Utility Vegetation Management and Bulk Electric Reliability Report from the Federal Energy Regulatory Commission, September 7, 2004.

<sup>31</sup> Docket No. L-00040167.

## SECTION 5 – CONCLUSION

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Over the past few years, electric service reliability has been under increased scrutiny in Pennsylvania. The Electricity Generation Customer Choice and Competition Act mandates that the Commission ensure that levels of reliability that existed prior to the restructuring of the electric utility industry continue in the new competitive markets.

In response to this mandate, the Commission adopted reporting requirements designed to ensure the continuing safety, adequacy and reliability of the generation, transmission and distribution of electricity in the Commonwealth. The Commission also established reliability benchmarks and standards with which to measure the performance of each electric distribution company (EDC).

Given the uncertainty of weather and other events that can affect reliability performance, the Commission has stated that EDCs should set goals to achieve benchmark performance or better to allow for those times when unforeseen circumstances push the indices above the benchmark. In recognition of these unforeseen circumstances, the Commission set the performance standard as the minimum level of EDC reliability performance. The standard is the level of performance beyond which the company must either justify its poor performance or provide information on the corrective measures it will take to improve performance. Performance that does not meet the standard for any reliability measure may be the threshold for triggering additional scrutiny and potential compliance enforcement actions.

In 2005, two of the 11 EDCs failed to meet their rolling 12-month performance standards for the average duration of service outages per affected customer, while six EDCs performed better than the benchmark. Four EDCs failed to meet their rolling 12-month performance standards for the average frequency of service outages per customer, while five EDCs performed better than the benchmark. Five EDCs petitioned the Commission to amend their performance benchmarks and standards. The Commission adjusted benchmarks and standards for four of these EDCs. Depending on the outcome of the remaining proceeding, our view of the acceptability of the remaining EDC's past performance may change. In the interim, we will continue to closely monitor the reliability performance of all the EDCs.

In addition to monitoring the reliability performance of the EDCs, the Commission has initiated a rulemaking proceeding to determine the type and scope of inspection and maintenance standards that would be appropriate for electric transmission and distribution systems.

## APPENDIX A – BENCHMARKS AND STANDARDS

EDC	Reliability Indices	Benchmark	Rolling 12-Month Standard	Rolling 3-Yr Avg. Standard
Allegheny Power *	SAIFI	1.05	1.26	1.16
	CAIDI	170	204	187
	SAIDI	179	257	217
Duquesne Light	SAIFI	1.17	1.40	1.29
	CAIDI	108	130	119
	SAIDI	126	182	153
Met-Ed **	SAIFI	1.15	1.38	1.27
	CAIDI	117	140	129
	SAIDI	135	194	163
Penelec **	SAIFI	1.26	1.52	1.39
	CAIDI	117	141	129
	SAIDI	148	213	179
Penn Power **	SAIFI	1.12	1.34	1.23
	CAIDI	101	121	111
	SAIDI	113	162	136
PECO	SAIFI	1.23	1.48	1.35
	CAIDI	112	134	123
	SAIDI	138	198	167
PPL	SAIFI	0.98	1.18	1.08
	CAIDI	145	174	160
	SAIDI	142	205	172
UGI	SAIFI	0.83	1.12	0.91
	CAIDI	169	228	186
	SAIDI	140	256	170
Citizens	SAIFI	0.20	0.27	0.22
	CAIDI	105	141	115
	SAIDI	21	38	25
Pike County	SAIFI	0.39	0.53	0.43
	CAIDI	178	240	196
	SAIDI	69	127	84
Wellsboro	SAIFI	1.23	1.66	1.35
	CAIDI	124	167	136
	SAIDI	153	278	185

\* Revised benchmarks and standards effective 7/20/06.

\*\* Revised benchmarks and standards effective 2/17/06.