

Baltimore Gas and Electric Company
COMAR 20.50.07.06 Reporting of Reliability Indices – CY 2003

In June 2003, BGE implemented a new Outage Management System. For the first five months of 2003, data was collected using BGE's legacy Electric Trouble Operating System. For the remaining 7 months of 2003, data was collected using the new Outage Management System. With this implementation, BGE began experiencing an increase in the number of outage events recorded, which has led to an increase in customer interruptions and customer hours lost. BGE believes that this increase is attributable to the new system's enhanced data collection capabilities. This is similar to what other utilities have experienced when implementing a new outage management system. In fact, this phenomena was previously recognized by Staff as described in page 4 of the Final Report of the Operation and Performance Standards Working Group in Case No. 8826 (dated 4/25/2000) which states:

"Also, changes in the methods used to capture outage data would be a major contributor to the irrelevance of a year-to-year comparison.....In 1999, Allegheny Power implemented an automated Outage Management System (OMS) to more accurately capture outage data. The reliability indices calculated in 1998 and 1999 may be significantly different due solely to significant change in the OMS. This same situation is likely to occur with several other electric utilities that are considering a new or upgraded OMS."

(1) System-Wide Indices. A utility shall report SAIDI, SAIFI, and CAIDI for its system consisting of all feeders originating in Maryland. The indices shall be calculated and reported with two sets of input data.

(a) All interruption data;

*SAIFI – 2.69
SAIDI – 37.79
CAIDI – 14.04*

Note: System-Wide Indices are calculated using IEEE Std. 1366-1998.

(b) All interruption data minus major event interruption data.

*SAIFI – 1.74
SAIDI – 4.35
CAIDI – 2.51*

Data in (b) excludes customer interruptions from three Major events experienced during 2003, further detailed in Section E.

(2) District Indices. A cooperatively-owned utility shall provide SAIDI, SAIFI, and CAIDI for each operating district and identify the operating district with the poorest reliability. The indices shall be calculated and reported with two sets of input data.

(a) All interruption data;

(b) Major event interruption data excluded.

Requirements (a) & (b) are not applicable to BGE since BGE is an Investor Owned Utility.

(3) Feeder Indices. An investor-owned utility shall provide SAIDI, SAIFI, and CAIDI for 2% of feeders or 10 feeders, whichever is more, serving at least one Maryland customer that are identified by the utility as having the poorest reliability. The indices shall be calculated and reported with 2 sets of input data.

(a) All interruption data;

13.8 kV Feeder	Substation	CRI	SAIFI	SAIDI	CAIDI
7806	Carroll	747.21	2.35	74.91	31.86
7808	Carroll	552.64	3.62	111.48	30.82
7614	Wilde Lake	439.08	2.80	134.13	47.92
8366	Pleasant Hills	427.51	4.02	61.24	15.24
7003	Center	367.10	4.60	205.94	44.74
7043	Hillen Road	359.60	4.04	48.32	11.97
7438	Priest Bridge	348.31	6.75	137.78	20.42
7495	Cedar Park	334.59	2.26	126.38	55.83
7531	Middleborough	330.69	2.31	94.42	40.79
7401	NAJ	310.10	12.77	537.97	42.13
7493	Cedar Park	299.24	3.65	77.93	21.34
7008	Center	289.28	3.31	61.23	18.49
7473	Glenn Dale	288.51	2.13	72.50	33.99
8301	Round Bay Modular	272.79	1.84	74.26	40.41
7501	Cowenton	258.03	6.48	38.51	5.94
7392	Lansdowne	256.13	2.56	35.80	13.99
7486	Tyler Avenue	250.97	2.55	71.51	28.07
8453	NAJ	248.66	5.57	105.23	18.89
8661	Mount Wilson	232.58	2.01	68.73	34.18

4.4 kV Feeder	Substation	CRI	SAIFI	SAIDI	CAIDI
4930	Cherry Hill	196.16	5.34	40.19	7.53
4801	Calverton	156.33	4.93	112.70	22.73
4703	South Baltimore	124.62	3.04	19.68	6.46

(b) All interruption data minus major event interruption data:

BGE's "Worst Feeder Program" consists of plans to improve reliability performance for the top 2% of the 13.8 kV distribution feeders (19 out of 916 total 13.8 kV distribution feeders) and 2% of the 4.4 kV distribution feeders (3 out of 131 total 4.4 kV distribution feeders) based on all interruption data minus major event interruption data.

13.8 kV Feeder	Substation	CRI	SAIFI	SAIDI	CAIDI
7621	Wilde Lake	146.84	3.91	13.82	3.53
7501	Cowenton	138.11	4.84	8.48	1.75
7376	Lipins Corner	124.79	3.98	17.89	4.50
7043	Hillen Road	138.36	1.87	4.98	2.66
7176	Harrisonville	131.04	2.22	5.15	2.31
7375	Lipins Corner	130.82	5.15	6.07	1.18
7806	Carroll	106.55	1.16	1.92	1.66
7005	Center	104.21	2.19	2.70	1.23
7393	Lansdowne	99.93	1.28	1.47	1.15
7070	Joppatowne	85.54	6.25	5.89	0.94
7609	Wilde Lake	83.22	3.11	3.47	1.11
7240	Finksburg	83.79	11.74	15.03	1.28
7410	Cedar Park	83.50	2.33	5.05	2.17
8216	Frizzelburg Modular	75.94	3.41	7.91	2.32
7556	Middle River	75.40	2.22	3.50	1.58
7811	Carroll	75.19	1.28	2.12	1.65
8366	Pleasant Hills	74.52	1.97	4.12	2.09
7348	Lipins Corner	72.47	1.72	4.03	2.34
7101	Mount Washington	71.22	5.95	15.52	2.61

4.4 kV Feeder	Substation	CRI	SAIFI	SAIDI	CAIDI
4414	Woodbrook	65.52	4.33	13.42	3.10
4703	South Baltimore	61.23	0.98	1.68	1.71
4823	Clifton Park	41.27	7.23	9.85	1.36

Identification of Operating District and Feeders with Poorest Reliability

- (1) The method used by a utility to identify the district and feeders with poorest reliability shall be approved by the Commission and be included in the report.

In order to determine which distribution feeders and areas have the poorest performance, BGE utilizes a Composite Reliability Index (CRI). In the event that two feeders have identical composite reliability indices, the feeders are then ranked based on the most recent year's feeder SAIFI. The formula for the index is:

$$CRI = Z \cdot N \cdot P \cdot [W_1 \cdot (F+D)_{2002} + W_2 \cdot (F+D)_{2003}]$$

Where N = Number of customers
 P = % of customer interruptions due to lockouts over two most recent years
 F = SAIFI divided by System SAIFI
 D = SAIDI divided by System SAIDI
 W = Weighting Factors ($W1 = 0.3$, $W2 = 0.7$)
 Z = Scaling factor ($Z = 0.01$)

(2) Feeders included in the report, which serve customers in Maryland and one or more bordering jurisdiction, shall be identified. The report shall include the percentage of customers located in Maryland and the percentage of customers located in bordering jurisdictions.

Not applicable to BGE. BGE has no feeders outside Maryland.

(3) Feeders shall not be included as having the poorest reliability in two consecutive reports.

No feeders listed in the 2003 report as having poor reliability are included in this report.

E. Major Event Interruption Data. The report shall include the time periods during which major event interruption data was excluded from the indices, along with a brief description of the interruption causes during each time period.

BGE experienced three Major events in CY 2003

A Major Storm affected BGE's electric system on August 26th, and August 27th. This event was caused by two separate thunderstorm systems, the first of which entered the service territory in Howard and Carroll Counties, then moved in a southeasterly direction through the territory. The cell of thunderstorms contained heavy rains, very high wind, and a large amount of lightning. On August 27th at approximately 6:00 PM, a second storm rolled through the western and southern territory. For this event, interruption data has been excluded from August 26th at 4 PM, until August 29th at 12 PM.

Hurricane Isabel hit BGE's service territory on Thursday September 18th and Friday September 19th. The most significant impacts to BGE's electric system took place between Thursday afternoon and Friday afternoon when sustained winds of 40 mph and gusts exceeding 60 mph were experienced. BGE also experienced a storm the night of Monday, September 22nd. For this entire event, interruption data has been excluded from September 18th at 10:30 AM, until September 26th at 11 PM.

A Major Storm affected BGE's electric system on November 13th. This event was caused by a strong cold front which clashed with unseasonably warm air in central Maryland producing sustained winds in the 30 to 40 mph range with gusts as high as 65 mph for the next 30 hours. The winds, combined with the many trees and limbs left in precarious positions after Hurricane Isabel, resulted in fallen trees and limbs that caused significant damage to BGE's distribution system. For this event, interruption data has been excluded from November 13th at 6:00 AM, until November 16th at 4 PM.

F. Actions for Operating District and Feeders with Poorest Reliability.

(1) A cooperatively-owned utility shall report remedial actions for the operating district with the poorest reliability. An investor-owned utility shall report remedial actions for all feeders reported under C.(3) of this regulation.

During 2004, BGE will review the design for each feeder reported under this section to identify potential improvements. BGE will also trim the trees on each feeder (as needed), conduct a thorough equipment inspection on each feeder and correct any deficiencies found during the inspections. These inspections will permit the identification of potential outage causes, and will, as a result, reduce the number of customer interruptions due to unknown causes. Where the feeder interruptions were the result of underground conductor failures, the failed sections were isolated during the service restoration process, and have since been repaired or replaced. In some cases, underground cable replacement will be performed if the underground conductor experiences an excessive number of failures. These replacements have been noted below.

Feeder 7621

Feeder 7621 supplies approximately 1,550 customers in the Columbia area of Howard County. During 2003, 34% of the customer interruptions were caused by lightning, 28% were caused by underground conductor failures, 27% caused by trees and 11% were caused by miscellaneous events. Each failed underground conductor was repaired or replaced during 2003 as part of the service restoration and repair process. In addition, BGE has identified one cable replacement opportunity that will be completed in 2004. Tree trimming on this feeder was most recently completed in June 2002, and an inspection performed in 2004 has determined that localized tree trimming is needed and will be performed in 2004. BGE also conducted an overhead equipment and conductor inspection and corrected the related deficiencies in 2003.

Feeder 7501

Feeder 7501 supplies approximately 1,600 customers in the White Marsh, Chase and Middle River areas of Baltimore County. During 2003, 79% of the customer interruptions were due to unknown causes and 21% were caused by equipment failures. During 2002, BGE trimmed trees along the entire length of the feeder (completed 5/02) and an inspection performed in 2004 has determined that localized tree trimming is needed and will be performed in 2004. BGE also conducted an overhead equipment and conductor inspection and corrected the related deficiencies in 2003. Opportunities were identified for additional fusing and work orders have been issued for their installation. A new feeder, 8523, is planned to go into service in December 2004 that will pick up some of the load on this feeder, reducing exposure and offering additional tie points.

Feeder 7376

Feeder 7376 supplies approximately 1,890 customers in the Harundale and Glen Burnie areas of Anne Arundel County. During 2003, 51% of the customer interruptions were due to unknown causes, 28% were caused by underground conductor failures, 16% were caused by trees and 5% were caused by miscellaneous events. Each failed underground conductor was repaired or replaced during 2003 as part of the service restoration and repair process. BGE also conducted an overhead equipment and conductor inspection in 2003 and all related deficiencies were corrected in 2003. During 2003, BGE trimmed trees along the entire length of the feeder as well as performed aggressive tree removals along the 3 phase main (completed 12/03).

Feeder 7043

Feeder 7043 supplies approximately 2,560 customers in the Anneslie and Idlewilde areas of Baltimore County. During 2003, 78% of the customer interruptions were caused by lightning, 13% were caused by miscellaneous events and 9% were caused by trees. Tree trimming on this feeder was most recently completed September 2002, and an inspection performed in 2004 has determined that localized tree trimming and overhang removals are needed and will be performed in 2004. BGE conducted an overhead equipment and conductor inspection and is in the process of correcting related deficiencies. Opportunities were identified for additional fusing and work orders have been issued for their installation.

Feeder 7176

Feeder 7176 supplies approximately 2,990 customers in the Randallstown area of Baltimore County. During 2003, 45% of the customer interruptions were caused by underground conductor failures, 46% of the customer interruptions were caused by unknown events, 5% were caused by miscellaneous events and 4% were caused by wildlife. Each failed conductor was repaired or replaced during 2003 as part of the service restoration and repair process. In addition, BGE has identified one cable replacement opportunity that will be completed in 2004. During 2003, BGE trimmed trees along the entire length of the feeder as well as performing aggressive removals along the 3 phase main (completed 11/03). BGE also conducted an overhead equipment and conductor inspection and corrected the related deficiencies in September, 2003. Fuse coordination issues were identified and work orders have been issued to correct the deficiency. To improve outage restoration times and reduce the number of sustained interruptions, remotely operable sectionalizing and tie reclosers will be installed as part of BGE's Distribution Automation program.

Feeder 7375

Feeder 7375 supplies approximately 1,750 customers in the Stony Creek area of Anne Arundel County. During 2003, 68% of the customer interruptions were due to equipment failures, 20% were caused by trees, 8% were due to unknown causes and 4% caused by wildlife. Tree trimming on this feeder was last performed in October 2000 and is scheduled for cycle trimming in 2004 with aggressive removals being targeted. BGE conducted an overhead equipment and conductor inspection and is in the process of correcting related deficiencies.

Feeder 7806

Feeder 7806 supplies approximately 4,100 customers in the Edmondson Village and Rognel Heights areas of Baltimore City. During 2003, 83% of the customer interruptions were caused by an underground conductor failure, 8% were caused by trees, 5% were caused by miscellaneous events and 4% were due to equipment failures. The failed conductor was repaired during 2003 as part of the service restoration and repair process. Tree trimming on this feeder was most recently completed in February 2002 and an inspection performed in 2004 determined that no additional trimming is necessary at this time. BGE also conducted an overhead equipment and conductor inspection and corrected the related deficiencies in February, 2004. Opportunities appear to exist for the installation of additional fusing, which is currently being studied by BGE and may be installed if warranted.

Feeder 7005

Feeder 7005 supplies approximately 2,690 customers in the Sandtown and Druid Heights areas of Baltimore City. During 2003, 48% of the customer interruptions were caused by underground conductor failures, 45% were due to unknown causes and 7% were caused by miscellaneous events. Each failed conductor was repaired or replaced during 2003 as part of the service restoration and repair process. During 2003, BGE trimmed trees along the entire length of the feeder and performed aggressive removals along the 3 phase main (completed 12/03). BGE conducted an overhead equipment and conductor inspection and is in the process of correcting related deficiencies.

Feeder 7393

Feeder 7393 supplies approximately 2,640 customers in the Baltimore Highlands areas of Baltimore County. During 2003, 92% of the customer interruptions were caused by unknown events, 6% were caused by public interferences (pole hit) and 2% were due to unknown causes. Tree trimming on this feeder was last performed in December 1999 and is scheduled for cycle trimming in 2004 with aggressive removals being targeted. BGE also conducted an overhead equipment and conductor inspection and corrected the related deficiencies in July, 2003. Opportunities appear to exist for the installation of additional fusing, which is currently being studied by BGE and may be installed if warranted. To improve outage restoration times and reduce the number of sustained interruptions, remotely operable sectionalizing and tie reclosers will be installed as part of BGE's Distribution Automation program.

Feeder 7070

Feeder 7070 supplies approximately 1,510 customers in the Joppatowne area of Harford County. During 2003, 80% of the customer interruptions were due to equipment failures and 20% were caused by underground conductor failures. Each failed underground conductor was repaired or replaced during 2003 as part of the service restoration and repair process. In addition, BGE has identified two cable replacement opportunities that will be completed in 2004. Tree trimming on this feeder was most recently completed in October 2003. BGE conducted an overhead equipment and conductor inspection and is in the process of correcting related deficiencies. To improve outage restoration times and reduce the number of sustained interruptions, remotely operable sectionalizing and tie reclosers will be installed as part of BGE's Distribution Automation program.

Feeder 7609

Feeder 7609 supplies approximately 1,550 customers in the Columbia area of Howard County. During 2003, 61% of the customer interruptions were caused by damage to underground cables as the result of dig-ins, 38% were caused by underground conductor failures and 1% was caused by miscellaneous events. BGE conducted an overhead equipment and conductor inspection and is in the process of correcting related deficiencies. Each failed conductor was repaired or replaced during 2003 as part of the service restoration and repair process. Tree trimming on this feeder was completed in March, 2004.

Feeder 7240

Feeder 7240 supplies approximately 1,250 customers in the Reisterstown and Boring areas of Baltimore County. During 2003, 42% of the customer interruptions were caused by trees, 20% were caused by equipment failure, 21% were caused by underground conductor failures, 11% were caused by miscellaneous events and 6% were caused by unknown events. Each failed conductor was repaired or replaced during 2003 as part of the service restoration and repair process. In addition, BGE will investigate the need for additional underground cable replacements on this feeder to address potential future conductor failures. Tree trimming on this feeder was most recently completed in December 2000, and is scheduled for cycle trimming in 2004 with aggressive removals being targeted. BGE conducted an overhead equipment inspection and is in the process of correcting related deficiencies. To improve outage restoration times and reduce the number of sustained interruptions, remotely operable sectionalizing and tie reclosers will be installed as part of BGE's Distribution Automation program.

Feeder 7410

Feeder 7410 supplies approximately 1725 customers in the Annapolis area of Anne Arundel County. During 2003, 51% of the customer interruptions were caused by underground conductor failures, 41% were caused by equipment failures and 8% were caused by trees. Each failed conductor was repaired or replaced during 2003 as part of the service restoration and repair process. During 2003, BGE trimmed trees along the entire length of the feeder as well as performing aggressive removals along the 3 phase main (completed 12/03). BGE also conducted an overhead equipment and conductor inspection and corrected the related deficiencies in February, 2004

Feeder 8216

Feeder 8216 supplies approximately 1,825 customers in the Frizzelburg area of Carroll County. During 2003, 48% of the customer interruptions were caused by equipment failures, 40% was due to unknown causes, 9% were caused by trees and 3% were caused by miscellaneous events. BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies in February, 2004. Tree trimming on this feeder was most recently completed in May 2002, and an inspection performed in 2004 has determined that localized tree trimming and removals are needed and will be performed in 2004.

Feeder 7556

Feeder 7556 supplies approximately 2,465 customers in the Middle River area of Baltimore County. During 2003, 56% of the customer interruptions were caused by overhead conductor failures, 40% were caused by public interferences (pole hit and dig ins), 2% were caused by miscellaneous events and 2% were caused by trees. BGE conducted an overhead equipment inspection and corrected the related deficiencies in February, 2004. Tree trimming on this feeder was most recently completed in June 2002, and an inspection performed in 2004 has determined that localized tree trimming and removals are needed and will be performed in 2004.

Feeder 7811

Feeder 7811 supplies approximately 4010 customers in the Uplands Park area of Baltimore City. During 2003, 59% of the customer interruptions were caused by equipment failures, 14% were caused by trees, 12% were caused by miscellaneous events, 8% were due to unknown causes, and 7% were caused by a pole hit. Tree trimming on this feeder was most recently completed in November 2002, and an inspection performed in 2004 has determined that localized tree trimming and removals are needed and will be performed in 2004. BGE conducted an overhead equipment inspection and corrected the related deficiencies in August 2003.

Feeder 8366

Feeder 8366 supplies approximately 2,450 customers in the Owings Mills area of Baltimore County. During 2003, 47% of the customer interruptions were caused by equipment failures, 49% were caused by a pole hit, 2% were caused by miscellaneous events, and 2% were caused by trees. Tree trimming on this feeder was most recently completed in April 2002, and will be trimmed in 2004 with aggressive removals being targeted. BGE conducted an overhead equipment and conductor inspection and is in the process of correcting related deficiencies.

Feeder 7348

Feeder 7348 supplies approximately 2,220 customers in the Marley Creek area of Anne Arundel Baltimore County. During 2003, 55% of the customer interruptions were caused by underground conductor failures, 14% were caused by equipment failures, 28% were caused by lightning, 2% were caused by trees and 1% was caused by miscellaneous events. Each failed conductor was repaired or replaced during 2003 as part of the service restoration and repair process. In addition, BGE has identified one cable replacement opportunity that will be completed in 2004. Tree trimming on this feeder was most recently completed in October 2000, and is scheduled for cycle trimming in 2004 with aggressive removals being targeted. BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies in January, 2004.

Feeder 7101

Feeder 7101 supplies approximately 1,635 customers in the Ruxton and Rodgers Forge area of Baltimore County. During 2003, 34% of the customer interruptions were caused by trees, 33% were due to unknown causes, 19% were caused by equipment failures, 7% were caused by miscellaneous events and 7% were due to overhead conductor failures. During 2003, BGE trimmed trees along the entire length of the feeder as well as performing aggressive removals along the 3 phase main (completed 12/03). BGE conducted an overhead equipment and conductor inspection and is in the process of correcting related deficiencies.

Feeder 4414

Feeder 4414 supplies approximately 960 customers in the Reservoir Hill area of Baltimore City. During 2003, 20% of the customer interruptions were caused by underground conductor failures, 11% were caused equipment failures, and 69% were due to unknown causes. BGE conducted an overhead equipment and conductor inspection and is in the process of correcting related deficiencies. Tree trimming on this feeder was most recently completed in December 2002, and an inspection performed in 2004 has determined that no additional trimming is required at this time. Each failed conductor was repaired or replaced during 2003 as part of the service restoration and repair process.

Feeder 4703

Feeder 4703 supplies approximately 1,120 customers in the Curtis Bay area of Baltimore City. During 2003, one tree event locked out the feeder that caused 99% of the customer interruptions and 1% were caused by miscellaneous events. Tree trimming on this feeder was most recently completed in December 2002, and an inspection performed in 2004 has determined that no additional trimming is required at this time. BGE conducted an overhead equipment and conductor inspection and is in the process of correcting related deficiencies.

Feeder 4823

Feeder 4823 supplies approximately 629 customers in the Clifton Park area of Baltimore City. During 2003, 57% of the customer interruptions were caused by underground conductor failures, 14% were due to equipment failures and 29% were due to unknown causes. Each failed conductor was repaired or replaced during 2003 as part of the service restoration and repair process. BGE conducted an overhead equipment and conductor inspection and is in the process of correcting related deficiencies. Tree trimming on this feeder was most recently completed in December 2001, and an inspection performed in 2004 has determined that localized tree trimming and removals are needed and will be performed in 2004.

(2) Each utility shall briefly describe the actions taken or planned to improve reliability. When the utility determines that remedial actions are unwarranted, the utility shall provide justification for this determination.

BGE plans include remedial actions for all feeders identified as worst performers.

G. Evaluation of Remedial Actions. For the operating district and feeders identified as having the poorest reliability in an annual reliability indices report, the utility shall provide the following information in the next two annual reports.

(1) The annual report for the year following the identification of the operating district and feeders as having the poorest performance shall provide a brief description of the actions taken, if any, to improve reliability and the completion dates of these actions.

During 2003, BGE reviewed the design for each feeder reported under this section to identify potential improvements. BGE also trimmed the trees on each feeder as needed, conducted a thorough equipment and conductor inspection on each feeder and corrected any deficiencies found during the inspections. Those inspections permitted the identification of potential outage causes, and, as a result, reduced the number of customer interruptions due to unknown causes. Where the feeder interruptions were the result of underground conductor failures, the failed sections were isolated during the service restoration process, and have since been repaired or replaced. In some cases, underground cable replacement was performed if the underground conductor experienced an excessive number of failures.

Feeder 8008

Feeder 8008 supplies approximately 3,305 customers in the Roland Park, Hampden, and Waverly areas of Baltimore City. During 2002, 65% of the customer interruptions were caused by underground conductor failures, 29% were caused by trees and 6% were caused by miscellaneous events. Each failed underground conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE investigated the need for additional underground cable replacements on this feeder to address potential future conductor failures (no cable replacement opportunities were identified in 2003). Tree trimming on this feeder was most recently completed in September 2001, and an inspection performed in 2003 determined that localized tree trimming was needed (completed 5/03). BGE also conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 5/03).

Feeder 7593

Feeder 7593 supplies approximately 1,921 customers in the Parkville and Carney areas of Baltimore County. During 2002, 100% of the customer interruptions were caused by underground conductor failures. Each failed underground conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE replaced sections of underground cable on this feeder that had experienced excessive number of failures (completed 11/03). During 2002, BGE trimmed trees along the entire length of the feeder (completed 12/02) and conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 5/03).

Feeder 8446

Feeder 8446 supplies approximately 1,085 customers in the Heritage Harbour area of Anne Arundel County. During 2002, 46% of the customer interruptions were caused by underground conductor failures, 31% were caused by trees, 21% were caused by equipment failures and 2% were caused by miscellaneous events. Each failed underground conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE replaced sections of underground cable on this feeder that had experienced excessive number of failures (completed 5/03). BGE also conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 10/03). BGE also trimmed trees along the entire length of the feeder (completed 4/03). To improve outage restoration times and reduce the number of sustained interruptions, remotely operable sectionalizing and tie reclosers were installed as part of BGE's Distribution Automation program (completed 3/04).

Feeder 7414

Feeder 7414 supplies approximately 236 customers in the Annapolis Mall area of Anne Arundel County. During 2002, 100% of the customer interruptions were caused by underground conductor failures. Each failed conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE replaced sections of underground cable on this feeder that had experienced excessive number of failures (completed 11/03). Tree trimming on this feeder was most recently completed 2/00, and an inspection performed in 2003 determined that the entire feeder required tree trimming (completed 5/03). BGE conducted an overhead equipment and conductor inspection corrected the related deficiencies (completed 7/03).

Feeder 7602

Feeder 7602 supplies approximately 1,560 customers in the Village of Wilde Lake area of Howard County. During 2002, 99% of the customer interruptions were caused by underground conductor failures and 1% was caused by miscellaneous events. Each failed conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE replaced sections of underground cable on this feeder that had experienced excessive number of failures (completed 7/03). Since this feeder is entirely underground, BGE did not conduct an overhead equipment and conductor inspection.

Feeder 7161

Feeder 7161 supplies approximately 1,442 customers in the Cockeysville and Hunt Valley areas of Baltimore County. During 2002, 90% of the customer interruptions were due to unknown causes, 5% were caused by underground conductor failures and 5% were caused by miscellaneous events. Tree trimming on this feeder was most recently completed December 2000, and an inspection performed in 2003 determined that localized tree trimming was needed (completed 5/03). BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 6/03). BGE has identified one location where a fuse was incorrectly sized, and has replaced it with a correctly sized fuse (completed 3/03).

Feeder 8005

Feeder 8005 supplies approximately 2,403 customers in the Park Heights and Druid Hill Park areas of Baltimore City. During 2002, 87% of the customer interruptions were caused by underground conductor failures, 6% were caused by miscellaneous events and 7% were caused by public interferences (dig ins). Each failed conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE investigated the need for additional underground cable replacements on this feeder to address potential future conductor failures (no cable replacement opportunities were identified in 2003). BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 6/03) Tree trimming on this feeder was most recently completed in March 2002.

Feeder 8006

Feeder 8006 supplies approximately 3,770 customers in the Park Heights, Arlington, and Forest Park areas of Baltimore City. During 2002, 45% of the customer interruptions were caused by overhead conductor failures, 43% were caused by trees, 7% were due to unknown causes and 5% were caused by miscellaneous events. Tree trimming on this feeder was most recently completed September 2001, and an inspection performed in 2003 determined that localized tree trimming was needed (completed 4/03). BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 5/03). Because several outages in one area were caused by lightning, additional lightning arrestors were installed (completed 5/03).

Feeder 7002

Feeder 7002 supplies approximately 2,127 customers in the Charles Village and Waverly areas of Baltimore City. During 2002, 53% of the customer interruptions were caused by underground conductor failures, 36% were caused by public interferences (vehicle hit BGE equipment), 6% were caused by lightning and 5% were caused by miscellaneous events. Each failed underground conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE investigated the need for additional underground cable replacements on this feeder to address potential future conductor failures (no cable replacement opportunities were identified in 2003). Tree trimming on this feeder was most recently completed August 2000, and an inspection performed in 2003 determined that entire feeder required tree trimming (completed 5/03). BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 5/03).

Feeder 7221

Feeder 7221 supplies approximately 1,421 customers in the Reisterstown area of Baltimore County. During 2002, 76% of the customer interruptions were caused by trees, 16% were caused by underground conductor failures, 5% were caused by public interferences (dig-ins) and 3% were caused by miscellaneous events. Each failed underground conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE investigated the need for additional underground cable replacements on this feeder to address potential future conductor failures (no cable replacement opportunities were identified in 2003). Tree trimming on this feeder was most recently completed October 2000, and an inspection performed in 2003 determined that localized tree trimming was needed (completed 4/03). BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 6/03).

Feeder 7873

Feeder 7873 supplies approximately 1,519 customers in the Highlandtown area of Baltimore City. During 2002, 30% of the customer interruptions were caused by a foreign object contacting overhead wiring (Mylar balloon), 20% were caused by wildlife, 17% were caused by a switching error, 16% were caused by underground conductor failures, 9% were caused by equipment failures, and 8% were due to unknown causes. BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 5/03). Tree trimming on this feeder was most recently completed October 2000, and an inspection performed in 2003 determined that no additional trimming was needed at that time. In addition, several opportunities to fuse taps were identified (completed 5/03). Each failed conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE replaced sections of underground cable on this feeder that had experienced excessive number of failures (completed 6/03).

Feeder 7347

Feeder 7347 supplies approximately 2,261 customers in the Glen Burnie area of Anne Arundel County. During 2002, 94% of the customer interruptions were caused by underground conductor failures and 6% were caused by miscellaneous events. Each failed conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE replaced sections of underground cable on this feeder that had experienced excessive number of failures (completed 7/03). Tree trimming on this feeder was most recently completed September 2001, and an inspection performed in 2003 determined that no additional trimming was needed at that time. BGE conducted an overhead equipment inspection and corrected the related deficiencies (completed 5/03). To improve outage restoration times and reduce the number of sustained interruptions, remotely operable sectionalizing and tie reclosers were installed as part of BGE's Distribution Automation program (completed 9/03).

Feeder 7203

Feeder 7203 supplies approximately 1,631 customers in south central Carroll County, including Eldersburg. During 2002, 46% of the customer interruptions were caused by trees, 33% were caused by equipment failures, 16% were caused by underground conductor failures and 5% were caused by miscellaneous events. During 2002, BGE trimmed trees along the entire length of the feeder (completed 11/02). During 2003, BGE conducted an overhead equipment and conductor inspection and corrected related deficiencies (completed 2/03). To improve outage restoration times and reduce the number of sustained interruptions, remotely operable sectionalizing and tie reclosers were installed as part of BGE's Distribution Automation program (completed 8/03). Each failed conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE investigated the need for additional underground cable replacements on this feeder to address potential future conductor failures (no cable replacement opportunities were identified in 2003).

Feeder 7276

Feeder 7276 supplies approximately 1,400 customers in the Ellicott City area of Howard County. During 2002, 81% of the customer interruptions were caused by underground conductor failures, 8% were due to unknown causes, 6% were caused by trees and 5% were caused by miscellaneous events. Each failed conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE replaced sections of underground cable on this feeder that had experienced excessive number of failures (completed 2/03). Tree trimming on this feeder was most recently completed in December 2000, and an inspection performed in 2003 determined that localized tree trimming was needed (completed 5/03). BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 5/03).

Feeder 7014

Feeder 7014 supplies approximately 1,786 customers in the North-West corner of Baltimore City. During 2002, 32% of the customer interruptions were caused by equipment failures, 29% were caused by underground conductor failures, 21% were due to unknown causes, 14% were caused by trees and 4% were caused by miscellaneous events. Each failed conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE investigated the need for additional underground cable replacements on this feeder to address potential future conductor failures (no cable replacement opportunities were identified in 2003). Tree trimming on this feeder was most recently completed January 2002, and an inspection performed in 2003 determined that localized tree trimming was needed (completed 4/03). BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 4/03).

Feeder 7541

Feeder 7541 supplies approximately 2,501 customers in the Carney area of Baltimore County. During 2002, 97% of the customer interruptions were caused by overhead conductor failures and 3% were caused by miscellaneous events. Tree trimming on this feeder was most recently completed April 2001, and an inspection performed in 2003 determined that no additional trimming was needed. BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 5/03). To improve outage restoration times and reduce the number of sustained interruptions, remotely operable sectionalizing and tie reclosers were installed as part of BGE's Distribution Automation program (completed 6/03).

Feeder 8680

Feeder 8680 supplies approximately 953 customers in the Clarksville area of Howard County. During 2002, 78% of the customer interruptions were caused by equipment failures, 19% were due to unknown causes and 3% were caused by miscellaneous events. Tree trimming on this feeder was most recently completed April 2002, and an inspection performed in 2003 determined that localized tree trimming was needed (completed 5/03). BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 5/03).

Feeder 7509

Feeder 7509 supplies approximately 2,935 customers in the Hamilton area of Baltimore City and the Overlea area of Baltimore County. During 2002, 45% of the customer interruptions were caused by trees, 44% were caused by lightning, 6% were caused by miscellaneous events and 5% were caused by equipment failures. Tree trimming on this feeder was most recently completed in August 2001, and an inspection performed in 2003 determined that localized tree trimming was needed (completed 4/03). BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 6/03).

Feeder 7039

Feeder 7039 supplies approximately 4,249 customers in the Govans area of Baltimore City. During 2002, 42% of the customer interruptions were caused by trees, 42% were caused by overhead conductor failures, 7% were caused by equipment failures, and 6% were due to unknown causes. Tree trimming on this feeder was most recently completed April 2001, and an inspection performed in 2003 determined that localized tree trimming was needed (completed 5/03). BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 4/03).

Feeder 4429

Feeder 4429 supplies approximately 800 customers in the Arlington and Pimlico areas of Baltimore City. During 2002, 37% of the customer interruptions were caused by overhead conductor failures, 29% were caused by public interferences, 27% were due to unknown causes and 7% were caused by miscellaneous events. BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 5/03). The feeder was cycled trimmed in April 2003.

Feeder 4436

Feeder 4436 supplies approximately 648 customers in the Arlington and Forest Park areas of Baltimore City. During 2002, 96% of the customer interruptions were caused by underground conductor failures and 4% were caused by miscellaneous events. Each failed conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE investigated the need for additional underground cable replacements on this feeder to address potential future conductor failures (no cable replacement opportunities were identified in 2003). BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 5/03). The feeder was cycled trimmed in April 2003.

Feeder 4119

Feeder 4119 supplies approximately 629 customers in the Mount Vernon and Mount Royal areas of Baltimore City. During 2002, 100% of the customer interruptions were caused by underground conductor failures. Each failed conductor was repaired or replaced during 2002 as part of the service restoration and repair process. In addition, BGE investigated the need for additional underground cable replacements on this feeder to address potential future conductor failures (no cable replacement opportunities were identified in 2003). BGE conducted an overhead equipment and conductor inspection and corrected the related deficiencies (completed 5/03). The feeder was cycled trimmed in April 2003.

(2) The annual report two years after the identification of the operating district or feeders as having the poorest performance shall include the ordinal ranking representing the feeder's reliability during the current reporting period.

BGE's poorest performing 2% of the 13.8 kV distribution feeders (18 out of 911 total 13.8 kV distribution feeders) and 2% of the 4.4 kV distribution feeders (3 out of 135 total 4.4 kV distribution feeders) in 2001 had the following ordinal rankings in 2003. Ordinals for 2003 range from 1 (worst) to 135 (best) for 4.4 kV feeders and from 1 (worst) to 916 (best) for 13.8 kV feeders, ranked by Composite Reliability Index, then by 2003 feeder SAIFI to break any ties. Ranking excludes major event data. BGE will provide this data for CY 2004 in its report due May 2005.

13.8 kV Feeder	Substation	2003 Ordinal Ranking
8452	NAJ	541
8453	NAJ	58
7007	Center	81
7451	Glenarden	564
7402	NAJ	278
7281	Montpelier	574
7447	Mitchellville	707
7473	Glenn Dale	138
8515	Ridgeview	577
7806	Carroll	7
7268	West Laurel	93
7445	Mitchellville	444
7521	Gray Manor	680
8734	Ashton Modular	91
7012	Brookhill	297
7184	Sudbrook Park	284
7110	Mount Washington	122
7187	Sudbrook Park	898

Feeder 7806 ordinal ranking resulted in its inclusion in section F.(1) above. As such, BGE will treat it similarly to the other 2003 Feeders with Poorest Reliability.

4.4 kV Feeder	Substation	2003 Ordinal Ranking
4370	Broadway	27
4707	South Baltimore	N/A
4067	Philadelphia Road	29

Note: Feeder 4707 was converted from 4.4 kV to 13 kV in April 2002 and their customers were transferred to new feeders 7381 and 7382. These new feeders were ranked 892 and 502 respectively in 2003.

BGE listed in the CY 2002 report that 2 feeders from 2000 did not register significant reliability improvements in 2002. Their ordinal rankings for 2002 and 2003 are indicated below.

13.8 kV Feeder	Substation	2002 Ordinal Ranking	2003 Ordinal Ranking
7801	Carroll	24	59
8271	Hollofield	32	35

One feeder on the above list did not register significant reliability improvements. Explanations of recent outage causes and improvement plans for 2004 are listed below. Because BGE is committed to improving the reliability of this feeder, we will treat it similarly to the 2003 poorest performing feeders mentioned in section F.(1), above, and will include its progress in future reports.

Feeder 8271

Feeder 8271 supplies approximately 1,400 customers in the Ellicott City area of Howard County. Feeder 8271's 2003 ranking of 35 was primarily driven by an underground splice failure that resulted in a feeder lock-out and accounted for 55% of the customer interruptions with equipment problems accounting for 17%, lightning for 13%, miscellaneous events for 9% and trees for 6% of the total customer interruptions. During 2003, BGE re-inspected equipment and conductors on the feeder and completed repairs in July 2003, performed localized tree trimming in June 2003 and installed additional fusing at 7 locations.

H. Momentary Interruptions. A utility shall maintain information which it collects on momentary interruptions for five years.

BGE meets this requirement.