Massachusetts Electric
A National Grid Company

Amy G. Rabinowitz
Counsel

March 3, 2003

Mary L. Cottrell, Secretary
Department of Telecommunications and Energy
One South Station
Boston, MA 02110

Re: 2002 Service Quality Report; D.T.E. 03-20

Dear Secretary Cottrell:

I am enclosing for filing Massachusetts Electric Company's 2002 Service Quality Report. Thank you very much for your time and attention to this filing.

Very truly yours,

Amy G. Rabinowitz

cc: Jody Stiefel, Hearing Officer (1 copy)
Glenn Shippee, Rates and Revenue Division (6 copies)
Joseph Rogers, Office of the Attorney General (1 copy)

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Massachusetts Electric Company

2002 Service Quality Report

March 3, 2003

Submitted to:
Massachusetts Department of
Telecommunications and Energy
Docket No. D.T.E. 03-20

Submitted by:

Massachusetts Electric
A National Grid Company

Section 1

FORM B (ELECTRIC COMPANIES)

Massachusetts Electric Company **March 3, 2003**

PENALTY PROVISIONS	**Years in Database**	**Mean and Benchmark**	**Performance in 2002**	**Comments**
Telephone Answering Factor (%)	5	Mean: 72.8% Benchmark: 64.4% - 81.2%	84.5%	
Emergency Answering (%)	0	Mean: Not available Benchmark: Does not apply	90.5%	The company started collecting this data in January 2002. No benchmark is calculated for this measure because no revenue penalty or incentive mechanism has been assigned to it, pursuant to the company's service quality plan.
Service Appointments Kept (%)	0	Mean: Not available Benchmark: Not available	92.2%	The company started collecting this data in January 2002. The mean and benchmark will be calculated once three years of data are available.
Meter Reads	10	Mean: 92.2% Benchmark: 87.9% - 96.5%	95.4%	
Consumer Division Cases	10	Mean: 988 Benchmark: 838 - 1,138	804	
Bill Adjustments ($/1000 customers)	10	Mean: $28.54 Benchmark: $19.92 - $37.16	$34.46	
SAIFI	5	Mean: 1.197 Benchmark: 1.090 - 1.304	1.641	
SAIDI	5	Mean: 93.73 Benchmark: 81.94 - 105.52	183.36	
Lost Time Accident Rate (# of acc/200,000 employee hours)	10	Mean: 1.52 Benchmark: 1.06 - 1.98	1.11	

FORM B (ELECTRIC COMPANIES)

Massachusetts Electric Company **March 3, 2003**

ADDITIONAL REPORTING	**Years in Database**	**Mean and Benchmark**	**Performance in 2002**	**Comments**
Staffing Levels	Does not apply	Mean: Does not apply Benchmark: Does not apply		See discussion in Section 3
Restricted Work Day Rate (# of acc/200,000 employee hours worked)	Does not apply	Mean: Does not apply Benchmark: Does not apply	5.99	No mean and benchmark is calculated for this reporting requirement because no revenue penalty or incentive mechanism has been assigned to it, pursuant to the company's service quality plan.
Property Damage > $50k (#)	Does not apply	Mean: Does not apply Benchmark: Does not apply	1	See discussion in Section 3
Line Loss	Does not apply	Mean: Does not apply Benchmark: Does not apply	3.74	See discussion in Section 3
Capital Expenditures (# of projects and total $)	10	Mean: Does not apply Benchmark: Does not apply	$127.3 million	See discussion in Section 3
Spare Component & Inventory Policy	Does not apply	Mean: Does not apply Benchmark: Does not apply		See discussion in Section 3
Customer Surveys (1-7): Random	7	Mean: 92% Benchmark: Does not apply	94%	Represents the percent of customers who gave a rating of 5, 6, or 7 on a 7-point scale. The results for 1995 through 1999 include Mass. Electric and Eastern Edison, weighted by the number of customers in each company.
Customer Surveys (1-7): Callers	5	Mean: 80% Benchmark: Does not apply	79%	Represents the percent of customers who gave a rating of 6 or 7 on a 7-point scale. Eight types of transactions were included in the survey, and the overall results are weighed based on the number of transactions performed at the call center during the year.
Customer Service Guarantees (#, total $): Lack of Notification of Planned Service Interruptions	0	Mean: Not available Benchmark: Does not apply	$0.00	The company started providing customer service guarantees for failure to notify customers of planned service interruptions in 2002.
Customer Service Guarantees (#, total $): Failure to Keep Service Appointments	0	Mean: Not available Benchmark: Does not apply	465 @ $25 = $11,625	The company started providing customer service guarantees for failure to keep service appointments in 2002.

Section 2

Mass Electric Service Quality Standards
Summary Results

Historical Data by Year	SAIFI	SAIDI	LTA	Calls	DTE Cases	Billing Adjs	Appts Met	Meter Reads
1992			1.04		1,099	36.75	**(1)**	97.0%
1993			1.23		1,243	32.69		96.5%
1994			1.21		1,016	38.93		95.3%
1995			1.37		1,011	29.58		95.1%
1996			1.66		899	17.54		88.1%
1997	1.125	87.05	1.93	71.6%	997	21.50		89.3%
1998	1.131	79.54	1.36	75.1%	793	32.85		92.5%
1999	1.384	106.62	1.42	77.8%	843	15.10		90.9%
2000	1.172	90.25	1.38	80.7%	818	37.30		94.2%
2001	1.175	105.19	2.63	59.0%	1,158	23.17		83.4%
2002	1.641	183.36	1.11	84.5%	804	34.46	92.2%	95.4%
Actual 2002 Service Quality Standards (Using Performance Thru 2001)								
Average	1.197	93.73	1.52	72.8%	988	28.54	n/a	92.2%
Std Deviation	0.107	11.79	0.46	8.4%	150	8.62		4.3%
Max Incentive	0.983	70.15	0.60	89.6%	688	11.30		100.0%
Deadband	1.090	81.94	1.06	81.2%	838	19.92		96.5%
Range	1.304	105.52	1.98	64.4%	1,138	37.16		87.9%
Max Penalty	1.411	117.31	2.44	56.0%	1,288	45.78		83.6%

2002 Service Quality Results								
	SAIFI	SAIDI	LTA	Calls	DTE Cases	Billing Adjs	Appts Met	Meter Reads
% allocation	22.5%	22.5%	10.0%	12.5%	5.0%	5.0%	12.5%	10.0%
Max Penalty or Incntve	$2,968,125	$2,968,125	$1,319,167	$1,648,958	$659,583	$659,583	$1,648,958	$1,319,167
Actual (Penalty) Incntv	($2,968,125)	($2,968,125)	$0	$799,766	$248,121	$0	n/a	$0
						Total net SQ penalty		($4,888,363)

(2)	**Actual 2003 Service Quality Standards (Using Performance Thru 2002)**								
	Average	1.271	108.67	1.53	74.8%	958	28.31	n/a	92.1%
	Std Deviation	0.205	38.08	0.45	8.9%	155	8.41		4.2%
	Max Incentive	0.861	32.51	0.63	92.6%	648	11.49		100.0%
	Deadband	1.066	70.59	1.08	83.7%	803	19.90		96.3%
	Range	1.304	105.52	1.98	65.9%	1,113	36.72		87.9%
	Max Penalty	1.411	117.31	2.43	57.0%	1,268	45.13		83.7%

(1) - "Appointments Met" data collection began in Jan 2002. Three years of data needs to be collected before performance results are monitored against SQ standards.

(2) - In accordance with the approved SQ plan, "the floor benchmarks that trigger penalties do not change". The 2003 penalty range on this worksheet reflects the application of this rule for the affected measures.

Massachusetts Electric Company

Reliability - Outage Frequency (1)

Note: All data includes Massachusetts Electric and Eastern Edison

Calendar Year	(a) Customer Hrs Interrupted	(b) # Customers Interrupted	(c) Avg # of Customers	Frequency formula: (b) / (c)
1997	1,691,756	1,312,066	1,165,998	1.125
1998	1,566,337	1,336,664	1,181,597	1.131
1999	2,100,963	1,636,730	1,182,299	1.384
2000	1,794,489	1,398,019	1,193,043	1.172
2001	2,110,869	1,414,525	1,203,978	1.175
2002	3,714,014	1,994,045	1,215,328	1.641

		Updated Hist Results 1997 to 2002	**Original Benchmark** 1997 to 2001	**Performance Measures for 2003**
	Average	1.271	1.197	1.271
	STD	0.205	0.107	0.205
Penalty	Max level	1.681	1.411	1.411
	25% level	1.476	1.304	1.304
deadband range	Average	1.271	1.197	1.271
	25% level	1.066	1.090	1.066
Incentive	Max level	0.861	0.983	0.861

Note: Data source - National Grid USA IDS system. Reliability indices exclude 1) All transmission related outages where the Company does not own or operate the equipment, 2) any interruption at the secondary, transfomer or service level, and 3) exclusions allowed under the new major event guidelines (any event that causes 15% of customer served in the operating area to be interrupted during the event).

(1) Frequency per Customer Served Interrupted ÷ Average Customers.

Massachusetts Electric Company

Reliability - Outage Duration (1)

Note: All data includes Massachusetts Electric and Eastern Edison

Calendar Year	(a) Customer Hrs Interrupted	# Customers Interrupted	(b) Avg # of Customers *	Duration (mins) formula: (a)*60 / (b)
1997	1,691,756	1,312,066	1,165,998	87.05
1998	1,566,337	1,336,664	1,181,597	79.54
1999	2,100,963	1,636,730	1,182,299	106.62
2000	1,794,489	1,398,019	1,193,043	90.25
2001	2,110,869	1,414,525	1,203,978	105.19
2002	3,714,014	1,994,045	1,215,328	183.36

		Updated Hist Data 1997 to 2002	**Original Benchmark** 1997 to 2001	**Performance Measures for 2003**
	Average	108.67	93.73	108.67
	STD	38.08	11.79	38.08
Penalty	Max level	184.83	117.31	117.31
	25% level	146.75	105.52	105.52
deadband range	Average	108.67	93.73	108.67
	25% level	70.59	81.94	70.59
Incentive	Max level	32.51	70.15	32.51

Note: Data source - National Grid USA IDS system. Reliability indices exclude 1) All transmission related outages where the Company does not own or operate the equipment, 2) any interruption at the secondary, transfomer or service level, and 3) exclusions allowed under the new major event guidelines (any event that causes 15% of customer served in the operating area to be interrupted during the event).

(1) Duration per Customer Served (minutes) = Customer Hours Interrupted*60 ÷ Average Customers.

Massachusetts Electric Company

Lost Work Time Accident Rate

Calendar Year	(a) LTAs	(b) # of MECo Employees	(c) Hours Worked	Frequency formula: (a)*200,000 / (c) LTA rate (1)
1992	26	2,499	5,007,998	1.04
1993	27	2,190	4,389,493	1.23
1994	27	2,232	4,473,318	1.21
1995	28	2,046	4,100,741	1.37
1996	36	2,163	4,332,302	1.66
1997	36	1,992	3,725,839	1.93
1998	26	1,870	3,816,300	1.36
1999	25	1,770	3,519,766	1.42
2000	25	1,831	3,626,288	1.38
2001	49	1,835	3,729,370	2.63
2002	20	1,818	3,603,971	1.11

		Updated Hist Data 1993 to 2002	**Original Benchmark** 1992 to 2001	**Performance Measures for 2003**
	Average	1.53	1.52	1.53
	STD	0.45	0.46	0.45
Penalty	Max level	2.43	2.44	2.43
	25% level	1.98	1.98	1.98
deadband range	Average	1.53	1.52	1.53
	25% level	1.08	1.06	1.08
Incentive	Max level	0.63	0.60	0.63

historical information includes MECo and Eastern Edison

Note: Lost Time Accident Rate per 200,000 hours worked = Number of Lost Time Accidents x 200,000 ÷ Actual Hours Worked. For 1992 to 1996, actual hours worked are estimated based on 2,004 hours per employee.

Massachusetts Electric Company

Customer Telephone Service - Northboro Call Center

Year	Calls Ans	<20 sec	%<20 sec (1)
1997	1,765,250	1,263,692	71.6%
1998	1,638,704	1,231,112	75.1%
1999	1,676,906	1,303,929	77.8%
2000	1,936,117	1,562,748	80.7%
2001	2,230,729	1,316,168	59.0%
2002	1,994,069	1,685,061	84.5%

		Updated Hist Data 1997-2002	Original Benchmark 1997-2001	Performance Measures for 2003
	Average	74.8%	72.8%	74.8%
	STD	8.9%	8.4%	8.9%
Penalty	Max level	57.0%	56.0%	57.0%
	25% level	65.9%	64.4%	65.9%
deadband range	Average	74.8%	72.8%	74.8%
	25% level	83.7%	81.2%	83.7%
Incentive	Max level	92.6%	89.6%	92.6%

(1) The Percent of Calls Answered Within 20 Seconds is calculated by dividing the number of calls answered within 20 seconds by the total number of calls answered during the year. "Calls answered" include calls answered by a customer service representative (CSR) and calls completed within the Voice Response Unit (VRU). Abandoned calls are not considered. The time to answer is measured once the customer makes a selection to either speak with a CSR or use the VRU.

1997 was the first full year of operation at the Northboro Customer Service Center

Up until August 2002, National Grid operated two call centers that were used to answer calls from customers of its four distribution companies; one located in Northborough, MA and another in Providence, RI. Prior to 2002, National Grid tracked the telephone service statistics by call center only, not by specific company. The benchmarks for Massachusetts Electric Company and Nantucket Electric Company prior to 2002 were based on data from the Northborough call center, since the majority of both companies' calls from customers were answered at that call center. However, beginning January 1, 2002, National Grid started tracking the telephone statistics by company.

In the Company's 2001 Service Quality Report filed on March 1, 2002, the footnote on Attachment 2 - Page 4 of 7 states that the Companies "will continue to base their performance on a benchmark using the Northborough call center data until three years of company data are available". However, in August 2002, the Providence call center was closed, and all National Grid calls are now answered at the Northborough call center. As a result, the Northborough statistics now include all the calls from National Grid's Rhode Island customers. During 2002, the performance for the Northborough call center for all companies combined was 84.6%, including 84.5% for Massachusetts Electric alone and 84.9% for Nantucket Electric alone. Since the individual company results are virtually identical to the call center results, the Companies will begin reporting their own company data immediately and include the results in their calculations of the historical benchmarks rather than recalculating the benchmark after three years of company data are available.

Massachusetts Electric Company

Department of Telecommunications and Energy Cases

Year	Combined Cases (1)	(includes Mass. Electric and Eastern Edison)
1992	1,099	
1993	1,243	
1994	1,016	
1995	1,011	
1996	899	
1997	997	
1998	793	
1999	843	
2000	818	
2001	1,158	
2002	804	

		Updated Hist Data 1993-2002	**Original Benchmark** 1992-2001	**Performance Measures for 2003**
	Average	958	988	958
	STD	155	150	155
Incentive	Max level	648	688	648
	25% level	803	838	803
deadband range	Average	958	988	958
	25% level	1,113	1,138	1,113
Penalty	Max level	1,268	1,288	1,268

(1) Source of case data: Mass DTE Consumer Division (Electric Company Complaint Rates)

Massachusetts Electric Company

DTE Billing Adjustments (Between the Company and a Residential Customer)
(includes Mass. Electric and Eastern Edison)

Year	Billing Adjustments per DTE (1)	Avg # of Res Customers per Month (2)	Billing Adj per 1,000 Residen Customers (3)
1992	$35,801	974,062	$36.75
1993	$32,137	983,064	$32.69
1994	$38,685	993,757	$38.93
1995	$29,710	1,004,527	$29.58
1996	$17,770	1,013,288	$17.54
1997	$22,075	1,026,598	$21.50
1998	$34,112	1,038,282	$32.85
1999	$15,854	1,049,800	$15.10
2000	$39,496	1,058,766	$37.30
2001	$24,333	1,050,167	$23.17
2002	$36,489	1,058,801	$34.46

		Updated Hist Data 1993 to 2002	**Original Benchmark** 1992 to 2001	**Performance Measures for 2003**
	Average	$28.31	$28.54	$28.31
	STD	$8.41	$8.62	$8.41
Penalty	Max level	$45.13	$45.78	$45.13
	25% level	$36.72	$37.16	$36.72
deadband range	Average	$28.31	$28.54	$28.31
	25% level	$19.90	$19.92	$19.90
Incentive	Max level	$11.49	$11.30	$11.49

(1) Source: Mass DTE Consumer Division (Consumer Division Adjustments Worksheet)
(2) Source FERC Form 1 page 301 - residential customers
(3) Billing adjustments per 1,000 Customers = Billing Adjustments ÷ Avg # of Customers x 1,000.

Massachusetts Electric Company

Customer Service - Service Appointments Met as Scheduled

Year	Appointments Scheduled	Appointments Met	% Met
2002	2,289	2,111	92.2%

Note: The Company started collecting data on service appointments in January 2002. The mean and benchmark will be calculated once three years of data are available. Service Appointments refer to a mutually agreed upon arrangement for service between the Company and the customer that specifies the date for the Company's personnel to perform a service activity that requires the presence of the customer at the time of service.

Massachusetts Electric Company

On-Cycle Meter Readings

Year	Combined Meters	Estimated	% Read (1)	
1992	11,569,562	345,248	97.0%	MECo only (EEd data not available)
1993	11,643,704	406,038	96.5%	MECo only (EEd data not available)
1994	11,727,009	551,715	95.3%	MECo only (EEd data not available)
1995	14,384,989	711,827	95.1%	MECo and Eastern Ed combined
1996	14,346,387	1,700,521	88.1%	MECo and Eastern Ed combined
1997	14,347,115	1,531,557	89.3%	MECo and Eastern Ed combined
1998	14,575,548	1,098,071	92.5%	MECo and Eastern Ed combined
1999	14,641,058	1,338,426	90.9%	MECo and Eastern Ed combined
2000	14,088,878	821,400	94.2%	MECo and Eastern Ed combined
2001	14,924,493	2,478,482	83.4%	MECo (including Eastern Ed)
2002	15,045,098	697,131	95.4%	MECo (including Eastern Ed)

		Updated Hist Data 1993-2002	**Original Benchmark** 1992-2001	**Performance Measures for 2003**
	Average	92.1%	92.2%	92.1%
	STD	4.2%	4.3%	4.2%
Penalty	Max level	83.7%	83.6%	83.7%
	25% level	87.9%	87.9%	87.9%
deadband range	Average	92.1%	92.2%	92.1%
	25% level	96.3%	96.5%	96.3%
Incentive	Max level	100.0%	100.0%	100.0%

(1) Percent Read = 1 - (Meters Estimated ÷ Total Meters).

Section 3

Attachment A

Additional Service Quality Reporting Requirements

Staffing Level Benchmark

Section IV of the Company's service quality plan requires the review of whether staffing levels are in accordance with M.G.L. c. 164, § 1E. This statute provides, in pertinent part, that distribution companies, in complying with service quality standards established by the Department, may not make any labor displacements or reductions below staffing levels in existence on November 1, 1997 unless they are part of a collective bargaining agreement or otherwise approved by the Department. Mass. Gen. Laws c. 164, § 1E(b). Mass. Electric's staffing levels have been addressed in its collective bargaining agreements, and thus Mass. Electric has met the requirements of this statute.

Specifically, all but one of the Company's collective bargaining agreements[1] contain the following stipulation:

> The Union agrees that for the term of this agreement, all requirements of the Electricity Restructuring Act of 1997, including Section 1E related to staffing levels have been satisfied and that this agreement is a collective bargaining agreement under that language.

The remaining agreement[2] does not contain this stipulation. It contains more general language about management's right to make decisions about the company. Article III, Managements Rights, provides:

[1]The following agreements, all effective May 12, 1999 — May 11, 2003, contain this language: (1) Local Unions Nos. 326 and 486 of the International Brotherhood of Electrical Workers, (2) Utility Workers Union of America, AFL-CIO, Brotherhood of Utility Workers Council, Locals Nos. 317, 322, 329, and 330 and (3) Utility Workers Union of America, AFL-CIO, Locals No. 446 and 454.

Additional Service Quality Reporting Requirements

> The Brotherhood agrees, for itself and its members, not to hinder or interfere with the management of the Company in its several departments on any matter not otherwise specifically addressed in this agreement, including, but not limited to actions related to the following matters: selection of the workforce, including the criteria on which those decisions are based; assignment of the work; direction of the work force; scheduling; *staffing levels*; discipline or discharges for proper cause; and the right to transfer employees to work for which they are better suited and *to furlough employees for any reason, including lack of work or efficiency in operations*. (Emphasis supplied)

In all cases, the appropriateness of Mass. Electric's staffing levels have been addressed in the collective bargaining agreements, and thus, Mass. Electric is in compliance with M.G.L. c. 164, §1E. No further review of Mass. Electric's staffing levels is required.

Property Damage

Pursuant to Section VIII.A of the Company's Service Quality Plan, the Company reports to the Department on property damage to Company-owned property in excess of $50,000. In 2002, there was one occurrence that produced damage to company property in excess of $50,000:

> May 18, 2002 – Transformer Failure, North Quincy, MA
> Total loss is unknown at this time as restoration is not complete. Claim has been submitted to the insurance company as it is anticipated that the total loss will exceed $500,000.

[2]The Brotherhood of Utility Workers of New England, Inc., Local No. 355, effective April 1, 2000 — March 31, 2004.

Additional Service Quality Reporting Requirements

Line Losses

Pursuant to Section VIII. A. of the Company's Service Quality Plan, the Company is providing substantiation of (1) its Electric Distribution Line Loss value, (2) the accompanying adjustments that were made to standardize the value to specific reference conditions, and (3) the specific reference conditions in Attachment B.

Capital Expenditure Information

Pursuant to Section VIII.E of the Company's Service Quality Plan, the Company is providing:

1. Attachment C: A summary worksheet showing Mass. Electric approved and completed transmission and distribution capital expenditures by year (1993-2002).
2. Attachment D: A detailed report for 2002[3] showing expenditures by project, including a description of each project.

Spare Component and Inventory Policy

Pursuant to Section VIII. F of the Company's Service Quality Plan, the Company provides the following description of its spare component and inventory policy.

The Company's inventory is managed in conjunction with the inventory of the other National Grid distribution companies ("Companies"). There is a centralized distribution center (CDC) in Franklin, Massachusetts and twelve regional warehouses in

[3] Detailed information on capital expenditures for 1993-2001 has been provided to the Department in Docket D.T.E. 01-71B, on March 1, 2002.

Additional Service Quality Reporting Requirements

New England. In New York, there is a CDC, and two hub warehouse locations. These CDCs and warehouses receive, store, and distribute materials and supplies to meet day-to-day requirements for new construction, rebuilds, repairs, and service restoration due to severe weather conditions. The Companies manage $57 million in inventory and distribute approximately $120 million in materials throughout the National Grid service territories. At this time, Mass. Electric and the other New England distribution companies routinely share inventoried materials with each other. Sharing with the New York distribution company occurs during emergencies only, however.

As a result of the 2002 merger between National Grid USA and the Niagara Mohawk Power Corporation, National Grid has developed a centralized corporate structure to combine the Supply Chain Management functions that separately existed in New York and New England. This includes procurement, materials planning, computer support systems, a common set of operational practices, and a system wide investment recovery practice. Through the system wide investment recovery practice, National Grid will reduce its inventory by standardizing items, decreasing lead-times associated with aggressive negotiations with vendors, and eventually sharing inventories. These inventory reductions will not affect the ability to provide reliable service to customers, however. Emergency material distribution will be enhanced, system-wide, by combining the best practices from New York and New England. National Grid has established important safeguards to balance the risk of running out of critical items in the course of

Additional Service Quality Reporting Requirements

this methodical inventory reduction. It will monitor the accuracy of the inventory, provide flexible delivery services, and develop cross-functional solutions for material supply consistent with customer service requirements. These actions will result in a cost effective, coordinated inventory management system.

National Grid works to obtain the maximum salvage value for idle assets classified as surplus or obsolete inventories, scrap, and retired capital equipment. These assets and waste management activities will continue to include the security, control, and environmental accountability during the disposal of these idle assets and commodity items. The current New York investment recovery programs will continue, while focusing on the use of the Wire Granulation Service, a wire material recovery process, and implementing a new Transformer Disposal Process will increase the Investment Recovery effort in New England.

Customer Surveys

Pursuant to Section III.C of the Company's Service Quality Plan, the Company is providing:

1. Attachment E, page 1: Results of a customer satisfaction survey of a statistically representative sample of residential customers.
2. Attachment E, page 2: Results of a survey of customers randomly selected from those customers who have contacted the Company's customer service department within 2002.

Additional Service Quality Reporting Requirements

Annual Major Outage Events

In response to the reporting requirements set forth in Section VIII.D of the Company's Service Quality Plan, the Company reports that it had no Excludable Major Events in 2002.

Poor Performing Circuits

Pursuant to Section VIII.G of the Company's Service Quality Plan, the Company has identified the poor performing circuits set forth in Attachment F.

Tree Trimming

In response to the reporting requirements set forth in Section VIII.D of the Company's Service Quality Plan, the Company's policy on tree trimming is presented in Attachment G.

Substantiation of Electric Distribution Line Loss Value – Calendar Year 2002

Distribution line losses are calculated as the difference between System Delivered MWh and the sum of Company Use and Cycles Sales. This is expressed as a percent of System Delivered MWh and adjusted for the number of billing days versus the number of calendar days. For 2002, the value is 3.74%, as shown on page 2.

System Delivered MWhs are measured and collected daily at bulk tie-line and substation metering points. These MWhs measure total energy delivered to the Company's retail service area. System Delivered MWhs include the energy consumption of all retail customers, Company Use and distribution line losses as well as theft and other unaccounted for energy. Daily System Delivered MWhs are easily summed to calendar months and the year.

Company Use consists of metered MWhs that are tracked but not billed. This includes the energy use at Company facilities. Company Use accounts for less than 0.2% of System Delivered MWh. Cycle Sales refer to MWhs measured at customer metering points and collected over the 21 billing cycles of a month. The billing cycles refer to the days on which customer meters are read. This is determined by the meter reading schedule. It is necessary to read customer meters and issue bills on a cycle basis over the course of an entire month because of the sheer number of retail customers.

The 21 billing cycles roughly coincide with the non-holiday weekdays of a month. For example, MWhs collected in Cycle 1 consist of customer meter reads from the first non-holiday weekday of the monthly billing period. This day is always close to or at the first day of the calendar month. Cycle 1 MWh measure what customers in that billing cycle consumed since Cycle 1 of the previous month. This consists mainly of energy deliveries from the previous month. In general, MWhs collected from the earlier billing cycles (1-10) reflect more energy deliveries from the previous month than the current month. MWhs collected from the later billing cycles (11-21) reflect more deliveries from the current month than the previous month. Total Cycle Sales are the sum of all MWhs collected and billed in Cycle1 through Cycle 21 of the month. Cycle Sales thus measure energy deliveries billed over the calendar month but consumed during both the current and previous month.

To mitigate the timing difference between Cycle MWh Sales and System Delivered MWh, the Electric Distribution Line Loss value is adjusted for the number of days that customers are billed for in a year versus the number of calendar days that System Delivered MWhs are collected for. For example, in 2002 there were 365 calendar days (non-leap year) for which System Delivered MWhs were collected. However, per the meter reading schedule, customers were billed for 365.28 days in 2002, or 0.08% more than the number of calendar days. As a result, Cycle MWh Sales were approximately 0.08% higher than if customers had been billed for only 365 days; and the Electric Distribution Line Loss value was 0.08% lower. Accordingly, 0.08% was added to the Electric Distribution Line Loss value to adjust for the number of days billed in 2002.

The difference between System Delivered MWh and the sum of Cycle Sales and Company Use still includes other timing differences in deliveries, such as differences in deliveries due to weather and day type. This is reflected by the negative values shown in January, February and September, as well as the larger values in June and August. However, these differences offset each other in large part over the course of a full year.

Massachusetts Electric Company
Calculation of 2002 Electric Distribution Line Loss Value

Month	System Delivered Energy (Calendar MWh) (a)	Cycle Sales Plus Company Use (Billed MWh) (b)	Percent Losses & Unbilled (c)=[(a)-(b)]÷(a)	Number of Calendar Days (d)	Number of Billed Days (e)	Percent Difference (f)=[(d)-(e)]÷(d)	Adjusted Percent Losses & Unbilled (g)=(c)-(f)
Jan-2002	1,907,234	1,997,898	-4.75%	31	33.29	-7.39%	2.63%
Feb-2002	1,694,174	1,741,804	-2.81%	28	29.67	-5.96%	3.15%
Mar-2002	1,792,005	1,666,097	7.03%	31	29.14	6.00%	1.03%
Apr-2002	1,650,401	1,606,396	2.67%	30	29.38	2.07%	0.60%
May-2002	1,700,167	1,572,617	7.50%	31	29.52	4.77%	2.73%
Jun-2002	1,780,774	1,649,642	7.36%	30	30.71	-2.37%	9.73%
Jul-2002	2,087,304	1,873,067	10.26%	31	30.43	1.84%	8.43%
Aug-2002	2,147,901	1,965,580	8.49%	31	29.81	3.84%	4.65%
Sep-2002	1,799,837	1,885,399	-4.75%	30	29.95	0.17%	-4.92%
Oct-2002	1,768,850	1,670,061	5.58%	31	29.29	5.52%	0.07%
Nov-2002	1,772,805	1,705,246	3.81%	30	30.95	-3.17%	6.98%
Dec-2002	1,990,792	1,948,516	2.12%	31	33.14	-6.90%	9.03%
	22,092,244	21,282,323	3.67%	365	365.28	-0.08%	3.74%

Attachment C

Massachusetts Electric Company
Summary of Capital Expenditures
Years 1993 - 2002

Year	Mass. Electric	Eastern Edison	Total Mass. Electric
1993	$72,695,266	$10,097,153	$82,792,419
1994	$87,233,042	$10,339,501	$97,572,543
1995	$84,335,030	$8,161,292	$92,496,322
1996	$89,565,316	$8,236,321	$97,801,637
1997	$86,460,876	$10,550,451	$97,011,327
1998	$80,983,531	$9,474,749	$90,458,280
1999	$73,376,843	$9,605,060	$82,981,903
2000	$84,176,106		$84,176,106
2001	$107,418,554		$107,418,554
2002	$127,300,991		$127,300,991

Attachment D

1. **Cape Ann Supply Capacity and Reliability $26.2M**
   Replacement Phase 1 and 51T2 Extension, Gloucester (NS), 2003, **$5.8M**
   - Replace the 23 kV supply cable (2363) and extend the 34 kV supply from West Gloucester Substation to the Gloucester Substation to increase load serving capacity to Gloucester area and improve reliability.
   - Construction in progress. Difficulty in obtaining rights from property owners and City may result in temporary crossing of Annisquam River for summer 2003. Permanent completion date now estimated for 12/03.
   - Total 2002 expenditure: $2.0M.

   2363 Replacement Phase 2, Beverly, Manchester and Gloucester (NS), 2005, **$20.4M**
   - Replace 23 kV supply cable (2363) from the East Beverly Substation to the West Gloucester Substation to improve reliability.
   - Original Phases II through IV (budgeted through FY'06) have been combined. Construction will probably be completed prior to FY'06. Design and permitting/licensing in progress.

2. **New Beverly #12 Substation**, (NS), 2003, **$6.6M***
   - Build substation with one 115/13 kV transformer and two feeders to increase load serving capacity and improve reliability.
   - Beverly Sub estimated costs: MECo-$2,400K; NEP substation and tap-$2,000K. Reconductoring of M191 line will add $550K. Construction of sub and feeders in progress, to be completed by 06/03.; reconductoring in fall of 2003 or spring of 2004.
   - To date: Control house & foundation work complete. Total 2002 expenditures: $479K.

3. **Upgrade Billerica 70 Substation**, Billerica, E. Chelmsford, Billerica (MV), 2003 , **$6.4M***
   - Construction started in 2002.
   - By summer 2003: Install one 115/13 kV transformer and three distribution feeders to increase load serving capacity and improve reliability.
   - By end of 2003: Install second 115/13 kV transformers and remaining four 13 kV distribution feeders.
   - Four of the seven new feeders will replace existing feeders and three new feeders will ultimately be added to support the area.
   - Total 2002 expenditures: $2.5M

4. **New Crocker Pond Substation**, Wrentham and Foxboro (SE), 2002, **$5.2M**
   - Add two new 23 kV supply lines, one new 23/13 kV substation with two 13 kV distribution feeders to increase load serving capacity and improve reliability.
   - This Station went in service as scheduled and carried approximately 20 MVA of peak load during summer 2002.
   - Total 2002 expenditure: $460K.

* This value includes the cost of associated transmission facilities

5. **New Phillips Lane Substation**, Hanover, Abington, Rockland, Norwell, Hanson, Pembroke (SS), 2002, **$4.9M***
   - Build new substation with one 115,13 kV transformer and three 13 kV feeders to provide load relief.
   - This Station went in service as scheduled with four new feeders. It carried approximately 30 MVA of peak load during summer 2002.
   - Total 2002 expenditure: $184K.

6. **New Westford 57 Substation**, Westford, Andover, E. Tewksbury (MV), 2003, **$6.4M***
   - Build new substation with one 115/13 kV transformer and three 13 kV distribution feeders to increase load serving capacity.
   - Construction started in 2002. Total 2002 expenditures: $1.6M.
   - Expected to be completed by 06/03.

7. **Route 146 Relocation Project**, Millbury/Worcester (C), 2001-2004, **$3.8M**
   - Multiple (6) overhead and underground distribution relocation projects due to the expansion of Route 146 in the Millbury/Worcester area.
   - This project is continuing, on Mass Highway Department's schedule. Total 2002 expenditure: $300K.

8. **New Woodchuck Hill Substation**, North Andover (MV), 2003, **$3.5M***
   - By summer 2003: Build a new substation with one 115/13 kV transformer and three 13 kV distribution feeders to increase load serving capacity.
   - Construction started in 2002. Total 2002 expenditure: $800K.

9. **Replace 2398-M & 2333-M supply cables to Medford,** Medford (NS), 2002, **$3.4M**
   - Replaced two direct buried 23kV supply cables to the town of Medford due to repeat failures.
   - Installed third 23kV supply line (aerial cable) to large commercial customer for reliability.
   - Replaced during summer 2002. Total 2002 expenditure: $3.4M.

10. **Expand Newburyport Substation**, Newburyport (MV), 2002, **$1.9M**
    - Install a new 23/13 kV transformer and modular feeder position with a 13 kV distribution feeder to increase load serving capacity.
    - Completed 2002. Total 2002 expenditure: $2.3M.

11. **HT-53 Worcester 13 kV Cable Replacement**, Worcester (C), 2002, **$2.3M**
    - Replace 2 miles of 13 kV cable to increase supply capacity and improve reliability.
    - Completed in 2002. Total 2002 expenditure $226K.

12. **Expand Litchfield Street Substation**, Leominster (C), 2002, **$1.8M**
    - Add one 69/13 kV transformer and add one 13 kV feeder position and bus work to increase supply capacity.
    - Completed in 2002. Total 2002 expenditure: $990K.

* This value includes the cost of associated transmission facilities

13. **Expand North Oxford Substation**, Oxford, Charlton (C), 2002, **$1.2M***
    - Add one 13 kV feeder position to increase capacity.
    - Automate 115 kV supply to improve reliability.
    - Feeder position work completed in 2002. Total 2002 expenditure: $500K.
    - Automation work to be completed in 2003.

14. **Expand Everett Substation**, Everett and Medford (NS), 2002, **$1.2M**
    - Install one 13 kV feeder to increase load serving capacity.
    - Feeder 37W7 completed in 2002. TTD spending-$1,590K.

15. **Expand Chartley Pond Substation and Mink Street Substation And Related Area Distribution Improvements**, Attleboro/Norton/Seekonk (SE), 2002, **$1.2M**
    - Add one 13 kV distribution feeder at Chartley Pond Substation and one 13 kV distribution feeder at Mink Street Substation and miscellaneous feeder tie improvements to increase load serving capacity and improve reliability.
    - A new transformer and new feeder position was installed at Chartley Pond in 2002. An existing feeder was also upgraded at Mink St. to provide additional load serving capacity.
    - Total 2002 expenditure: $675K.

16. **Expand West Salem Substation**, Salem and Lynn (NS), 2002, **$1.1M**
    - Add one 13 kV distribution feeder to increase load serving capacity.
    - Feeder 29W5 substation construction complete. Distribution construction in progress, to be completed by 06/03. Total 2002 expenditures: $377K.

17. **Upgrade Faraday Street**, Worcester (C), 2002, **$1M**
    - Replace thirteen 15 kV breakers to replace outdated equipment.
    - Completed in 2002. Total 2002 expenditures: $176K.

18. **Rebuild Rena Street Substation**, Worcester (C), 2002, **$1M**
    - Replace outdoor substation with metal-clad substation to increase station supply capacity and improve reliability.
    - Construction 75% complete. Total 2002 expenditure: $270K.
    - Expected completion in 2003.

19. **Improve City of Worcester Underground 4 kV**, Worcester (C), **annual cost $1M**
    - Annual expenditure to improve the Worcester 4 kV underground reliability. Improvements include cable replacement, switchgear installation and OFC removals.
    - Ongoing project. Continues to be budgeted for $1M annually.

20. **Expand Williamstown Substation**, Williamstown (W), 2002, **$800K**
    - Add one 23/13 kV feeder at Williamstown Substation to increase load serving capacity.
    - Completed in 2002, at a cost of $1.2M.

* This value includes the cost of associated transmission facilities

21. Install 61L3 feeder at S. Union St. Substation, Andover, (MV), 2002, **$1.2M**

- Install one modular 13kV feeder to relieve existing area feeders and improve reliability.
- Construction was completed in 2002. Total 2002 expenditure: $573K.

* This value includes the cost of associated transmission facilities

Attachment E

Massachusetts Electric Company

Customer Surveys - Random

Year	Survey Results
1995	91%
1996	90%
1997	92%
1998	92%
1999	91%
2000	95%
2001	90%
2002	94%

	Updated Hist Data 1995-2002	**Original Benchmark** 1995-2001
Average	92%	92%
STD	2%	2%

Represents the percent of customers who gave a rating of 5, 6, or 7 on a 7-point scale. The results for 1995 through 1999 include Mass. Electric and Eastern Edison, weighted by the number of customers in each company.

Massachusetts Electric Company

Customer Surveys - Callers

Year	Survey Results
1997	74%
1998	79%
1999	82%
2000	85%
2001	78%
2002	79%

	Updated Hist Data 1997-2002	**Original Benchmark** 1997-2001
Average	80%	80%
STD	4%	4%

Represents the percent of customers who gave a rating of 6 or 7 on a 7-point scale.
Eight types of transactions were included in the survey, and the overall results are weighed based on the number of transactions performed at the call center during the year.

Attachment F

Massachusetts Electric Company
2002 Poor Performance Circuits

FEEDER	DISTRICT	SAIDI	SAIFI	Reason	Corrective Actions
207W2	Central	459.81	6.83	Worst 10% for SAIFI for two years	The 207W2 had three major interruptions due to supply problems and substation problems at Litchfield Street. Work has now been completed to add a second transmission line and second supply transformer, as well as new relays and controls. Reliability due to substation events is expected to be significantly improved. In the past two years there were also 4 interruptions of the Colburn Avenue line recloser. These events were due to capacitor trouble and control problems with the recloser. The capacitors have been relocated, and the recloser control has been replaced.
219W6	Central	269.80	4.80	Worst 10% for SAIFI for two years	A portion of the 219W6 is was being fed from the 207W2, so all of the interruptions described for 207W2 also affected 219W6. In addition, there were two outages related to the reconductoring of the 69 kV transmission line that supplies Prospect Street substation. This line work is now complete.
21W1	Central	922.46	4.27	Worst 10% for SAIFI & SAIDI for two years & Exceeds 300% average SAIDI for two years	There were 12 major events affecting the 21W1 feeder in 2001 and 2002, including 1 from a motor vehicle hitting a pole, 5 from trees, 4 from lightning, and two from loss of the 69 kV supply. Tree trimming will performed on this feeder 2003. A review of lightning protection will be performed for this feeder.
23W3	Central	1586.20	2.90	Worst 10% for SAIFI in 2001, Worst 10% for SAIDI in 2002 & Exceeds 300% average SAIDI in 2002	The 23W3 had one major event from loss of the 69 kV supply to Cooks Pond substation, and three vents due to trees on Mower Street. Also, there were several events due to a major storm in November of 2002. Mower Street was trimmed in 2002.
605W1	Central	1376.70	4.96	Worst 10% for SAIFI for two years	There were 9 major events affecting the 605W1 feeder in 2001 and 2002, including 1 from loss of the 69 kV suppl at Wachusett sub, 4 from loss of the 13 kV supply and substation problems, and 4 from main line outages due to trees and lightning . Tree trimming was performed on the main lines in Rutland in 2001. An additional loop recloser scheme is planned for 2003 construction. This recloser scheme will provide backup from Paxton for the loss of supply. A review of the 34 feeder, which supplies 605W1, is ongoing. A lightning review for this feeder will also be conducted.
32J1	Merrimack Valley	370.43	4.01	Worst 10% for SAIFI for two years	The 32J1 feeder had 2 feeder outages during 2002. In both cases, disconnects were used to isolate the problem area and allow the other feeder customers to be restored while repairs were made. However, after repairs were complete, the overhead dept requested the feeder to be de-energized in order to close the open disconnect dead. Once the disconnects were closed, the feeder breaker was closed again to pick up all feeder customers. Thus one feeder problem caused two different outages, resulting in the frequency (SAIFI) being doubled because of the disconnect switching. This feeder will be investigated for replacement of the 5kV disconnects with either 15kV disconnects (thereby allowing use of a loadbuster tool) or loadbreaks.
33L2	Merrimack Valley	1036.95	2.09	Worst 10% for SAIDI for two years & Exceeds 300% average SAIDI for two years	The 2002 data for SAIDI was inflated due to a typo, specifically on 9/11/02 the 33L2 lockout due to a tree on the main line. IDS showed it out from 20:09 9/11/02 to 10:50 9/12/02 (14:41 hrs). It actually went back at 22:50 (10:50 pm) the same night, thus was only out 2:41hrs, not 14:41 hrs. This changes the SAIDI from 1051.21 to 324.53 minutes (still exceeding the threshold of 300 minutes). A large portion of the 33L1 and 33L2 will be transfered to the new 56L3 feeder thus decreasing the # of customers effected by any one feeder outages on the 33L1, 33L2, or 56L3. With the addition of 56L3 the SAIFI and SAIDI for each feeder is expected to be below system thresholds for 2003. All feeders above feeders (33L1, 33L2, and 56L3) will supply customers in the Boxford area. Boxford is a very heavily treed area, with almost 100% spacer cable mainline construction. Inspite of the large amount of mainline Spacer Cable, Boxford continues to have poor reliability primarily due to the large number of trees and Boxford' s resistance to tree trimming in general.
3L2	Merrimack Valley	274.61	3.44	Worst 10% for SAIFI for two years	There were 3 significant, unrelated events in 2002. The first lockout was due to a squirrel. The second was an underground getaway cable failure. The third was listed as a pole fire. This feeder will be reviewed as part of the ABB Lowell Area Study.
3L5	Merrimack Valley	385.69	3.74	Worst 10% for SAIFI for two years	This feeder was in abnormal configuration for much of the year in order to supply Centralville Sub while the 315 line was out due to bridge reconstruction. Major branches were switched to other feeders. Four significant outages on 3L5 branches occurred while these branches were being carried by other feeders which experienced feeder lockouts. Other events include a spacer cable failure which took out the entire feeder instead of tripping a line recloser. Coordination has been reviewed and corrected. Another event showed 1945 customers interrupted when these customers were actually on a different feeder. This feeder will be reviewed as part of the ABB Lowell Area Study.
47L1	Merrimack Valley	737.54	4.30	Worst 10% for SAIFI & SAIDI for two years & Exceeds 300% average SAIDI for two years	Similar to 2001, the 47L1 locked out 2X for a tree contact on Stuart Street. A project was written in 2001 to reconductor the offending sections on Stuart Street to 477 Spacer cable. The project which was planned for 2002 was not completed prior to the two outages mentioned above. The Spacer Cable job is presently under construction and will be completed by 3/1/2003. The 47L1 also experienced a crane contact and had a couple of erroneous entries for 2002. Reliability is expected to improve significantly.
66L2	Merrimack Valley	784.17	4.69	Worst 10% for SAIFI & SAIDI for two years & Exceeds 300% average SAIDI for two years	The 66L2 experience 4 feeder outages during 2002. 1-Tree, 1-sqiurel on top of a Pole Mounted Recloser (PMR) , related to 2396 supply line outages where the 66L2 did not automatically transfer. The PMR has been replaced and animal protection installed, The 66L2 auto transfer failure was relay related and has been corrected. With the above corrections, the 66L2 is expected to be below all reliability thresholds for2003.
70L1	Merrimack Valley	211.32	5.58	Worst 10% for SAIFI for two years	Four feeder lockouts in 2002. One lockout (cause unknown) occurred while breaker was in non-reclosing due to line construction. Second lockout was due to failure of newly-installed deadend. Deadend has been replaced. Thi outage was due to 23kV cap bank failure. After construction at Billerica is completed, distribution feeders will be supplied directly from the 115kV system. The fourth lockout occurred while switching to pick up 14L1 load during heat wave. Construction of additional feeders is in progress at Billerica.

Massachusetts Electric Company

2002 Poor Performance Circuits

FEEDER	DISTRICT	SAIDI	SAIFI	Reason	Corrective Actions
76L1	Merrimack Valley	274.73	4.00	Worst 10% for SAIFI in 2002, Worst 10% for SAIDI in 2001 & Exceeds 300% average SAIDI in 2001	The 76L1 is a very large feeder w/ 3 Pole Mounted Reclosers and several fused Air Break switches to reduce feeder lockouts. Much of the feeder is very rural and heavily treed. Recommend patrolling the feeder and aggressive tree trimming. Whittier #76 is supplied via the 2329 line and must be manually transferred to the 2396 for loss of the 2329 line. Haverhill Study presently in progress will investigate automatic transfer..
1J903	North Shore	407.78	1.98	Worst 10% for SAIDI for two years	Four outages of this feeder occurred in the past two years. Two were the result of supply problems due to faults at the Lynn #21 13.8kV substation on 7/3/01(bus fault) and 4/15/02(breaker failure). The other two outages were due to tree contacts, one of which on 6/02/02 was during a strong wind storm. A study of the Lynn #21 substation is nearing completion, from which recommendations for improvements to the 13.8kV bus and the supplies from it are expected. In addition, in the Spring of 2003 nearly two thirds of this feeder will be converted to 13.8kV and transferred the 22W1 feeder from Swampscott substation. This conversion work will include crossarm replacement, insulator replacement, and tree trimming.
28J1	North Shore	570.14	2.93	Worst 10% for SAIFI in 2001, Worst 10% for SAIDI in 2002 & Exceeds 300% average SAIDI in 2002	45% of the reliability minutes on 28J1 and 28J2 since 2001 were due to a failed insulator on the 4kV bus at West Gloucester #28 Sub. Feeders tie only to each other, so this fault resulted in a 7.5 hour outage until repairs were made. O&M has been requested to do thermovision on sub to detect hot spots. 40% of reliability minutes lost wer due to second contingency events - a 2324 and 2363 failures, and a 51T2 outage during a 23kV cable failure. 11% of the reliability minutes lost was due to a first contingency 51T2 outage. Replacement of the 2363 is in progress.
28J2	North Shore	567.20	2.97	Worst 10% for SAIFI in 2001, Worst 10% for SAIDI in 2002 & Exceeds 300% average SAIDI in 2002	45% of the reliability minutes on 28J1 and 28J2 since 2001 were due to a failed insulator on the 4kV bus at West Gloucester #28 Sub. Feeders tie only to each other, so this fault resulted in a 7.5 hour outage until repairs were made. O&M has been requested to do thermovision on sub to detect hot spots. 40% of reliability minutes lost wer due to second contingency events - a 2324 and 2363 failures, and a 51T2 outage during a 23kV cable failure. 11% of the reliability minutes lost was due to a first contingency 51T2 outage. Replacement of the 2363 is in progress.
51T2	North Shore	377.12	6.12	Worst 10% for SAIFI for two years & Exceeds 300% average SAIFI for two years	Lightning protection survey in 2001 recommended additional arresters in 17 locations, additional grounding in 20 locations, additional bonding in 140 locations, skinning of covered wire in 100 locations, replacement of 14 silicon carbide arresters with MOV's, replacement of 5 crossarms and installation of additional messenger in 7 locations. These recommendations are 90% complete. There have been 4 breaker/recloser lockouts since January 2002. One was due to deadend insulator failure. Insulator has been replaced. Two were due to tree contacts during storms. The 13 mile route is heavily treed, with many trees 100+ feet tall. One outage was caused by squirrel crossing phases and burning down messenger - has been repaired. Effect of advancing construction of future 51T3 being investigated.
64J5	North Shore	1680.61	6.53	Worst 10% for SAIFI for two years	Outages resulting in elevated 2002 SAIFI were related to 23kV underground failures in Medford during July, 2002 These cables have been replaced . No further action planned.
8J1	North Shore	313.71	4.67	Worst 10% for SAIFI for two years	Four outages resulted in elevated SAIFI. One outage was due to a pole hit. Pole has been replaced. Three outages were due to 23kV supply cable problems. Additional surge protection is being installed in the area in an effort to mitigate simultaneous 23kV cable faults.
9C1	North Shore	480.87	4.72	Worst 10% for SAIFI for two years	Outages resulting in elevated 2002 SAIFI were related to 23kV underground failures in Medford during July, 2002 These cables have been replaced . No further action planned.
9C2	North Shore	1176.84	4.98	Worst 10% for SAIFI for two years & Exceeds 300% average SAIFI for two years	Outages resulting in elevated 2002 SAIFI were related to 23kV underground failures in Medford during July, 2002 These cables have been replaced . No further action planned.
9C3	North Shore	994.54	4.98	Worst 10% for SAIFI for two years & Exceeds 300% average SAIFI for two years	Outages resulting in elevated 2002 SAIFI were related to 23kV underground failures in Medford during July, 2002 These cables have been replaced . No further action planned.
9C4	North Shore	644.62	5.39	Worst 10% for SAIFI for two years	Outages resulting in elevated 2002 SAIFI were related to 23kV underground failures in Medford during July, 2002 These cables have been replaced . No further action planned.
9J2	North Shore	374.70	3.79	Worst 10% for SAIFI for two years	Of the eight outages that have occurred in the past two years ,two were due to contacts on the distribution and the other six were due to supply issues. Two of the supply related outages were due to faults at the Lynn #21 13.8kV substation on 7/3/01(bus fault) and 4/15/02(breaker failure) and the other four were due to cable failures on the 13.8kV supply cable, 1381, that runs from Lynn#21 to Tedesco#9 substation. The 9J2 mainline distribution has been reconductored with spacer cable and additional fusing added. This work was done in late Summer of 2001. A study of the Lynn #21 substation is nearing completion, from which recommendations for improvements to the 13.8kV bus and the supplies from it are expected.

Massachusetts Electric Company
2002 Poor Performance Circuits

FEEDER	DISTRICT	SAIDI	SAIFI	Reason	Corrective Actions
317W1	Southeast	560.45	3.75	Worst 10% for SAIFI for two years	Due to large barn fire near main line pole near substation in July, feeder 317W3 was shut down by request of Fire Chief. Restoration resulted in 317W3 being served from 317W1 source (this feeder). Hot weather resulted in overload and trip of this feeder, 317W1, in afternoon. With 2 circuits now out, restoration was more difficult than usual and had greater impact on reliability than usual. Adjusting indices to remove effect of fire causes 59% decrease in frequency on this feeder. This should not re-occur since the barn was completely destroyed.
317W3	Southeast	831.12	4.01	Worst 10% for SAIFI & SAIDI for two years & Exceeds 300% average SAIDI for two years	(1) Major impact on feeder due to large barn fire near main line pole near substation in July. Feeder was shut down by request of Fire Chief. Restoration resulted in this feeder served from 317W1 source. Hot weather resulted in overload and trip of 317W1 in afternoon. With 2 circuits now out, restoration was more difficult than usual and had greater impact on reliability than usual. Adjusting indices to remove effect of fire causes 60% decrease in frequency on this feeder. This should not re-occur since the barn was completely destroyed. (2) A motor vehicle outage on Rt. 9 on Memorial Day resulted in an extended outage for a very large single phase area. This area is rather unique in its size and single source from a highly exposed (though quite short) section of the feeder. A second feed into this area from another direction and feeder be established. Adjusting for this event results in a 90% decrease in duration.
321W9	Southeast	527.09	4.79	Worst 10% for SAIDI for two years	Approximately 1 mile of main line is being transferred to another feeder in Uxbridge for summer load relief 2003. Outages in Douglas related to seasonal unbalances tripping recloser will be corrected by load transfers to another feeder and rebalancing for summer 2003. Projects for this work in process.
3431W1	Southeast	414.10	5.68	Worst 10% for SAIFI & SAIDI for two years & Exceeds 300% average SAIFI for two years	(1) Tree problems and animal problems indicate need for additional trimming on the mainline sections north of the substation. This area will be trimmed in 2003. (2) Approximately 40 year old spacer cable on Chestnut St. will inspected for deterioration and replaced if necessary. . A line recloser at the beginning of North St.
1102W1	Western	441.62	3.10	Worst 10% for SAIFI in 2001, Worst 10% for SAIDI in 2002	In 2001 there were 3 interruptions on Glendale-Interlaken Rd caused by trees taking down the primary. In 2002 there were 2 interruptions on Glendale-Interlaken Rd caused by trees taking down the primary. These 5 events contributed 110,910 customer minutes of interruption. Also, in 2002 a raccoon contact on the substation breaker caused a feeder outage that contributed 262,560 customer minutes of interruption. Twelve poles on Glendale-Interlaken Rd have been identified as being in poor condition and will be replaced. In addition, a study is underway to investigate replacing all or portions of 1/0 Cu open wire in heavily treed areas on Glendale-Interlaken Rd with spacer cable.
516L1	Western	390.57	4.47	Worst 10% for SAIFI for two years	In 2001 the average outage frequency was 3.0 with 58% of the customer interruptions caused by tree problems and in 2002, the average outage frequency was 5.5 with 68% of the customer interruptions caused by tree problems. In 2002, this feeder had two supply outages, each affecting all 3282 customers. One outage was caused by a squirrel contacting the low side bus and the second outage was caused by a tree taking wires down on the 115 kV #175 supply line. Further review of the 516L1 feeder will be undertaken.
527L1	Western	315.89	4.63	Worst 10% for SAIFI for two years	This feeder had two outages in 2001 and four outages in 2002. One interruption in 2001 of 45 minutes duration was caused by loss of supply from WMECO. In 2002, one interruption of 95 minutes duration was caused when the transformer high side air break opened due to lightning. A project is on-going to provide automatic transfer the 527L1 feeder to a second existing transformer at the Granby substation that is supplied by a separate WMECO transmission line. This project is expected to be completed in 2004.

Attachment G

National Grid

NEW ENGLAND

VEGETATION MANAGEMENT DISTRIBUTION LINE MAINTENANCE PROGRAM MANUAL

APRIL 9, 2002

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GLOSSARY

Adventitious buds- Dormant buds located in a leader.

Annual growth- A yearly incremental stage of vegetation growing that can be visually determined by the annual nodes.

Arborist/Forester- Here after referred to as "Arborist". A National Grid USA employee whose role within their respective administrative district is to plan, budget**,** execute, and audit vegetation management projects; resolve customer issues; work closely with district vendor leadership to achieve performance goals & assist the administrative district with municipality relations/issues. Additionally, to participate in managing storm restoration; implement program policies/programs & provide regular status updates.

Brush- Vegetation less than four inches DBH that may reach the overhead facilities at maturity.

Clearance- The distance between vegetation and the overhead facilities.

Company- This represents the National Grid USA Retail Distribution companies.

Construction type- The configuration and design of the lineal overhead facilities.

DBH- The diameter of vegetation measured at a point four and one half feet above ground level.

Dominant- Exerting ecological or genetic superiority.

Dormant- Not actively growing but protected from the environment.

Flat cutting- The practice of cutting vegetation at ground level under or adjacent to overhead facilities, where the vegetation has the potential to interface with the overhead facilities.

Hazard- Vegetation which appears to: be dead or dying, be structurally weak, have loss of bark, have loss of foliage, and have stress breaks.

Lateral branch- A branch extending from a parent branch or stem.

Line clearance- The practice of removing vegetation from around overhead facilities.

Main leader- A dominant upright stem, usually the main trunk.

Multiple leaders - Many stems of vegetation originating from the same root system.

Node- A point on a stem at which a leaf or leaves are attached.

Overhead facilities- All electrical conductors and equipment that are attached to a utility pole and are used for the conveyance of electricity.

Permission- The act of receiving approval from the appropriate property owner, where the vegetation is located, in order to perform necessary preventative maintenance on the vegetation.

Plant- Relative to distribution vegetation management purposes, the definition is a tree, vine, or shrub.

Preventative maintenance-The pruning, trimming, removal or chemical treatment of vegetation, growing or existing in proximity to overhead facilities, for the purpose of preventing such growth from interfering with the overhead facilities.

Pruning- The removal, in a scientific manner, of dead, dying, diseased, interfering, objectionable, and/or weak vegetation branches.

Scaffold branch-A large limb that is, or will be part of the permanent branch structure of a tree.

Shrub- A low usually multi-stemmed woody plant.

Sucker growth- New growth originating from adventitious buds. Usually induced by removing a branch.

Tree- A woody perennial plant having a single usually elongate main stem.

Trim- See “Pruning”

Trim cycle- A predetermined period of time between preventative maintenance activities.

Trim zone- The area in and around overhead facilities where vegetation is removed.

Vegetation- Plant life such as trees, shrubs, vines, and brush that has a potential to interface with overhead facilities.

Vendor- A Vegetation Management service provider who has a Purchase Order to provide such services to the National Grid USA companies, Districts, and Arborists.

Vine- A plant whose stem requires support and which climbs by tendrils or twining.

NATIONAL GRID USA companies

NEW ENGLAND

DISTRIBUTION LINE VEGETATION MANAGEMENT REQUIREMENTS

APRIL 9, 2002

PURPOSE

To define a set of Distribution Line Vegetation Management Requirements that are implemented by the Company on a uniform basis. These requirements are to lay out the specifications for routine preventative maintenance and removal of; dead, unsound, and structurally weak branches and leaders. The Company's Distribution Line Vegetation Management Requirements are designed to address reliability and safety through the understanding of the dynamic interaction between vegetation and overhead facilities.

TRIM CYCLE

The recommended trim cycle is a five year cycle with a three year interim trim. The trim cycle is implemented on an annual basis, by identifying the feeders that are due to be trimmed and prioritizing them on a frequency reliability performance basis. The interim trim is implemented by identifying which feeders are halfway through the cycle. They are surveyed for growth and hazard situations and then interim trimmed accordingly. Customer Service lines are only trimmed on the trim cycle basis unless the Arborists determines that a special condition exists requiring an interim trim.

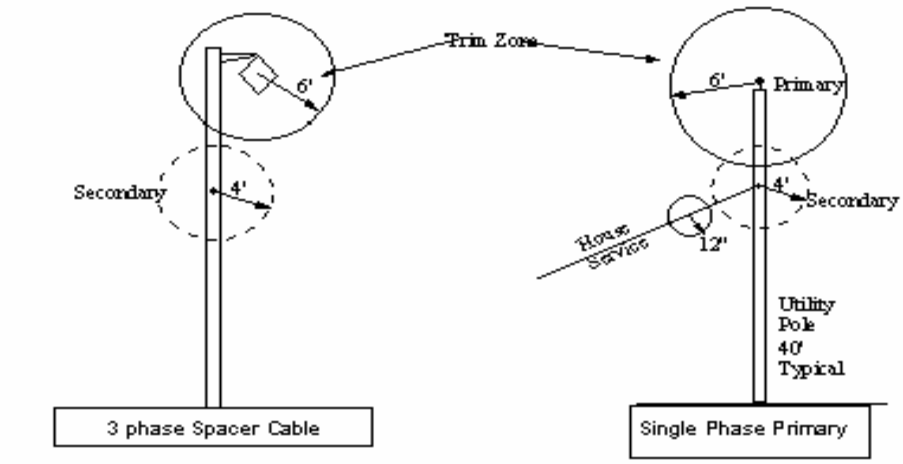
TREE TRIMMING ZONE SPECIFICATION REQUIREMENTS

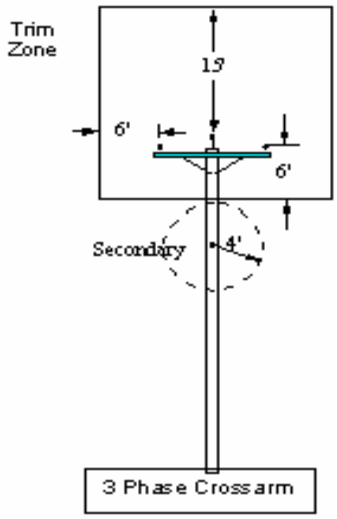
Table A below illustrate the minimum clearance distance required by the Company for all distribution line clearance maintenance activities based on Overhead facilities construction types. As with all programs there are exceptions to the rules and additional special conditions requirements. These are all clearly spelled out in the following sub-sections. These specifications are designed to prevent vegetation capable of interfering with the overhead facilities within a four year period.

TABLE A

CONSTRUCTION TYPE	TRIM ZONE
THREE PHASE PRIMARY ALL TYPES (except spacer cable)	ABOVE 15' SIDE 6' UNDER 6'
SINGLE PHASE PRIMARY ALL TYPES & THREE PHASE SPACER CABLE	ABOVE 6' SIDE 6' UNDER 6'
SECONDARY	FOUR FOOT RADIAL CIRCLE
HOUSE SERVICE	12" RADIAL CIRCLE

Vegetation Management
Distribution Line Maintenance
Minimum Requirements





Construction Type	Trim Zone
3 Phase Primary crossarm	Above 15' Side 6' Under 6'
3 phase spacer and Single phase primary	Above 6' Side 6' Under 6'
Secondary	Four Foot Radial Circle
House Service	12" Radial Circle

HAZARD REMOVALS WITHIN TRIM ZONE

Remove all hazardous branches from above or adjacent to the overhead facilities to protect the facilities until the next trim cycle.

SELECTIVE FLAT-CUTTING WITHIN THE TRIM ZONE

Targeted for flat-cutting will be tree species that are under the electric conductor(s) and are over 8' in height.

TRIM ZONE EXCEPTIONS

Clearances exceeding trim zone requirements

In the situation where the clearance already exceeds the trim zone requirements, due to prior trim cycle trimming activities, then the vendor will remove all prior cycle sucker growth back to the previous trim cycle wounds.

Clearances restricting trim zone requirements

Permissions restrictions-In the event that permission from a property owner to trim or remove in accordance with these specifications cannot be obtained, the following steps will be taken:

LIGHT TRIM- Computer or form entry with inclusion of town, street address and pole number.

REFUSAL TO TRIM- Computer or form entry with inclusion of property owner name, address, telephone number, pole number, description of site, and if possible, signature of property owner.

REFUSAL FOR HAZARD REMOVAL- If permission is denied for the removal of a hazardous limb/tree a computer or form entry with inclusion of the property owners name, address, telephone number, pole number, description of defect or hazard and if possible, property owners' signature. These serious hazards warrant a photo of the tree and follow up by the Arborist.

*Above information will be provided back to the Arborist on a regular basis, or at most, quarterly.

Structural restrictions- In the event that the main leader and/or scaffolding branches fall within the trim zone are determined not to interfere with the overhead facilities; structurally sound and; free of sucker growth within the trim zone, then the main leader and/or branch may remain in the trim zone.

TYPES, METHODS, AND TECHNIQUES

Acceptable Tree Trimming Types

There are three basic types of trimming that will be discussed in this section. They include; Crown Reduction (Top trimming), Side trimming, and Overhang trimming. There are two additional trimming terms used when discussing trimming types and they are under trimming and V or Through trimming. They will not be listed as separate types because they usually involves one or more of the types already listed. The type of trimming that is selected to be used should be based upon the tree to overhead facility relationship, factoring in the type of tree being trimmed and it's growth habits. The ultimate goal is to achieve the necessary clearance to provide a continuous supply of reliable electrical service free of interference from trees while maintaining, as close as possible, the natural characteristics of the tree being trimmed.

Crown Reduction - This type of trimming is also called "Top trimming". It is best when used on slow growing trees. The trimming methods employed to accomplish this affect include drop crotching and/or directional trimming. The trimming type reduces the top of the trees crown when the tree is directly located underneath the overhead facilities and is intended to give the tree a natural look. The trimming should be done with as few cuts as possible and the branches should cut back to a leader which will minimize the potential for sucker growth.

Side Trimming - Trees growing adjacent to, into, and towards overhead facilities should be side trimmed by removing the entire branch back to the main leader or at least free of the trim zone. Trees with branches that produce sucker growth when cut, should definitely be removed. Care should be taken to reduce the effect of unsightly notches by shaping adjacent branches.

Overhang Trimming - This is where the overhead facilities pass under a portion of the crown and the lower branches are removed to provide trim zone overhead clearance. If it is not possible to totally remove overhangs, then every attempt should be made to reduce the weight of the overhang by trimming the branches. All dead, damaged, or weakened overhang branches must be removed.

Acceptable Tree Trimming Methods

There are two basic methods employed in utility line clearance trimming,"Drop Crotching" and "Directional Trimming". These are the two methods that will be accepted by the arborists. On occasion a vendor may be requested to apply an alternative method to fulfill a special set of needs or criteria. Although not considered a trimming method, trees that are approximately 15 feet in height should be trimmed at the nodes. Alex Shigo calls this "First Order Pruning". The branches that should be retained are those that will produce future growth directionally away from the overhead facilities.

Drop Crotching - This method of trimming calls for removing some of the larger branches at variable distances below the top of the crown. It is intended to retain as much of the natural characteristics of the tree as possible while thinning the crown of the tree. This method of trimming should eliminate future sucker growth, when proper nodal pruning cuts are made, and reduces the amount of trimming work required in subsequent trimming operations.

Directional Trimming - The intent of this method is to direct future growth away from the overhead facilities. It is accomplished by cutting the growth to a lateral branch which will redirect it's future growth away from the overhead facilities.

In Dr. Alex L. Shigo's publication, "Pruning Trees Near Electric Utility Lines" he indicates that 90% of the time 3 branches can be removed to provide 90% of the clearance, which is his 90-3-90 concept. When utilizing these two methods to accomplish a trimming type, this concept should be considered as an employable technique. The use of the two methods will provide the maximum amount of clearance necessary to assure proper clearance from the overhead facilities while minimizing the amount of tree deformation occurring.

Acceptable Pruning Techniques

Pruning techniques and practices are fully explained and diagramed in ANSI A-300, and another excellent reference is Dr. Alex L. Shigo's publication "Pruning Trees Near Electric Utility Lines". Given the fact that these publications provide as excellent guides for this subject area, we feel that there is no need for further explanation.

HAZARD MITIGATION

All vegetation hazards which take one hour or more to remove should not be looked at as a preventative maintenance function but as a hazard mitigation function and should be managed as such. The hazard removal should be identified by the nearest pole location and should be scheduled for removal by a hazard mitigation crew, unless the hazard poses an immediate outage or safety situation. In the event of an immediate outage or safety situation the vendor should immediately notify the Arborist for a determination of removal by the vendor.

NATIONAL GRID USA companies

NEW ENGLAND

VEGETATION MANAGEMENT VENDOR REQUIREMENTS

APRIL 9, 2002

PURPOSE

To define the role and expectations of the Company's vendors in relation to vegetation management activities performed by the vendor for the Company. The role and expectations will include such items as; personnel, equipment, customer relations, government relations, Arborist relations, storm emergency implementation procedures, time management, workload implementation plans, wood waste management, and other related items.

VENDOR REQUIREMENTS

PERSONNEL

The vendor shall determine and provide the appropriate level of supervision required to maintain high quality workmanship and optimum productivity in a cost effective manner and in accordance with the supervisory requirements defined in this Chapter.

The vendor is to provide the appropriately trained and certified labor force required to maintain high quality workmanship and optimum productivity while implementing the vegetation management requirements and vendor requirements.

All services are billable in accordance with the vendor submitted labor and equipment rate sheets. Any services required by the Arborist, which are not on the vendor submitted rate sheets, will require prior approval from Supply Chain.

TRAINING

The vendor shall provide a minimum of eight hours of annual safety training and eight hours of annual professional development training per tree crew employee. All training shall be documented and all documentation shall be provided to the Company Arborist. The Company will provide straight labor time <u>only</u> for such training, up to these maximums. All daily tailgate work/safety meetings which are less than 1 hour are not to be counted towards this time. Any other training required by the vendor which is 1 hour or greater will not be billable once the 16 hour threshold has been reached. Where the vendor feels it is applicable, the vendor may mutually agree to combine their training with Arborist required informational sessions. In this event, the time required by the

Arborist will be fully billable including equipment.

VEGETATION MANAGEMENT SERVICES

Preventative Maintenance- Those services as described in the "Distribution Line Vegetation Management Requirements" section. All Preventative maintenance will be conducted on reliability prioritized feeder basis.

Hazard Tree Mitigation- Those services as described in the "Distribution Line Vegetation Management Requirements" section entitled Hazard Mitigation. The vendor personnel should continuously look for hazardous conditions, assess level of severity, and identify the hazard location by street and pole number. They should immediately report such hazard conditions to their immediate supervisor for reporting to the Arborist. In the event that they cannot reach their immediate supervisor, they should directly notify the Arborist.

Re-trims - All work which is determined by the Arborist to be inside the "Distribution Line Vegetation Management Requirements" which does not have documentation as to why the "Distribution Line Vegetation Management Requirements" could not be met will be required to be re-trimmed at the vendors expense. Any work that gains a change in permission status after trimming has occurred will be re-trimmed as a component of the Company's expense.

CUSTOMER RELATIONS

Workers shall be properly attired and act in a professional manner. Contact with customers shall be done in a businesslike manner and all requests shall be clear and precise to avoid customer misunderstanding or apprehension. Should there be a serious misunderstanding with a customer, which the vendor cannot fully address or alleviate, the vendor shall notify the Arborist.

UTILITY RELATIONS

Annual Vegetation Implementation Plan- The Arborist will inform the vendor supervisory personnel of the prioritized feeders to be maintained, the targeted mileage goals, and not to exceed cost per mile data. The vendor supervisory personnel will

provide the Arborist with a proposed Annual Vegetation Implementation Plan to accomplish the expected goals in a cost effective and productive approach. The Arborist will either accept the Annual Vegetation Implementation Plan or work with the vendor to modify it into an acceptable document to provide for other District concerns the Arborist may have. Once the Arborist has approved the plan it can be implemented. During the course of the year based on data provided by the Arborist, the plan may have to be adjusted to account for data fluctuations.

Communication- The vendor shall communicate with the Arborist on a routine basis on such matters including but not limited to: work progress; prior notification in changes to crew complement; lost time; etc. The vendor labor force will contact the Company daily and report; work location and daily location changes, observed overhead facility problems and outages particularly crew caused outages.

Data Management- The vendor is responsible for collecting, on company provided electronic data collectors, the required data information requested. In the event that an electronic data collector is not available, then data collection forms will be provided by the company requesting the relevant data information required. The vendor's personnel are responsible for the accuracy of the data that they are reporting and the safe handling of the electronic data collector. If the vendor's personnel breaks the data collector and it is found by the Company to be due to negligence on the vendor's personnel behalf, then the vendor will be charged for the replacement of the electronic data collector.

ALL DATA INFORMATION COLLECTED ON BEHALF OF A NATIONAL GRID USA COMPANY IS CONFIDENTIAL AND THE SOLE OWNERSHIP OF NATIONAL GRID USA.

STATE RELATIONS

The vendor is responsible for notifying the proper state official for all proposed vegetation management activities on state highways. If a permit is required, the company shall obtain the permit. Under specific situations, the Arborist will obtain the necessary permits. Copies of required permits will be kept on site with the crew.

PERMISSIONS

Private property- The Vendor must obtain permission from all private property owners

prior to working on private property, except where noted by the Arborist. The vendor will provide the customer, if not at home, with a Company Vegetation Management Program door knocker brochure and a vendor permission card. The vendor shall make a minimum of three documented and reasonable attempts at gaining permission from private property owners. All subsequent skips should be reported to the Arborist for follow up. The vendors crews will not trim or remove vegetation if contact with private property owners cannot be made or if the private property owner refuses to grant permission.

Municipal property - The vendor shall obtain permission to do tree work on municipal trees from the proper authority before doing the work. The vendor shall notify the proper municipal official (e.g. Tree Warden, etc.) and let them know where the vendor crews will be working. If a municipal official refuses clearances as specified in the "Distribution Vegetation Management Requirements" the vendor should document the restriction and inform the Arborist.

Permissions restrictions - In the event that permission from a property owner to trim and remove trees in accordance with these specifications can not be obtained, the following steps will be taken:

Light trim- Computer or paper form entry with inclusion of town, street address and/ or pole number.

Refusal to trim- Computer or paper form entry with inclusion of property owner name, address, telephone number, pole number, description of condition and possible signature.

Refusal for hazard removal- If permission is denied for removal of a hazardous limb or tree, a computer or form entry with inclusion of the property owner's name, address, telephone number, pole number, description of condition and possible signature. These serious hazard conditions warrant immediate follow up, including a photo of the tree by the vendor supervisor or the Arborist.

All information above will be reported back to the Arborist on a regular basis, or at most, quarterly.

EQUIPMENT

The vendor will provide equipment necessary for the performance of the requested services in accordance with the Distribution Line Vegetation Management Requirements.

This equipment shall be properly maintained, in good operating and presentable condition. The equipment must meet all applicable DOT, ANSI and OSHA Regulations/Standards.

Each Company Arborist will require a minimum number of truck mounted aerial lifts with the lift to be a minimum of fifty-foot platform height. Truck mounted aerial lifts with a platform height greater than 50' will, when required by the Arborist, be billed according to the labor and equipment rate sheet. Any equipment required by the Arborist, which are not on the vendor submitted rate sheets, will require prior approval from Supply Chain.

The vendor shall be responsible for supplying, at a minimum, a properly operating pager to all supervisory personnel who respond to requests by the Arborist. This is imperative for both normal business and emergency response.

WORK SITE CLEAN-UP

The vendor is responsible for all work sites to be properly cleaned of vegetation debris, including the legal and environmentally acceptable disposal of leaves, branches, wood, wood chips or slash in accordance with federal, state, and municipal regulations and guidelines..

In the Districts where wood chip disposal/work platform areas are provided, the woodchips must be free and clear of all trash and other undesirable debris that could reduce the resale of the woodchips. Attention to chipper maintenance for the consistent production of high quality woodchips is imperative.

HOURS OF OPERATION

Normal work schedule - 7:30 a.m.- 4:00 p.m. Adjustable based on agreement between the Arborist and Vendor. This is based on a 40-hour workweek and daily includes a 15 minute morning coffee break and a 30 minute lunch break. Also, up to 15 minutes each morning will be available to conduct D.O.T. record keeping and vehicle safety checks.

Travel and Chip Disposal Time- The hours of operation are to include travel to and from the work site, fuel time, and wood chip disposal. Until such time that the Arborist provides a convenient parking and chip disposal area, the vendor is responsible for assuring that travel and disposal time is at a minimum.

Excess Travel-In the event the Arborist needs to reassign crew(s) to a temporary work area, the Arborist may authorize additional travel time.

Additional Time- Time Not Worked due to; weather, equipment breakdown time and, Company scheduled holiday may be rescheduled and/or authorized by the Arborist.

STORM EMERGENCY RESPONSE

Vendor storm standby -During severe inclement weather, crew(s) may be placed on storm standby by the Arborist or their designee. They will be instructed as to which Company staging area to report to until such time needed for actual storm restoration work. The employee and equipment billable rates will take effect as soon as they are requested by the Company Arborist to be on standby status.

Arborist vendor storm response - During off-hour call out for storm or emergency work, the vendor will be allowed no more than 60 minutes to be at the work location from the time that the Arborist makes contact with the first vendor contact person.

Additional vendor storm response - The vendor will provide additional crews as requested by the System Arborist or their designee to the extent possible.
Storm Equipped Aerial Lift Trucks

All equipment required for storm response purposes shall be in a safe and reliable operating condition.

The following is required equipment during storm conditions:

Truck mounted aerial lift and lift to be a minimum of forty five foot platform height, and all necessary tools, equipment and clothing for storm restoration work including night lighting. Chippers are not required storm equipment unless requested by the Arborist.

NATIONAL GRID USA companies

NEW ENGLAND

VEGETATION MANAGEMENT INCENTIVE PROGRAM

APRIL 9, 2002

DESCRIPTION AND GUIDELINES VENDOR TREE CREWS

GOAL

To improve reliability, attain customer satisfaction, and accomplish more miles of trimming per year in a safe, efficient, and cost effective manner. Also, to assist the vendors in developing a more stable workforce.

MEASURABLE DRIVERS

Miles Trimmed- A predetermined mileage requirement is set by budget divided by avg. cost per mile. The bonus award is established, based on preset thresholds achieved over the requirement, up to a maximum of a 20% enhancement.
Customer Complaints- This is a complaint that requires remediation equal to or greater than $ 250.00 in costs and the crew was determined to be negligent by the National Grid companies Arborist. If the crew is required, by the National Grid companies Arborist, to re-trim a span or more due to poor performance by the crew then, this constitutes a complaint.
Crew Caused Outages- Any outage that was directly derived by an action of the vendor companies employee and was not a planned outage.
Avoidable Lost Time Accidents- This is an accident that could have been avoided by following the appropriate vendor company and/or OSHA safety practices and procedures.

QUARTERLY VENDOR CREW BASE AWARDS MEASURES

Quarterly each vendor crew employee directly involved in the National Grid companies District level distribution line maintenance incentive program will have the opportunity to achieve the maximum quarterly award of $400.00. This award is prorated based on the % over miles trimmed requirement attained and reduced based on the individual criteria.

QUARTERLY AWARD DISTRICT CRITERIA

TRIMMED MILES ACCOMPLISHED- If District miles trimmed productivity exceeds the projected quarterly weighted annual requirement by 20% or more they attain the full $ 400.00 quarterly award. Between the projected requirement and the 20% enhanced productivity they can attain $ 50.00 at 7.5% and an additional $ 50.00 for each 2.5% improvement up to 15.0% and an additional $ 75.00 to 17.5% and 125.00 at 20.0% for the full $ 400.00.

INDIVIDUAL CRITERIA (All deductions are tallied, totaled and deducted from the award.)

EMPLOYMENT STATUS- The employee must have been employed by the vendor and working in the evaluated National Grid Company District for the full evaluated quarter.
CUSTOMER COMPLAINTS- The first complaint will reduce the award by 30%, the second complaint by 60%, and the third complaint by 100%.
CREW CAUSED OUTAGE- 1 outage in a quarter will reduce the award by 50%. Greater than one, will disqualify the employee from the award.
AVOIDABLE LOST TIME ACCIDENT- No lost time accidents in a quarter are acceptable. 1 Lost time accident will disqualify the employee from the award.

CREW ANNUAL RECOGNITION AWARD

Annually each vendor crew employee directly involved in the National Grid companies District level distribution line maintenance incentive program will have the opportunity to achieve the maximum annual award. This award is prorated based on the following criteria.

ANNUAL AWARD DISTRICT CRITERIA

TRIMMED MILES ACCOMPLISHED- If National Grid USA trimmed Miles productivity exceeds the projected annual requirement by 20% or more, the vendor employee attains the full $1,000.00 annual award. Between the projected requirement and the 20% enhanced productivity they can attain $ 100.00 at 7.5% and an additional pro rated amount for each 2.5% improvement up to the full $ 1,000.00.

INDIVIDUAL CRITERIA (All deductions are tallied, totaled and deducted from the award.)

EMPLOYMENT STATUS - The employee must have been employed by the vendor and working in the evaluated National Grid USA Company service area for a minimum of a full quarter and their award will be prorated based on quarters worked.
CUSTOMER COMPLAINTS- Each individual complaint will reduce the award by 25%. Four or more complaints will disqualify the employee from the annual award.
CREW CAUSED OUTAGE- 1 outage in a year will reduce the award by 50%. Greater than one event will disqualify the employee from the annual award.
AVOIDABLE LOST TIME ACCIDENT- No lost time accidents in a quarter are acceptable. One event will disqualify the employee from the annual award.

All awards paid out will include, all related statutory overhead costs.

NATIONAL GRID USA companies

NEW ENGLAND

ARBORIST REQUIREMENTS

APRIL 9, 2002

PURPOSE

To define the role of the Company Arborist within the Vegetation Management Program. This description is to include the relationship between the Arborist Requirement, the Vendor Requirements, and Vegetation Management Requirements. The interrelationship is designed to insure high cost effective productivity without jeopardizing work quality and reliability. These requirements identify seven major areas.

PLAN, BUDGET, & ADMINISTRATION

Plan- The Arborist is responsible for developing long and short term plans for their respective management area. This is done by analyzing the vegetation management program data and conducting field survey validations to prioritize preventative maintenance activities and hazard tree removals on a feeder basis. They are also responsible for the workload planning of retail company R.O.W. maintenance activities, within the same management area.

Budget- In concert with the long and short term plans the Arborist is responsible for developing plan related budgets to show what financial resources will be required to carry out the identified plans. Annually, the Arborist will prepare a workload budget and plan of work required to meet the objectives of the long range plan. Once budgets are established and if they differ from the annual budget and workload plan, then it is the Arborists responsibility to reconcile the annual budget and plan to conform with the new budgeted dollars.

Administration- The Arborist is ultimately responsible for overall program administration, which includes; the implementation of the long, short, and annual term plans within the approved budgets, management of all collected data, and attainment of annual goals and objectives. They are also responsible for working with the vendor in the development and approval of the Annual Vegetation Implementation Plan which is how the annual plan and goals are achieved.

AUDIT AND EVALUATION OF INTERNAL AND EXTERNAL PROGRAM PERFORMANCE

Internal- The Arborist is responsible for electronic data and records management and maintenance, fiscal accountability, environmental laws and regulatory adherence, following Company policy, procedures, and regulations and complying with Company fiscal and regulatory internal audit standards.

External- Through the implementation of quality control practices, the Arborist is responsible for assuring that the vendor meets or exceeds Company standards and expectations. This is done by auditing vendor; performance, work practices, safety procedures and guidelines, equipment condition, and impact on reliability. The Arborist will monitor vendor; cost effectiveness, trimmed miles accomplished, data management recording accuracy, customer satisfaction, appearance, and communication skills.

EMERGENCY RESTORATION

The Arborist is responsible for knowing, understanding, and implementing the Company's storm and emergency restoration policies and procedures. They should be prepared to implement these policies and procedures within their respective management area when necessary. All vendor personnel working within the Arborists management area, will be fully informed and aware of what is expected of them during a storm or emergency restoration situation, by the Arborist.

INTERDEPARTMENTAL COORDINATION

Periodically the situation arises where the services of one or more departments, within the Company, may be needed to implement and /or complete a project. It is the Arborists responsibility to know all internal parties within their management areas that may be needed and to coordinate the engagement of their services to implement and/or complete the task, that the Arborists program needs implemented and/or completed.

EXTERNAL PUBLIC RELATIONS AND EDUCATION

It is important that the Arborist interacts with the vendor and the customer to assure that the customer understands the necessity, care, and professionalism of the services being provided to them, in order to obtain difficult or limited permission to provide the vegetation management program services. In the event that the vendor cannot get permission or gets limited permission from the property owner, the Arborist will take the documented information from the vendor and attempt to obtain the permission themselves. Regardless of the results, the Arborist should keep the documented event on file for future evidence. Whenever possible the Arborist should attempt to get a photo of the tree(s) in question.

This position will periodically have to make presentations about the importance and quality of service of the program to; neighborhood groups, civic groups, elected officials, government regulators, vendors, and other interested parties. These presentations can encompass; scientific technical, programmatic, legal, and procedural information.

PROFESSIONAL DEVELOPMENT

The Arborist is responsible for it's own continued professional development through; membership in affiliated professional organizations, career development, professional development, data management, electronic processing, office automation, and other associated seminars/courses.

TECHNICAL ADVISOR

Periodically, the Arborist is required to provide professional technical and scientific advise to other Company departments. On occasion the Arborist, may be required by the Company's legal department, to provide professional services as an expert witness.