

Massachusetts Electric Company
d/b/a
National Grid

Winter Storm 2008 Report

Book 4 of 5

February 23, 2009

Submitted to:
Massachusetts Department of
Public Utilities
Docket No. D.P.U. 09-01-B

Submitted by:

nationalgrid



FAX

To: Municipal Contact
From: Business Services Dept., National Grid
Date: December 21, 2008
Subject: National Grid Will Open Municipal Storm Center!

THIS IS TO INFORM YOU THAT BASED ON THE CURRENT WEATHER FORECAST, NATIONAL GRID WILL BE OPENING THEIR MUNICIPAL STORM CENTER ON **SUNDAY, DECEMBER 21, 2008 AT NOON.**

As you know from previous communications regarding this format, the storm center is a contact base for municipal authorities (police, fire, emergency DPW personnel, etc.) who have been designated by their own municipality as emergency personnel. **The storm center is not designated for general public use, so we remind you to please not give the phone numbers to anyone other than your designated municipal authorities, or to call the storm center with any non-storm, non-emergency items.** You may refer any National Grid customer to our 24-hour customer service center at 1-800-322-3223. We appreciate your cooperation with this request, as it will help in making sure the center runs as efficiently as possible.

As a reminder, these are the direct dial phone numbers to the center:

(978) 725-1904

FOR WIRES DOWN AND EMERGENCY SITUATIONS, POLICE AND FIRE CAN CALL THEIR NORMAL EMERGENCY LINE WHICH IS:

1-877-532-5231

YOU WILL BE NOTIFIED BY THIS SAME FAX PROCESS WITH ANY OTHER UPDATES REGARDING THE STORM CENTER ACTIVITIES. OTHERWISE, THE CENTER WILL OPEN AND REMAIN OPEN UNTIL YOU RECEIVE ANOTHER FAX NOTIFYING YOU THAT THE CENTER WILL BE CLOSING.

THANK YOU AGAIN FOR YOUR COOPERATION.

List of Contacted Public Officials Alerted to the Opening of the Municipal Storm Center

Name	Contact	Title	Phone	Fax	Email Addr
Medford	Frank Giliberti	Fire Chief			
Malden	Roy(Micky) Burns	Emerg. Mgmt. Dir.			
Melrose	John O'Brien	Fire Chief			
Melrose	Alan Ratte	Police Captain			
Everett	Fire Dispatch				
Revere	Eugene Doherty	Fire Chief			
Revere	Terrance Reardon	Police Chief			
Winthrop	Paul Flanagan	Fire Chief			
Winthrop	David Goldstein	Police Chief			
Winthrop	David Hickey	Director of Public Works			
Lowell	Edward Pitta	Fire Chief			
Lowell	Kenneth Lavallee	Police Chief			
Lowell	Sue Lemay	Emergency Planning			
Lowell	Mark Boldrighini				
Dracut	Leo Gaudette	Fire Chief			
Chelmsford	Paul Cohen	Town Manager			
Chelmsford	Jack Parow	Fire Chief			
Chelmsford	James Murphy	Police Chief			
Chelmsford	James Pearson, P.E.	Director of Public Works			
Tewksbury	Richard Mackey	Fire Chief			
Tewksbury	Alfred Donovan	Police Chief			
Billerica	Anthony Capaldo	Fire Chief			
Westford	Jodi L. Ross	Town Manager			
Westford	Richard Rochon	Fire Chief			
Westford	Thomas McEnaney	Police Chief			
Westford	Timothy Whitcomb	Emergency Management Director			
Tyngsboro	Richard Burrows	Deputy Police Chief			
Lynn	The Honorable Edward (Chip) Clancy	Mayor			
Lynn	Jim Carritte	Fire Chief			
Lynn	Robert Bourke	Emerg. Mgmt. Dir.			
Lynn	John Suslak	Police Chief			
Lynn	Jay Fink	DPW Commissioner			
Saugus	Joseph Attubato	Director			
Nahant	William Waters	Police Chief			
Swampscott	Maureen Gilhooley	Administrative Secretary			
Lawrence	Fire Dispatch	Dispatcher			

(Note: Phone, fax and e-mail information has been deleted for confidentiality reasons).

List of Contacted Public Officials Alerted to the Opening of the Municipal Storm Center

Name	Contact	Title	Phone	Fax	Email Addr
Lawrence	Officer In Charge	Officer In Charge			
Methuen	Fire Dispatch	Dispatcher			
Methuen	Officer In Charge	OIC			
Andover	Reginald Stapczynski	Town Manager			
Andover	Brian Pattulo	Police Chief			
Andover	Joseph Plantadosi	Director of Facilities			
N. Andover	Bruce Thibodeau	Director of DPW			
N. Andover	Jeff Coco	Emergency Dispatch			
Boxford	Gordon Russell	Police Chief			
Boxford	Warren Gould	Communications Director			
Haverhill	Richard Borden	Fire Chief			
Haverhill	Alan DeNaro	Police Chief			
Haverhill	D. Thompson	Deputy Police Chief			
Newburyport	Officer In Charge	Dispatch			
Newbury	Officer In Charge	Dispatch			
West Newbury	Officer In Charge	Dispatch			
Amesbury	Donald Swenson	Director of Emergency Management			
Salisbury	David L'Esperance	Police Chief			
Salem, Ma	David Cody	Fire Chief			
Beverly	William Scanlon	Mayor			
Beverly	Mark Foster	Emerg. Mgmt. Dir.			
Hamilton	Anne Marie Cullen	Dispatcher			
Wenham	Anne Marie Cullen	Dispatcher			
Topsfield	David Bond	Highway Superintendent			
Topsfield	Fire Dispatch				
Manchester	Andrew Paskalis	Fire Chief			
Gloucester	Barry McKay	FireChief/Emerg. Mgmt			
Gloucester	Joseph Aiello				
Rockport	John(Tom) McCarthy	Police Chief			
Essex	Brendhan Zubricki	Town Administrator			
Essex	Paul Goodwin	Supt. of Public Works			
Essex	Emergency Center	Emergency Center			
Salem, Nh	Paul J. Parisi	Deputy Fire Chief			
Salem, Nh	Paul T. Donovan	Police Chief			
Derry	George Klauber	Chief of Department			
Derry	Officer In Charge	Dispatch Police			

(Note: Phone, fax and e-mail information has been deleted for confidentiality reasons).

List of Contacted Public Officials Alerted to the Opening of the Municipal Storm Center

Name	Contact	Title	Phone	Fax	Email Addr
Unused (windham)	Thomas L. McPherson, Jr	Fire chief			
Unused (windham)	Officer In Charge	Dispatch Police			
Pelham	Michael A. Walker	Fire Chief			
Pelham	Joseph A. Roark	Police Chief			

(Note: Phone, fax and e-mail information has been deleted for confidentiality reasons).

List of Public Officials Invited to Participate in Conference Calls

Name	Contact	Title	Prim?	Phone	Fax	Email Addr
Malden	Michael Murphy	Fire Chief	No			
Melrose	Robert E. Beshara	DPW Director	No			
Everett	The Honorable Carlo DeMaria, Jr	Mayor	No			
Revere	The Honorable Thomas Ambrosino	Mayor	Yes			
Revere	Eugene Doherty	Fire Chief	No			
Revere	Terrance Reardon	Police Chief	No			
Winthrop	Richard White	Town Manager	No			
Lowell	Bernie Lynch	City Manager	No			
Dracut	Leo Gaudette	Fire Chief	No			
Chelmsford	Paul Cohen	Town Manager	No			
Tewksbury	David Cressman	Town Manager	Yes			
Tewksbury	Alfred Donovan	Police Chief	No			
Billerica	Anthony Capaldo	Fire Chief	No			
Billerica	Daniel Rosa	Police Chief	No			
Westford	Richard Rochon	Fire Chief	No			
Tyngsboro	Rosemary Cashman	Town Administrator	No			
Lynn	The Honorable Edward (Chip) Clancy	Mayor	No			
Lynn	Jim Carritte	Fire Chief	No			
Lynn	Robert Bourke	Emerg. Mgmt. Dir.	No			
Lynn	John Suslak	Police Chief	No			
Lynn	Michael Donovan	Inspectional Services Director	Yes			
Saugus	Joseph Attubato	Director	No			
Nahant	Mark Cullinan	Town Administrator	No			
Swampscott	Andrew Maylor	Town Administrator	No			
Lawrence	Shawn Conway	Lt of Community Police	No			
Methuen	Katherine Lavigne	Police Chief	No			
Andover	Reginald Stapeczynski	Town Manager	No			
N. Andover	Mark Rees	Town Manager	Yes			
N. Andover	Richard Stanley	Police Chief	No			
N. Andover	Bruce Thibodeau	Director of DPW	No			
Boxford	Gordon Russell	Police Chief	No			
Haverhill	James Fiorentini	Mayor	Yes			
Haverhill	Alan DeNaro	Police Chief	No			
Newburyport	The Honorable John Moak	Mayor	No			
Newburyport	Steven J. Cutter	Fire Chief	No			
Newburyport	Thomas Howard	City Marshall	No			

(Note: Phone, fax, and e-mail information has been deleted for confidentiality reasons).

List of Public Officials Invited to Participate in Conference Calls

Name	Contact	Title	Prim?	Phone	Fax	Email Addr
Newburyport	Raymond Goodwin	Emergency Service Coordinator	No			
Newburyport	David Zinck	Wiring Inspector/City Electrician	No			
Newburyport	Geordie Vining	Sr. Project Manager	Yes			
Newbury	Michael Reilly	Police Chief	No			
West Newbury	Jonathan Dennis	Police Chief	No			
Amesbury	Thatcher Kezer III	Mayor	Yes			
Salem, Ma	David Cody	Fire Chief	No			
Salem, Ma	Robert St. Pierre	Police Chief	No			
Beverly	Rick Pierce	Fire Chief	No			
Beverly	Mark Foster	Emerg. Mgmt. Dir.	No			
Hamilton	Candice Wheeler	Town Administrator	No			
Wenham	Jeffrey Chelgren	Town Administrator	No			
Topsfield	Virginia Wilder	Town Administrator	No			
Topsfield	David Bond	Highway Superintendent	No			
Manchester	Andrew Paskalis	Fire Chief	No			
Gloucester	Barry McKay	FireChief/Emerg. Mgmt	No			
Rockport	John(Tom) McCarthy	Police Chief	No			
Essex	Brendhan Zubricki	Town Administrator	No			
Salem, Nh	Paul J. Parisi	Deputy Fire Chief	No			
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Unused (windham)	Thomas L. McPherson, Jr	Fire chief	No			
Pelham	Michael A. Walker	Fire Chief	No			

(Note: Phone, fax, and e-mail information has been deleted for confidentiality reasons).

From: NBRO CS Communications
Sent: Saturday, December 13, 2008 9:21 AM
To: Northboro CSC Communications Ctr; Northboro CSC Team Leaders; Accounts Processing Northboro Reps; Accounts Processing Northboro Supervisors; Rhode Island Contact Center-All
Subject: Storm Update: Northboro On-Hold Safety Messages

Though weather conditions have cleared, storm damage remains.

While crews continue to work on power restoration and customers resume their normal day-to-day activities, it is important to keep safety in the forefront of our minds.

To that end, we are activating the following on-hold, safety messages as a reminder to customers:

As crews work to restore power, National Grid reminds customers about the following important information regarding safety during power outages:

- *Never touch fallen power lines or anything in contact with fallen wires such as a car, fence or tree.*
- *Disconnect sensitive appliances such as VCRs, DVDs, televisions, computers, and microwave ovens to avoid potential power surge damage when electricity is restored.*
- *Turn off any electrical equipment or appliances that were on when power went off, but leave one light on so you will know when power is restored.*
- *Keep refrigerator and freezer doors shut. Food will stay six to nine hours in a refrigerator without spoiling. Frozen foods will keep about 24 hours.*
- *If you choose to use a portable generator during a power outage you must make sure the main circuit breaker in your electric service panel box is in the OFF position or, in older electric service panel boxes, that the main fuse block is removed. This is necessary to prevent your generator's electricity from going back into the power lines in the street and potentially endangering the lives of line crews and other emergency workers. Generator exhaust contains deadly carbon monoxide – never run an electric generator inside your house.*

Please refer to these safety tips as needed when speaking with customers on the phone.

From: NBRO CS Communications
Sent: Sunday, December 14, 2008 11:56 AM
To: Northboro CSC Communications Ctr; Northboro CSC Team Leaders; Accounts Processing Northboro Reps; Accounts Processing Northboro Supervisors; Robbins, Charles; Reyes, Miriam; Kaufman, Eric; Labrecque, Holly; Bourgeois, Marilyn; Morancey, Maureen; Lyon, Jo-Ann; Pope, Julette; Mack, Troy; Valerio, Marielis; Duffy, Jane; Londono, Stella; Conboy, Patrick J.; Moran, Rita A.
Subject: Upfront Messaging- Communication
Importance: High

Below is the recorded upfront message and a list of the towns and current ETRS.

"Due to the storm which caused significant wide spread damage, our crews are working & will continue to work as safely & quickly as possible until all customers have been restored. Estimation times for (list town) are (provide time). These estimated are based on the latest information available. Some towns may be restored earlier than the estimated times provided or later if repair work is more difficult than previously anticipated. We thank you for your patience."

Granite State:

Sunday Evening

Salem

Monday Evening

Pelham

No ETR

Alstead

Derry

Enfield

Hanover

Walpole

Windam Surry

Merrimack Valley

Sunday Evening

Amesbury

Dracut

Lowell

North Andover

Salisbury

Tewksbury

Tyngsborough

Monday Evening

Andover

Billerica

Chelmsford

Haverhill

Lawrence

Methuen

Westford

No ETR

Boxford

Newbury

Newburyport

West Newbury

Central Mass Area Message: General message about our commitment to restoring service as safely and quickly as possible. No specific ETRs or towns are mentioned as there are too many affected to list

South Shore

No ETR

Brockton

South East

Sunday Evening

Attelboro

Northboro

Marlboro

Western

Monday Evening

Goshen

Tuesday Afternoon

Charlemont

Hancock

Florida

Tuesday Evening

Cheshire

Hawley

Heath

Rowe

nationalgrid

The power of action.

Energy Delivery

Transmission

Our Com



Our Business

News Center

Investors

Careers

News Releases

Logo

Photos

News Releases

This webpage displays the last six months of our news releases. To see any year in full, click on the year to the right. To begin, please select the company you want to view:

*To view news releases for Rhode Island-Gas, please go to the [News Releases](#) on the

Thursday, December 17, 2009 - National Grid New England Ice Storm Response

As of 3 p.m. today, National Grid has restored power to approximately 262,000 customers, or 82 percent of the 325,000 homes and businesses in eastern New England that were affected by a crippling ice storm that swept through the northeast last week, leaving a swath of devastation in its wake.

[Full Text](#)

Monday, December 22, 2008 - National Grid Offers Important Information to Upstate New York Customers about Gas Leak Safety and Avoiding Carbon Monoxide Hazards

With the winter heating season underway, National Grid reminds its Upstate New York customers to do if they suspect a natural gas leak and how to avoid potentially deadly carbon monoxide hazards.

[Full Text](#)

Thursday, December 18, 2008 - National Grid Says Ice Storm Finish Line in Sight

National Grid has restored approximately 309,900 of its New England customers, or 95 percent of those initially affected by the devastating ice storm that ravaged parts of the northeast last week.

[Full Text](#)

Wednesday, December 17, 2008 - National Grid Presses Ahead with Service Restoration in New York Ice Storm Response

As of 3 p.m. today, National Grid has restored power to more than 221,000 customers, or 82 percent of the more than 229,000 homes and businesses in eastern New York that were affected by a crippling ice storm that swept through the northeast last week.

[Full Text](#)

Wednesday, December 17, 2008 - National Grid New England Ice Storm Service 90 Percent Mark

December 17, 2008 - As of 1 p.m. today, National Grid has restored power to more than 325,000 homes and businesses in its New England service area that were affected by hit the northeast last week.

[Full Text](#)

Wednesday, December 17, 2008 - National Grid New York Ice Storm Response

As of 3 p.m. today, National Grid has restored power to more than 205,000 customers percent of the more than 229,000 homes and businesses in eastern New York that were crippled by ice storm that swept through the northeast last week, leaving a swath of devastation.

[Full Text](#)

Monday, December 15, 2008 - National Grid Pushes Ahead on Storm Restoration Massachusetts and New Hampshire with an Eye on the Weather

National Grid continues to make steady progress restoring service to homes and businesses the massive ice storm that hit portions of Massachusetts and New Hampshire late last week.

[Full Text](#)

Monday, December 15, 2008 - National Grid Pushes Ahead on Storm Restoration Massachusetts and New Hampshire with an Eye on the Weather

National Grid continues to make steady progress restoring service to homes and businesses the massive ice storm that hit portions of Massachusetts and New Hampshire late last week.

[Full Text](#)

Monday, December 15, 2008 - National Grid Pushes Ahead on Storm Restoration the Weather in Capital Region

National Grid continues to make steady progress restoring service to homes and businesses the massive ice storm that hit portions of eastern New York late last week.

[Full Text](#)

Sunday, December 14, 2008 - National Grid Restores more than Half of All Customers in New England Affected by Severe Ice Storm

Weather forecasts predicting potential wind gusts of up to 40 miles per hour may have power restoration efforts to the homes and businesses that lost power due to a severe ice storm that hit the northeastern United States late last week, National Grid officials said.

[Full Text](#)

Sunday, December 14, 2008 - Adverse Weather Forecast may Hamper Restoration Efforts

Weather forecasts predicting potential wind gusts of more than 40 miles per hour may hamper power restoration efforts to the homes and businesses that lost power due to a severe ice storm that hit the northeastern United States late last week, National Grid officials said.

[Full Text](#)

Sunday, December 14, 2008 - National Grid Contributes \$225,000 to American Red Cross Relief Efforts in Areas Devastated by Ice Storm Damage

Northeastern New York and Central and Northeastern Massachusetts offices receive \$225,000 in relief efforts.

[Full Text](#)

Saturday, December 13, 2008 - National Grid Defines Restoration Timetable for Customers Affected by Severe Ice Storm in New England

Restoration Work Progresses as Workforce Continues to Grow

[Full Text](#)

Saturday, December 13, 2008 - News Release: National Grid Defines Restoration Timetable for Customers Affected by Severe Ice Storm in Capital Region

Restoration Work Progresses as Workforce Continues to Grow

[Full Text](#)

Friday, December 12, 2008 - National Grid Intensifies Response to Ice, Wind Storm; Field Force, Support Staff Numbers Increase

Assistance from All Departments in U.S., Mutual Aid Crews from Midwest and Southern Company Field Forces

Full Text**Friday, December 12, 2008 - National Grid Advises New Hampshire Gas Customers to Clear Ice and Snow from Around Meters and Vents**

In the wake of the ice and wind storm that swept across New Hampshire last night and today, National Grid is urging natural gas customers to clear any ice and snow from their gas meters and vents.

Full Text**Friday, December 12, 2008 - National Grid Launches Massive Response to Ice, Wind Storm Damage in New England, New York**

Company using all available resources regionally to address service interruptions in four states

Full Text**Friday, December 12, 2008 - National Grid Offers Tips on Preparing for Storms as Company Prepares for Potential Ice, Wind in Portions of New England**

National Grid's Emergency Preparedness, Operations and other teams have been following forecasts of an impending storm that is expected to bring a mix of heavy rains, ice and wind to various parts of New England.

Full Text**Friday, December 12, 2008 - National Grid Names New Vice President of Inclusion and Diversity**

Tom King, president of National Grid's U.S. business, has announced the appointment of Nereida Perez, National Grid's first vice president of Inclusion and Diversity.

Full Text**Monday, December 08, 2008 - National Grid Names New Hampshire Government Relations Director**

National Grid has named Debra Hale of Hooksett, New Hampshire as its director of Government Relations in New Hampshire.

Full Text**Thursday, December 04, 2008 - National Grid Launches a Six-City Upstate New York Month-Long Energy Efficiency Truck Tour**

Tour Promoting ThinkSmartThinkGreen.com to Visit the Watertown Area

Full Text**Wednesday, December 03, 2008 - National Grid Brings Wildlife Filmmaker and Emmy Award Winner Chris Palmer to Utica College**

National Grid Debuts College Speaker Series with Presentation about Facing Wild Animals without Getting Eaten

Full Text**Wednesday, December 03, 2008 - National Grid College Speaker Series Kicks Off With Wildlife Filmmaker and Emmy Award Winner Chris Palmer at Utica College**

Kicking off the National Grid College Speaker Series in New York, acclaimed Wildlife Filmmaker Chris Palmer will discuss his adventures filming sharks and bears & without getting eaten!

Full Text**Tuesday, December 02, 2008 - National Grid Launches a Six City Upstate Month Long Energy Efficiency Truck Tour**

Tour Promoting ThinkSmartThinkGreen.com to Visit the Syracuse, Watertown, Utica, Albany, Glens Falls and Buffalo Areas in December

Full Text**Tuesday, December 02, 2008 - National Grid Supports Recent Expansion of New York State Consumer Protections Regarding Energy Service Companies**

Customers should verify ID of sales representatives. All National Grid employees are required to carry a company photo ID.

Full Text**Monday, November 24, 2008 - National Grid Files 2009 Massachusetts Natural Gas Energy Efficiency Plan**

Proposed Funding to Increase by \$5 Million, or 33 Percent, over 2008 Levels

Full Text

News Releases

National Grid Offers Tips on Preparing for Storms as Company Prepares for Potential Ice, Wind in Portions of New England

National Grid's Emergency Preparedness, Operations and other teams have been following forecasts of an impending storm that is expected to bring a mix of heavy rains, ice and wind to various parts of New England. The inclement weather is moving up the East Coast today, with the most severe effects anticipated later tonight and the early morning hours tomorrow. Depending on the severity of the storm, some parts of National Grid's New England service area could experience service interruptions.

In anticipation of this event, National Grid has undertaken pre-storm planning across its service territory in New England and upstate New York. Plans for New England include bringing in a total of more than 200 outside line and tree crews, staffing up the Customer Contact center, preparing to open the company's central emergency response center, holding system-wide conference calls to ensure preparations are well coordinated, and contacting regional and local officials to inform them of advance plans.

"Based on the forecasts we've seen so far, we have begun moving some crews into southern New Hampshire and central and western Massachusetts tonight. We'll also keep crews on overnight in southeastern Massachusetts and Rhode Island this evening," said Chris Root, National Grid senior vice president of Operations. "Positioning crews in this way will allow us to get a jump on problems this evening and get an early start tomorrow if we have customers out of service while avoiding the hazards of having to move large numbers of people in what might be treacherous conditions."

National Grid advises its customers to be prepared. Severe icing can cause local electrical service interruptions. It's a good idea to have a number of working flashlights, at least one battery-operated radio and an extra supply of batteries in your home. A radio is a good way to stay in touch, as National Grid provides news media with timely information regarding service restoration efforts. Also, post National Grid's customer contact center number, 800-322-3223, near your telephone so it will be handy if needed.

National Grid offers the following tips for customers to minimize inconvenience and maximize safety in the event that storm-related power interruptions do occur.

- Never touch downed power lines, and always assume that any fallen lines are live electric wires. If you see one, report it immediately to National Grid or your local emergency response organization.
- If you use a generator to supply power during an outage, be sure to only operate it outdoors. Before operating generators, be sure to disconnect from National Grid's system by shutting off the main breaker located in the electric service panel. Failure to do this could jeopardize the safety of crews working to restore power.
- If you lose power, turn off any appliances that were on when the power went off, but leave one light on so you will know when power is restored.
- Power problems can sometimes interrupt public water supply systems or disable well pumps, so it's an especially good idea to keep a supply of bottled drinking water handy, as well as some canned food.
- People who depend on electric-powered life support equipment, such as a respirator, should let National Grid know. To register as a National Grid life support customer, call the company's customer contact center at 800-322-3223.

Time-Tested Plan Restores Power Quickly

When a power outage occurs in your neighborhood, it may in fact be affecting thousands of customers. Whose electricity is restored first?

National Grid emergency crews follow a time-tested plan to begin restoring service as safely and quickly as conditions allow. Accurate damage surveys, resource assessments and restoration estimates are critical in the preliminary stages of any major weather event. Credible and consistent communication with local public officials and the media is maintained throughout the duration of the restoration effort.

First, our crews clear away hazards such as live, downed lines. The clean-up of storm-damaged trees and branches

removed from our electric facilities remains the responsibility of the customer or property owner, whether private or municipal.

Next come repairs to main transmission facilities, including towers, poles and high-tension wires that deliver power from generating plants.

Recovery work at local substations is also a high priority, because power flows from transmission lines through substations on its way to you.

Circuits and transformers in neighborhoods and the wires that connect them to your home come next—starting with areas that involve the most customers.

While waiting for your power to return, please know that we're doing everything we can to restore electric service as quickly as possible.

National Grid is an international energy delivery company. In the U.S., National Grid delivers electricity to approximately 3.3 million customers in Massachusetts, New Hampshire, New York and Rhode Island, and manages the electricity network on Long Island under an agreement with the Long Island Power Authority (LIPA). It is the largest distributor of natural gas in the northeastern U.S., serving approximately 3.4 million customers in Massachusetts, New Hampshire, New York and Rhode Island. National Grid also owns over 4,000 megawatts of contracted electricity generation that provides power to over one million LIPA customers.

News Releases

National Grid Launches Massive Response to Ice, Wind Storm Damage in New England, New York

National Grid has marshaled hundreds of line and forestry crews, supported by many hundreds more customer service, operations and support personnel to respond to a severe ice and wind storm that swept across eastern New York, Massachusetts, Rhode Island and New Hampshire last night and this morning.

As of noon today, the company was reporting that more than 500,000 homes and businesses throughout that region were without electrical service as heavy ice brought down trees, limbs and power lines in many areas, while strong coastal winds caused further damage in the southeast portions of New England.

In New York, the hardest hit areas of the eastern division include the greater Capital region in and around Albany. Approximately 187,000 customers in the eastern division are without service. In New England, approximately 290,000 homes and businesses in Massachusetts have been affected, along with 22,000 in New Hampshire and 6,000 in Rhode Island.

Damage assessment surveys are still being conducted, but company officials said it is clear at this time that restoration to all customers will take several days and perhaps longer. The company is working closely with state, regional and local emergency coordinators, and has invoked emergency response plans across the affected regions.

"We have a well-practiced emergency response plan across our entire operation, and we will not hesitate to take advantage of any and all resources available to us to complete our work as quickly and safely as possible," said Christopher E. Root, senior vice president of Electricity Distribution Operations. "We had been tracking this storm and made sure we had resources in place in both New England and New York, and we will continue to take advantage of the broad scope of National Grid resources from our entire U.S. operation."

Root said that company resources are being allocated specifically within the New England and New York geography. For instance, in New York line crews and supervisory personnel from the western and central operating divisions traveled to the Capital yesterday to augment eastern division crews at first light this morning. In addition, crews from Long Island are being directed to eastern New York.

Similarly, New England crews from areas lightly affected by the damage are being shifted to the hardest areas, particularly central and northeastern Massachusetts and into New Hampshire. The company also is making use of contract crews in both regions.

So far, more than 650 crews have been dedicated to the restoration, backed by hundreds of logistics, safety and administrative personnel. The company has requested assistance from outside the region, and more than 300 contractor crews from Michigan, Ohio, Pennsylvania, Connecticut and Maryland will be arriving in the affected areas today and tomorrow.

Safety and preparedness are primary concerns in a major storm, and National Grid is urging its customers to use extreme caution in the storm damaged areas. National Grid offers the following tips for customers to minimize inconvenience and maximize safety in the event that storm-related power interruptions do occur.

Never touch downed power lines, and always assume that any fallen lines are live electric wires. If you see one, report it immediately to National Grid or your local emergency response organization.

If you use a generator to supply power during an outage, be sure to only operate it outdoors. Before operating generators, be sure to disconnect from National Grid's system by shutting off the main breaker located in the electric service panel. Failure to do this could jeopardize the safety of crews working to restore power.

If you lose power, turn off any appliances that were on when the power went off, but leave one light on so you will know when power is restored.

Power problems can sometimes interrupt public water supply systems or disable well pumps, so it's an especially good idea to keep a supply of bottled drinking water handy, as well as some canned food.

People who depend on electric-powered life support equipment, such as a respirator, should let National Grid know. To register as a National Grid life support customer, call the company's Customer Service Center. In New York, that number is 800-642-4272. In New England, the number is 800-322-3223.

Time-Tested Plan Restores Power Quickly

National Grid emergency crews follow a time-tested plan to begin restoring service as safely and quickly as conditions allow. Accurate damage surveys, resource assessments and restoration estimates are critical in the preliminary stages of any major weather event. Credible and consistent communication with local public officials and the media is maintained throughout the duration of the restoration effort.

First, our crews clear away hazards such as live, downed lines. The clean-up of storm-damaged trees and branches removed from our electric equipment remains the responsibility of the customer or property owner, whether private or municipal.

Next come repairs to main transmission equipment, including towers, poles and high-tension wires that deliver power from generating plants. Recovery work at local substations is also a high priority, because power flows from transmission lines through substations on its way to you.

Circuits and transformers in neighborhoods and the wires that connect them to your home come next—starting with areas that involve the most customers.

While waiting for your power to return, please know that we're doing everything we can to restore electric service as quickly as possible.

National Grid is an international energy delivery company. In the U.S., National Grid delivers electricity to approximately 3.3 million customers in Massachusetts, New Hampshire, New York and Rhode Island, and manages the electricity network on Long Island under an agreement with the Long Island Power Authority (LIPA). It is the largest distributor of natural gas in the northeastern U.S., serving approximately 3.4 million customers in Massachusetts, New Hampshire, New York and Rhode Island. National Grid also owns over 4,000 megawatts of contracted electricity generation that provides power to over one million LIPA customers.

News Releases

12/12

National Grid Intensifies Response to Ice, Wind Storm Damage as Field Force, Support Staff Numbers Increase

A growing army of more than 5,000 field and support personnel using hundreds of vehicles and tons of material are being directed to National Grid's restoration efforts following a severe ice and wind storm that swept across eastern New York, Massachusetts, Rhode Island and New Hampshire last night and this morning. Company officials believe this is the worst storm to impact these areas in more than a decade.

An effort that began last night and intensified early today is a response to the more than 500,000 homes and businesses throughout the regions that lost electrical service as heavy ice brought down trees, limbs and power lines in many areas, while strong coastal winds caused further damage in the southeast portions of New England.

As of 3 p.m. today, the total number of homes and businesses without power was approximately 462,000. In New England, there currently 250,000 homes and businesses without services in Massachusetts, 8,600 in New Hampshire and 2,800 in Rhode Island.

In New York, the hardest hit areas of the eastern division include the greater Capital region in and around Albany. Approximately 200,000 customers in the eastern division are without service. Although crews have been working in this area since last night, the overall number has increased during the day as field surveys were completed and customers continued to report outages.

"We have made progress today in many areas, but the fluctuation in customer counts we've seen is typical at this stage of a major storm," said Christopher E. Root, senior vice president of Electricity Distribution Operations. "We recognize the severity of this storm and the impact on our customers, and we've been able to mobilize a large number of resources that will only get bigger as this effort continues."

National Grid currently has 1,300 line and forestry crews from the company and contractors working in the field or en route to restore power across the four affected states. This includes company and contractor crews from as far away as Buffalo and Long Island, as well as New England crews that have shifted from areas not affected by the storm. Also part of the field contingent will be

crews from Michigan, Ohio, Pennsylvania, Connecticut and Maryland.

More than 1,900 personnel from other company departments, including workers who typically service the company's natural gas network, are supporting field forces through tasks ranging from restoring individual services, fueling vehicles and making arrangements for meals and hotels.

Damage assessment surveys are still being conducted, but company officials said it is clear at this time that restoration to all customers will take several days and perhaps longer. The company is working closely with state, regional and local emergency coordinators, and has invoked emergency response plans across the affected regions.

National Grid customer service personnel are averaging approximately 3,000 customer calls per hour, as the company's call centers have added personnel and adjusted work schedules to accommodate the dramatically increased volume. The company currently has identified more than 7,000 individual items in the field that will need company attention, ranging from downed lines and open circuit breakers to broken poles and trees leaning against circuits.

Safety and preparedness are primary concerns in a major storm, and National Grid is urging its customers to use extreme caution in the storm damage areas. National Grid offers the following tips for customers to minimize inconvenience and maximize safety in the event that storm-related power interruptions do occur.

Never touch downed power lines, and always assume that any fallen lines are live electric wires. If you see one, report it immediately to National Grid or your local emergency response organization.

If you use a generator to supply power during an outage, be sure to only operate it outdoors. Before operating generators, be sure to disconnect from National Grid's system by shutting off the main breaker located in the electric service panel. Failure to do this could jeopardize the safety of crews working to restore power.

If you lose power, turn off any appliances that were on when the power went off, but leave one light on so you will know when power is restored.

Power problems can sometimes interrupt public water supply systems or disable well pumps, so it's an especially good idea to keep a supply of

bottled drinking water handy, as well as some canned food.

People who depend on electric-powered life support equipment, such as a respirator, should let National Grid know. To register as a National Grid life support customer, call the company's Customer Service Center. In New York, that number is 800-642-4272. In New England, the number is 800-322-3223.

Time-Tested Plan Restores Power Quickly

National Grid emergency crews follow a time-tested plan to begin restoring service as safely and quickly as conditions allow. Accurate damage surveys, resource assessments and restoration estimates are critical in the preliminary stages of any major weather event. Credible and consistent communication with local public officials and the media is maintained throughout the duration of the restoration effort.

First, our crews clear away hazards such as live, downed lines. The clean-up of storm-damaged trees and branches removed from our electric equipment remains the responsibility of the customer or property owner, whether private or municipal.

Next come repairs to main transmission equipment, including towers, poles and high-tension wires that deliver power from generating plants. Recovery work at local substations is also a high priority, because power flows from transmission lines through substations on its way to you.

Circuits and transformers in neighborhoods and the wires that connect them to your home come next—starting with areas that involve the most customers.

While waiting for your power to return, please know that we're doing everything we can to restore electric service as quickly as possible.

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New Hampshire, New York and Rhode Island. National Grid also owns over 4,000 megawatts of contracted electricity generation that provides power to over one million LIPA customers.

News Releases

National Grid Defines Restoration Timetable for Customers Affected by Severe Ice Storm in New England NATIONAL GRID DEFINES RESTORATION TIMETABLE FOR CUSTOMERS AFFECTED BY SEVERE ICE STORM IN NEW ENGLAND

Restoration Work Progressing; Company Urges Customers to Stay Safe during Restoration

At this point, the company anticipates having the majority of service restored by midnight on Monday. The company expects to have smaller outages from some of the hardest hit areas restored by Tuesday night, as field forces continue to make progress attacking damage caused by the ice storm.

In addition, over the next 24 hours the company expects to be able to provide more specific restoration times for localities.

As of 6 p.m., crews have restored service to nearly 163,000 homes and businesses throughout its service territory in Massachusetts, New Hampshire and Rhode Island, which is nearly half of the 325,000 customers originally affected by the storm. At this time, approximately 150,000 customers in Massachusetts are without power, as well as 12,000 New Hampshire customers. Power has been restored to all customers in Rhode Island.

National Grid expects to continue to make significant progress on Sunday. The focus will be to continue to restore service to key public facilities with a special focus on restoring service to schools and other critical customers before Monday. By Monday night the company expects that all major restoration will be complete and work will focus on small pockets of significant damage.

The storm caused approximately 4,000 individual issues that required attention, ranging from downed lines and open circuit breakers to broken poles and trees leaning against circuits.

"We have made good progress in some difficult working conditions so far, with 163,000 homes and businesses restored since Friday morning," said Christopher E. Root, senior vice president of Electricity Distribution Operations. "Our goal now is to finish work on the major backbones of our network by Sunday night."

Although crews have been working on all levels of the network, priority work in an emergency always begins with the bulk power transmission network, substations and primary circuits that feed power across a broad geography and serve a large number of customers.

The storm that began Thursday evening and continued into the morning hours on Friday resulted in more than 325,000 homes and businesses losing service across a broad swath of the company's New England service territory.

The company has mobilized approximately 800 line, forestry and service crews to work on the restoration effort, supported by nearly 1,300 workers handling customer service calls, logistics and other support functions. In addition to National Grid and contractor crews from across New England, utility and contractor crews from as far away as Michigan, Ohio, Pennsylvania, Maryland and Virginia continue to arrive in the region.

National Grid continues to work with state, county and local emergency response officials, and is reaching out to municipal officials to keep them apprised of progress and schedules.

"We appreciate the patience and understanding that everyone has exhibited thus far," Root said. "Although our overall target is late Monday, I want to stress that we have been and will continue to restore service to homes and businesses every hour of every day. Some will certainly be back on sooner than others, but our crews are working hard to restore as many as possible, as quickly and safely as possible."

National Grid customer service personnel handled as many as 3,000 customer calls per hour during peak periods, and the company's call centers have added personnel and adjusted work schedules to accommodate the dramatically increased volume.

Customers Urged to Make Safety a Priority

Safety and preparedness are primary concerns in a major storm, and National Grid is urging its customers to use extreme caution in the storm-damaged areas. National Grid offers the following tips for customers to minimize inconvenience and maximize safety during the restoration.

- Never touch downed power lines, and always assume that any fallen lines are live electric wires. If you see one, report it immediately to National Grid or your local emergency response organization.

- If you use a generator to supply power during an outage, be sure to only operate it outdoors. Before operating generators, be sure to disconnect from National Grid's system by shutting off the main breaker located in the electric service panel. Failure to do this could jeopardize the safety of crews working to restore power.
- If you lose power, turn off any appliances that were on when the power went off, but leave one light on so you will know when power is restored.
- Power problems can sometimes interrupt public water supply systems or disable well pumps, so it's an especially good idea to keep a supply of bottled drinking water handy, as well as some canned food.
- People who depend on electric-powered life support equipment, such as a respirator, should let National Grid know. To register as a National Grid life support customer, call the company's Customer Service Center. In New York, that number is 800-642-4272. In New England, the number is 800-322-3223.

National Grid emergency crews follow a time-tested plan to begin restoring service as safely and quickly as conditions allow. Accurate damage surveys, resource assessments and restoration estimates are critical in the preliminary stages of any major weather event. Credible and consistent communication with local public officials and the media is maintained throughout the duration of the restoration effort.

First, our crews clear away hazards such as live, downed lines. The clean-up of storm-damaged trees and branches removed from our electric equipment remains the responsibility of the customer or property owner, whether private or municipal.

Next come repairs to main transmission equipment, including towers, poles and high-tension wires that deliver power from generating plants. Recovery work at local substations is also a high priority, because power flows from transmission lines through substations on its way to you.

Circuits and transformers in neighborhoods and the wires that connect

them to your home come next—starting with areas that involve the most customers.

While waiting for your power to return, please know that we're doing everything we can to restore electric service as quickly as possible.

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News Releases

National Grid Contributes \$225,000 to American Red Cross in Areas Devastated by Ice Storm Damage

National Grid is donating \$225,000 to the American Red Cross to support the organization's relief efforts in the areas devastated by the ice storm that began late Thursday evening. Approximately 550,000 National Grid customers in New England and eastern New York initially lost power as a result of the storm, which ripped through the Northeastern U.S., leaving a swath of destruction from ice-laden trees and power lines in its wake.

The \$225,000 donation will be allocated as follows:

- \$100,000 to the American Red Cross of Northeastern New York
- \$75,000 to the American Red Cross of Central Massachusetts, and
- \$50,000 to the American Red Cross of Merrimack Valley

"The Red Cross takes action to help so many people in all disasters, and they have been there in this storm from the very beginning," said Tom King, president of National Grid's U.S. business. "Their resources get stretched thin, especially during this time of year, and we hope our support will allow them to continue their work until the very last customer has been restored."

As of 3 p.m., more than 323,000 homes and businesses in National Grid's combined New England and New York service area have had their service restored since the storm began, and the company anticipates having all customers restored this week. The company has an army of more than 6,000 people dedicated to the enormous restoration effort including approximately 1,800 in-house and outside crews from as far away as Michigan and Tennessee. The field crews are being supported by more than 2,000 other personnel who are handling customer calls, logistics, crew dispatching, materials supply and a host of other functions around the clock.

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News Releases

National Grid Restores more than Half of All Customers in New England Affected by Severe Ice Storm

weather forecasts predicting potential wind gusts of up to 40 miles per hour may have an impact on power restoration efforts to the homes and businesses that lost power due to a severe ice storm that hit the northeastern United States late last week, National Grid officials said.

Since the storm hit in the early morning hours of Friday, December 12, National Grid has restored power to approximately 180,000 customers in Massachusetts, down from 294,000, and 16,000 customers in New Hampshire, down from a peak of 24,000 customers. The hardest hit area by far is central Massachusetts. The Merrimack Valley also sustained significant damage, and southern New Hampshire experienced numerous power problems as well.

As crews have inspected the region, particularly in northern Worcester County, they have found extensive damage across a wide area stretching from southern New Hampshire into Massachusetts all the way to the New York border. The devastation caused by this storm prompted both Massachusetts and New Hampshire to declare states of emergency.

The significant damage and potential for high winds and rain over the next 24 to 36 hours are likely to impact restoration efforts, and they may also create additional outages.

During the weekend, National Grid has focused on restoring service to key public facilities and other critical customers before Monday, but the company cautions that the weather and working conditions will impact that goal. The sheer volume of individual issues and the magnitude of storm damage to the power network necessitates that work will continue into mid-week, company officials said.

National Grid has assembled its largest workforce ever in Massachusetts to restore power to its customers and has made positive progress in the past couple of days.

"We have made good progress in some difficult working conditions so far, with approximately 196,000 homes and businesses – more than 60 percent of the original number affected -- restored in Massachusetts and New Hampshire since very early Friday morning," said Christopher E. Root, senior vice president of

Electricity Distribution Operations. "We have more than 900 crews dedicated to these restoration efforts, and hundreds of additional personnel behind the scene supporting this massive undertaking."

National Grid has brought in additional crews from Massachusetts, Rhode Island, Connecticut, Pennsylvania, New Jersey, Indiana, Washington DC, Maryland, Virginia, Ohio, North Carolina, Delaware, Arkansas, Illinois, Michigan and Tennessee.

Although crews have been working on all levels of the network, priority work in an emergency always begins with the bulk power transmission network, substations and primary circuits that feed power across broad geography and serve large number of customers.

National Grid continues to work with state, county and local emergency response officials, and is conducting daily conferences calls for municipal officials to keep them apprised of progress and schedules.

"We appreciate the patience and understanding that everyone has exhibited thus far," Root said. "Although our overall target is mid-week, I want to stress that we have been and will continue restoring service to homes and businesses every hour of every day. Some will certainly be back on sooner than others, but our crews are working hard to restore as many as possible, as quickly as possible."

Safety and preparedness are primary concerns in a major storm, and National Grid is urging its customers to use extreme caution in the storm damage areas. National Grid offers the following tips for customers to minimize inconvenience and maximize safety in the event that storm-related power interruptions do occur.

Never touch downed power lines, and always assume that any fallen lines are live electric wires. If you see one, report it immediately to National Grid or your local emergency response organization.

If you use a generator to supply power during an outage, be sure to only operate it outdoors. Before operating generators, be sure to disconnect from National Grid's system by shutting off the main breaker located in the electric service panel. Failure to do this could jeopardize the safety of crews working to restore power.

If you lose power, turn off any appliances that were on when the power

went off, but leave one light on so you will know when power is restored.

Power problems can sometimes interrupt public water supply systems or disable well pumps, so it's an especially good idea to keep a supply of bottled drinking water handy, as well as some canned food.

People who depend on electric-powered life support equipment, such as a respirator, should let National Grid know. To register as a National Grid life support customer, call the company's New England Customer Service Center at 1-800-322-3223.

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News Releases

12/15

National Grid Pushes Ahead on Storm Restoration in Massachusetts and New Hampshire with an Eye on the Weather

National Grid continues to make steady progress restoring service to homes and businesses affected by the massive ice storm that hit portions of Massachusetts and New Hampshire late last week. More than 1,000 field crews and 1,700 support personnel have restored power to nearly three-fourths of the 294,000 customers who lost service in Massachusetts and the 24,000 customers who lost service in New Hampshire as trees and limbs crashed to the ground under the weight of heavy ice, taking down power lines and poles with them.

As even more crews arrive in the region today, the company remains focused on its timetable of service restoration by mid-week, although ongoing weather conditions may create new and additional challenges. Increasingly strong winds have made field working conditions more difficult, and continue to pose a threat to already weakened tree limbs and branches.

The company reported significant progress over the weekend and today in restoring critical circuits that serve key public facilities and critical customers. That work continues today in parallel with significant resources dedicated to restoring service to neighborhoods and residential customers.

“Our continued progress will be, in part, dependent on the weather, but the crews remain focused on the task at hand,” said Christopher E. Root, senior vice president of Electricity Distribution Operations. “We want our customers to know that we understand what a tremendous hardship this situation has created. We are doing everything humanly possible to restore power as quickly as we can.”

National Grid has restored service to more than 209,000 customers in Massachusetts and more than 18,000 customers in New Hampshire.

Local National Grid crews have been supported from the beginning of the restoration by company crews from across New York state, Long Island Power Authority Crews, and utility and contractor crews from as far away as Michigan, Ohio, Pennsylvania and New Jersey. National Grid’s natural gas crews are also performing various tasks designed to support electricity line and service crews.

National Grid’s call centers have been staffed to handle the significant increases in customer call volume, taking as many as 3,000 calls per hour at

peak periods. Through early today, the company estimates it has handled more than 71,000 customer calls.

When combined with outages in the company's New York service areas, more than 550,000 customers have been impacted in the wake of the storm across approximately 8,000 square miles in four states.

In total, National Grid has more than 1,800 crews and 2,300 support personnel in New England and New York dedicated to the restoration effort, one of the largest concentrations of utility workers in the Northeast in more than a decade.

Safety and preparedness are primary concerns in a major storm, and National Grid is urging its customers to use extreme caution in the storm damage areas. National Grid offers the following tips for customers to minimize inconvenience and maximize safety in the event that storm-related power interruptions do occur.

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News Releases

National Grid Says Ice Storm Finish Line in Sight in New England

National Grid has restored approximately 309,900 of its New England customers, or more than 95 percent of those initially affected by the devastating ice storm that ravaged parts of the northeast. The company's goal is to have the restoration complete overnight tonight.

In New Hampshire, crews are literally going house to house restoring service to the remaining 100 or so customers without power this morning.

In Massachusetts, about 1,000 crews from 18 states and Canada have blanketed central Massachusetts and the Merrimack Valley and are now working to complete service restoration in the areas that suffered the worst storm damage. Roughly 16,000 National Grid customers are without power in the state, primarily in northern Worcester County. Crews are also working in the Merrimack Valley, and are going house to house to restore the remaining affected customers in that area.

National Grid has about 75 fresh crews working in central Massachusetts who were brought in overnight from metro New York City and Maine.

"We can see the finish line, which I'm sure will be a tremendous relief for our customers and communities," said Christopher E. Root, National Grid senior vice president of Electricity Distribution Operations. "Our customers have been incredibly patient and understanding as we have worked around the clock to recover from the most devastating storm to hit Massachusetts in decades."

Root added that the support the company has received from community and state officials has been extremely helpful in expediting the restoration process, and that customers have been extremely gracious to the crews as they toiled in conditions that were often difficult and challenging.

"Our customers have been phenomenal," Root said. "People are driving by crews honking and giving them a thumbs up, bringing them coffee and snacks. One customer even fired up a grill for a crew as they finished their shift at 1 a.m. in his neighborhood and grilled steaks for them. Another who is a gourmet cook brought hot meals out to the crews. We've heard stories like these over and over again and couldn't be more grateful." Root added, "We hope people know that their support and patience mean the world to all of us, especially when they have been through such a difficult time themselves. We will

not rest until every customer has been restored.”

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For information on National Grid's restoration efforts and information on how to stay safe, visit www.nationalgridus.com.

News Releases

Massachusetts Electric Company d/b/a National Grid
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National Grid New England Ice Storm Response by the Numbers

December 16, 2008 - As of 3 p.m. today, National Grid has restored power to approximately 262,000 customers, more than 82 percent of the 325,000 homes and businesses in eastern New England that were affected by the crippling ice storm that swept through the northeast last week, leaving a swath of devastation in its wake. The company continues to focus on mid-week restoration for the vast majority of customers in the affected areas.

“We continue to be amazed at the extent of the destruction that was wrought by this storm,” said Christopher E. Root, National Grid senior vice president of Electricity Distribution Operations. “The crews have made tremendous progress in some very difficult working conditions, but are completely focused on getting this job done quickly and safely.”

Company officials are keeping a close eye on weather forecasts for tonight and tomorrow, as predicted wintry conditions could cause new outages and have an impact on the overall restoration.

The storm impacted an area of 3,250 square miles of the company’s service area in Massachusetts, New Hampshire and Rhode Island, where the company identified more than 4,000 individual damage incidents in New England that require attention, and expects to repair or replace more than 416,000 feet of distribution wire. That equates to a single wire more nearly 90 miles long, and in a straight line would stretch from Boston to Providence and back.

More than 1,000 line and forestry crews from National Grid, other utilities and qualified contractors from 18 states as far away as Michigan and South Carolina as well as Canada continue to work in the region today, supported by more than 1,750 people behind the scenes from virtually every company department.

To keep this army of field crews rested and safe, the company thus far has reserved approximately 1,750 rooms in 46 different hotels and motels in the region, and has served more than 4,300 meals per day to the workers.

A fleet of 970 vehicles, ranging from small pick-ups and cars to the largest bucket trucks, track vehicles and tractor-trailers, have been pressed into service. To date, the company estimates the fleet has used more than 84,000 gallons of

fuel.

As of mid-day today, the company has fielded more than 78,500 customer calls since the storm began.

On Sunday, National Grid announced that it is donating \$125,000 to American Red Cross chapters that serve central Massachusetts and the Merrimack Valley in New England. Another \$100,000 is being allocated to the Red Cross in eastern New York, where the company's customers also were severely impacted by the storm.

The Red Cross has opened numerous shelters in the affected areas that are providing food, a place to stay warm, and overnight accommodations for those who have been without power for several days.

Overall, more than 550,000 National Grid customers in Massachusetts, New Hampshire, Rhode Island and New York lost service as a result of the storm. Restoration efforts in New York continue in parallel with New England, with approximately 90 percent of customers there restored.

Safety and preparedness are primary concerns in a major storm, and National Grid is urging its customers to use extreme caution in the storm damaged areas. National Grid offers the following tips for customers to minimize inconvenience and maximize safety in the event that storm-related power interruptions do occur.

Never touch downed power lines, and always assume that any fallen lines are live electric wires. If you see one, report it immediately to National Grid or your local emergency response organization.

If you use a generator to supply power during an outage, be sure to only operate it outdoors. Before operating generators, be sure to disconnect from National Grid's system by shutting off the main breaker located in the electric service panel. Failure to do this could jeopardize the safety of crews working to restore power.

If you lose power, turn off any appliances that were on when the power went off, but leave one light on so you will know when power is restored.

Power problems can sometimes interrupt public water supply systems or disable well pumps, so it's an especially good idea to keep a supply of bottled drinking water handy, as well as some canned food.

People who depend on electric-powered life support equipment, such as a respirator, should let National Grid know. To register as a National Grid life support customer, call the company's Customer Service Center. In New England, the number is 800-322-3223. In New York, that number is 800-642-4272.

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For information on National Grid's restoration efforts and information on how to stay safe, visit www.nationalgridus.com.

Saturday, Dec. 13 4 p.m.

Hello. This is the National Grid media hotline. My name is _____, and this is an update of restoration efforts in National Grid's New England service area as of 6 p.m. on December 13, 2008.

As of 6 p.m., National Grid has restored power to approximately 160,000 homes and businesses in New England that lost service as a result of the ice storm that swept up the east coast this week. The storm initially affected more than 325,000 homes and businesses in the region.

As of this time, approximately 150,000 customers remain without power in Massachusetts. In New Hampshire, 12,600 customers are without service. Service has been restored to all Rhode Island customers.

At this point, the company anticipates having the majority of service restored by midnight on Monday. The company expects to have smaller outages from some of the hardest hit areas restored by Tuesday night.

In addition, over the next 24 hours the company expects to be able to provide more specific restoration times for localities.

The communities hardest hit by this storm include: northern Worcester county and the Merrimack Valley. Communities in southern New Hampshire also were affected.

National Grid in New England currently has mobilized more than 900 line and tree crews, and an additional 1,300 employees performing support functions behind the scenes. National Grid crews working in New England also have been joined by utility and contractor crews from as far away as Michigan, Ohio, Pennsylvania, Maryland and Virginia. More crews continue to arrive in the region at this time.

National Grid customer service personnel handled upwards of 3,000 telephone calls per hour during peak periods, and are making outbound calls to customers in areas still to be restored.

National Grid as identified more than 4,000 individual items that require attention by the company throughout the region including downed lines, open circuit breakers, down trees leaning on electrical equipment, broken poles and more.

The company continues to work closely with local municipalities and organizations such as the Red Cross to provide up-to-date information to assist them in planning for warming stations and shelters throughout the area.

As crews work to restore power, National Grid reminds customers about the following important information regarding safety during power outages:

- Never touch fallen power lines or anything in contact with fallen wires such as a car, fence or tree. To report downed power lines call National Grid at 1-800-322-3223.
- If you choose to use a portable generator during a power outage you must make sure the main circuit breaker in your electric service panel box is in the OFF position or, in older electric service panel boxes, that the main fuse block is removed. This is necessary to prevent your generator's electricity from going back into the power lines in the street and potentially endangering the lives of line crews and other emergency workers.
- Also, Generator exhaust contains deadly carbon monoxide – never run an electric generator inside your house or any enclosed space.

This line will be updated again at approximately 9 p.m. today. Thank you.

Saturday, Dec. 13 9 p.m.

Hello. This is the National Grid media hotline. My name is _____, and this is an update of restoration efforts in National Grid's New England service area as of 9 p.m. on December 13, 2008.

As of 9 p.m., National Grid has restored power to approximately 160,000 homes and businesses in New England that lost service as a result of the ice storm that swept up the east coast this week. The storm initially affected more than 325,000 homes and businesses in the region.

As of this time, approximately 150,000 customers remain without power in Massachusetts. In New Hampshire, 12,600 customers are without service. Service has been restored to all Rhode Island customers.

At this point, the company anticipates having the majority of service restored by midnight on Monday. The company expects to have smaller outages from some of the hardest hit areas restored by Tuesday night.

In addition, over the next 24 hours the company expects to be able to provide more specific restoration times for localities.

The communities hardest hit by this storm include: northern Worcester county and the Merrimack Valley. Communities in southern New Hampshire also were affected.

National Grid in New England currently has mobilized more than 8,000 line and tree crews, and an additional 1,300 employees performing support functions behind the scenes. National Grid crews working in New England also have been joined by utility and contractor crews from as far away as Michigan, Ohio, Pennsylvania, Maryland, Illinois, North Carolina, Tennessee and Virginia. More crews continue to arrive in the region at this time.

National Grid customer service personnel handled upwards of 3,000 telephone calls per hour during peak periods, and are making outbound calls to customers in areas still to be restored.

National Grid has identified more than 4,000 individual items that require attention by the company throughout the region including downed lines, open circuit breakers, down trees leaning on electrical equipment, broken poles and more.

The company continues to work closely with local municipalities and organizations such as the Red Cross to provide up-to-date information to assist them in planning for warming stations and shelters throughout the area.

As crews work to restore power, National Grid reminds customers about the following important information regarding safety during power outages:

- Never touch fallen power lines or anything in contact with fallen wires such as a car, fence or tree. To report downed power lines call National Grid at 1-800-322-3223.
- If you choose to use a portable generator during a power outage you must make sure the main circuit breaker in your electric service panel box is in the OFF position or, in older electric service panel boxes, that the main fuse block is removed. This is necessary to prevent your generator's electricity from going back into the power lines in the street and potentially endangering the lives of line crews and other emergency workers.
- Also, Generator exhaust contains deadly carbon monoxide – never run an electric generator inside your house or any enclosed space.

This concludes the 9 p. m. update. This line will be updated again at approximately 6 a.m. Sunday morning. Thank you.

Saturday, Dec.14 9 p.m.

Hello. This is the National Grid media hotline. My name is _____, and this is an update of restoration efforts in National Grid's New England service area as of 9 p.m. on December 14, 2008.

As of 9 p.m., National Grid has restored power to approximately 218,000 customers –that's more than 2/3 of the homes and businesses in New England that lost service as a result of the ice storm that struck on Thursday and Friday. The storm initially affected more than 325,000 homes and businesses in the region. The affected area in National Grid's service territory stretches from the New York/Massachusetts border in the west, through central Massachusetts, northward through the Merrimack Valley and into New Hampshire.

As of this time, approximately 100,000 customers remain without power in Massachusetts. In New Hampshire, 7,000 customers are without service.

The company continues to return service to customers hourly. Along side roads and in rural areas the devastation is extensive. This week's predicted bad weather and working conditions will impact restoration. The volume of individual issues and magnitude of damage to the electrical system will require work to continue into mid-week.

The communities hardest hit by this storm include those in northern Worcester county and the Merrimack Valley. Communities in southern New Hampshire also were affected.

National Grid in New England currently has mobilized more than 900 line and tree crews, and an additional 1,300 employees performing support functions behind the scenes. National Grid crews working in New England also have been joined by utility and contractor crews from Michigan, Ohio, Pennsylvania, Maryland, Illinois, North Carolina, Tennessee and Virginia.

National Grid customer service personnel have handled more than 51,000 telephone calls, and are making outbound calls to customers in areas still to be restored.

National Grid has identified more than 4,000 individual items that require attention by the company throughout the region including downed lines, open circuit breakers, down trees leaning on electrical equipment, broken poles and more.

The company continues to work closely with local municipalities and organizations such as the Red Cross to provide up-to-date information to assist them in planning for warming stations and shelters throughout the area.

As crews work to restore power, National Grid reminds customers about the following important information regarding safety during power outages:

- Never touch fallen power lines or anything in contact with fallen wires such as a car, fence or tree. To report downed power lines call National Grid at 1-800-322-3223.
- If you choose to use a portable generator during a power outage you must make sure the main circuit breaker in your electric service panel box is in the OFF position or, in older electric service panel boxes, that the main fuse block is removed. This is necessary to prevent your generator's electricity from going back into the power lines in the street and potentially endangering the lives of line crews and other emergency workers.
- Also, Generator exhaust contains deadly carbon monoxide – never run an electric generator inside your house or any enclosed space.

This concludes the 9p.m. update. This line will be updated again at approximately 6 am on Monday morning. For additional information, leave your message after the tone and a media relations representative will get back to you. Thank you.

Monday, Dec. 15, 11 a.m.

Hello. This is the National Grid media hotline and this is an update of restoration efforts in National Grid's New England service area as of 11 a.m. on Monday, December 15, 2008.

As of 11 a.m., National Grid has restored power to approximately 204,000 MA customers – down from a total of 294,000 that were originally affected. The company also has restored power to 18,000 New Hampshire customers, down from a peak of 24,000. That's more than 2/3 of the homes and businesses in New England that lost service as a result of the ice storm that struck on Thursday and Friday.

As of this time, approximately 90,000 customers remain without power in Massachusetts in the central part of the state and in the Merrimack Valley. In New Hampshire 6,000 customers are without service in the communities of Pelham and Salem.

The company continues to return service to customers hourly. Along side roads and in rural areas the devastation is extensive. This week's forecasted bad weather and working conditions could impact restoration. The sheer volume of individual issues and the magnitude of damage and devastation to the electrical system will require work to continue into mid-week.

The communities hardest hit by this storm include those in northern Worcester county and the Merrimack Valley. Communities in southern New Hampshire also were affected.

National Grid also is helping our customers weather the storm by donating \$125,000 to the American Red Cross chapters in Massachusetts in the affected areas. \$75,000 is going to the American Red Cross of Central MA, and \$50,000 is going to the American Red Cross of the Merrimack Valley.

Customers who need to contact the company about issues related to the storm should call National Grid at 1-800-322-3223.

Monday, Dec. 16, 11 a.m.

Hello. This is the National Grid media hotline and this is an update of restoration efforts in National Grid's New England service area as of 11 a.m. on Tuesday, December 16, 2008.

As of 11 a.m., National Grid has restored power to approximately 238,000 Massachusetts customers – down from a total of 294,000 that were originally affected. The company also has restored power to 21,000 of the 24,000 New Hampshire customers who were without power. That's more than 80 per cent of the homes and businesses in New England that lost service as a result of the ice storm that struck on Thursday and Friday.

As of this time, approximately 59,000 customers remain without power in Massachusetts in the central part of the state and in the Merrimack Valley. In New Hampshire 3,000 customers are without service in the communities of Pelham and Salem.

The company continues to return service to customers hourly. Along side roads and in rural areas the devastation is extensive. Tonight's forecasted bad weather and working conditions could impact restoration. The sheer volume of individual issues and the magnitude of damage and devastation to the electrical system will require work to continue for the next few days.

The communities hardest hit by this storm include those in northern Worcester county and the Merrimack Valley. Communities in southern New Hampshire also were affected.

Customers who need to contact the company about issues related to the storm should call National Grid at 1-800-322-3223.

This report will be updated at approximately 4 pm. If you need additional information, please leave your message after the tone and a media relations specialist will return your call.

Monday, Dec. 17, 4 p.m.

Hello. This is the National Grid media hotline and this is an update of restoration efforts in National Grid's New England service area as of 4 p.m. on Wed, December 17, 2008.

As of 4 p.m., National Grid has restored power to approximately 270,000 or 92 percent of Massachusetts customers – down from a total of 294,000 that were originally affected. The company also has restored power to nearly all of the 24,000 New Hampshire customers who were without power.

As of this time, approximately 23,000 customers remain without power in Massachusetts most of them in the central part of the state. In New Hampshire about 300 customers are without service in the communities of Pelham and Salem.

The company continues to return service to customers hourly. We anticipate that the majority of the Massachusetts customers and all New Hampshire customers will be restored overnight. Individual service restorations in the hardest hit areas of Worcester County are estimated to be completed on Friday. Massachusetts outage totals by county and community as well as estimated restoration times are posted to our Massachusetts web site. They can be accessed at nationalgridus.com/masselectric. Click on Storm Central at the top of the page for a county by county and community by community breakdown.

Customers who need to contact the company should call National Grid at 1-800-322-3223.

This report will be updated at approximately 9 pm. If you need additional information, please leave your message after the tone and a media relations specialist will return your call. Thank you.

Monday, Dec. 17, 9 p.m.

Hello. This is the National Grid media hotline and this is an update of restoration efforts in National Grid's New England service area as of 9 p.m. on Wed, December 17, 2008.

The company estimates that the electric distribution system suffered damage in 148 of the 169, or 86 percent of the communities National Grid serves in Massachusetts. National Grid has restored power to approximately _____ or _____ percent of Massachusetts customers – down from a total of 294,000 that were originally affected.

In New Hampshire the company has restored power to nearly all of the 24,000 New Hampshire customers who were without power.

As of this time, approximately _____ customers remain without power in Massachusetts most of them in the central part of the state. In New Hampshire about _____ customers are without service in the communities of Pelham and Salem.

The company continues to return service to customers hourly. We anticipate that the majority of the Massachusetts customers and all New Hampshire customers will be restored overnight. Individual service restorations in the hardest hit areas of Worcester County are estimated to be completed on Friday. Massachusetts outage totals by county and community as well as estimated restoration times are posted to our Massachusetts web site. They can be accessed at nationalgridus.com/masselectric. Click on Storm Central at the top of the page for a county by county and community by community breakdown.

Customers who need to contact the company should call National Grid at 1-800-322-3223.

This report will be updated at approximately 6 a.m. If you need additional information, please leave your message after the tone and a media relations specialist will return your call. Thank you.

boston.com

THIS STORY HAS BEEN FORMATTED FOR EASY PRINTING

Ice storm wreaks havoc in Mass.

 Associated Press

By Mark Pratt, Associated Press Writer | December 12, 2008

An ice storm that coated western and central Massachusetts overnight has knocked out power to more than 100,000 customers, prompting Gov. Deval Patrick to declare a statewide state of emergency.

The storm that lasted into Friday morning brought down tree branches, while forcing road and school closures across most of the state.

Patrick declared a state of emergency Friday morning, spokesman Kyle Sullivan said.

The declaration enables the governor to take the appropriate steps, such as mobilizing the National Guard, to assist in storm recovery efforts.

"This is a really extreme situation we are experiencing," said Jackie Barry, a spokeswoman for National Grid, which had about 100,000 electric customers without power, mostly in the Worcester area and Merrimack Valley.

Western Massachusetts Electric Co. reported nearly 18,000 customers without power. Some towns, including Becket, Windsor, Cummington and Middlefield, are experiencing near blackout conditions.

State officials do not even know the full extent of the problem because some towns have municipal utilities, said Peter Judge, a spokesman for the Massachusetts Emergency Management Agency.

There have been no reports of weather related injuries, he said.

At least 20 towns declared local states of emergency even before the governor, especially along the Route 2 corridor and in greater Worcester, he said.

"Stay home if you live in Holden, don't come to Holden if you work here," Holden fire Chief Jack Chandler said.

The entire town is without power and some senior citizens on oxygen have been transported to either the hospital or a shelter opened at the town's senior center.

The nearby town of Sterling has canceled school and is also asking residents to stay off the icy roads.

"It's terrible out there," police Chief Gary Chamberland said. "The main two arteries through town are impassable. We can't even get emergency personnel to work."

The town has opened an emergency shelter at a local school.

Ice collected on tree limbs, weighing them down until they snapped and came down on power lines, Judge said. The transmission lines themselves are also being iced up, Barry said. She warned against approaching downed lines, even if they don't appear to be live.

The National Weather Service has issued an ice storm warning until 10 a.m.

The Massachusetts Bay Transportation Authority reported delays on some commuter rail lines to clear fallen tree limbs from the tracks.

http://www.boston.com/news/local/massachusetts/articles/2008/12/12/ice_storm_wreaks_... 12/12/2008

It could be days before some customers have power restored, Barry said.

"Some high-voltage lines affected are on rural rights of way in remote areas and we're not sure if we can even get to them," she said.

Eastern and southeastern Massachusetts, where temperatures are significantly higher, are getting rain and the National Weather Service has declared a flood warning. ■

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telegram.com

Friday, December 12, 2008

Icy conditions cause havoc

Power outages, downed trees reported

Telegram & Gazette Staff

Heavy rains yesterday followed by icy conditions in some areas of Central Massachusetts wreaked havoc on power lines and made travel very slippery.

In Worcester, more than 2,200 power customers were without electricity. Trees were reported down across wires that were seen arcing in roadways. No injuries were reported by police and firefighters.

National Grid reported 25,952 customers were without power at midnight across Worcester County. In addition to Worcester, major areas affected included Auburn, Hubbardston and Gardner, according to the company's Web site.

In addition, there was no power in Princeton and in parts of Paxton, according to town police. North Rutland lost power about 7 p.m. Eighty percent of Leicester was without power, police said. And, after midnight, Route 122 in Rutland and Paxton was impassible because of downed trees and wires. In addition, parts of Shrewsbury were also without power late last night.

Towns in northern and western Worcester County seemed particularly hard hit; police in Fitchburg, Gardner, Spencer and Templeton reported downed power lines, transformer fires, or minor car accidents because of the bad weather. Police and fire crews in Worcester dealt with several downed power lines and tree limbs, particularly in higher elevations. Downed trees were reported on Salisbury Street, West Street and near Worcester Regional Airport. At Beaconsfield Road, a tree fell across the street, making it impassible to traffic.

Police in towns in eastern Worcester County such as Northboro and Westboro, along with police in the Blackstone Valley, reported early last night that it was just wet.

Wet was an understatement, actually, as the National Weather Service issued a flood watch for Central Massachusetts.



A large limb, which broke under the weight of icy branches, sits in the front yard of a Quinapoxet Lane home about 11 last night. (T&G Staff/STEVE LANAVA)

<http://wbztv.com/>

Dec 12, 2008 7:34 am US/Eastern

300,000+ Without Power In Mass. & N.H.

BOSTON (WBZ) — A potent storm coated much of the area in ice overnight, taking down thousands of power lines and canceling school in more than 100 districts.

Just before 6 a.m. National Grid reported about 100,000 power outages. Public Service of New Hampshire had more than 200,000 customers in the dark. The utility said it will likely be days before all power is restored.

Resource: [Winter Power Outage Safety](#)

The worst icing conditions are outside of I-495. The roads, trees and power lines are coated in a sheet of ice. Entire towns are without power, and without working traffic lights.

Communities inside 495 did not escape problems. Downpours led to street flooding on side streets and main roads as well.

Meteorologist Todd Gutner says the heavy precipitation should wind down by mid-day, but the problems will not go away. The temperatures in the Boston area are expected to drop, icing over roads, trees, and power lines that are wet, leading to more power outages.



Icy trees in Worcester are responsible for power outages, affecting thousands of customers.

Boston (MA) Globe via World Wide Web 12/13/2008

Source Website: www.boston.com

December 13, 2008

BOSTON--Work crews struggled through the night to help restore power to the estimated 350,000 Massachusetts customers who lost electricity in Friday's ice storm.

Ice storm coverage:

By Saturday afternoon the number of customers without power had dropped to about 194,000, according to Peter Judge of the Massachusetts Emergency Management Agency.

Judge said there's still a long way to go, but work crews hoped to make more progress as temperatures slowly inch up over the next few days and downed tree limbs are cleared from roadways.

"We've got the crews out there moving that debris," Judge said. "Hopefully we can get that number down."

National Grid says it has mobilized more than 5,000 personnel, contractors, forestry crews and support staff in response to the storm damage from as far away as Michigan, Ohio, Illinois, Washington, North Carolina and Virginia and that progress was made overnight at key transmission and distribution circuits.

About 172,000 of its customers were without power early Saturday, down from a peak of approximately 295,000.

Most affected cities are in Northern and Central Massachusetts, including Leominster, North Andover, Salem, Spencer, Newburyport, Athol, Tewksbury, Worcester.

Judge said that despite the frigid weather, fewer than a 1,000 residents took advantage of the 40 or so shelters set up across the state to provide a warm place to stay. He said many residents may have toughed it out using fireplaces or other ways to stay warm. Others found refuge with family members, friends or in hotels.

Judge said more residents could end up in shelters Saturday night if people grow tired of the cold and dark.

"We expect those numbers probably to rise a bit," he said. "This is a very unique event."

No major injuries or accidents were reported, but police were searching for a Marlborough Department of Public Works employee who went missing after reporting to work early Friday. Kevin Connolly was last seen about 5 a.m. near the department building.

The storm, which began Thursday night, coated trees with ice, causing branches to break onto power lines and roadways throughout central and western Massachusetts.

The widespread damage prompted Gov. Deval Patrick to declare a statewide state of emergency.

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Audience 6892670 provided by Nielsen/NetRatings

Worcester (MA) Telegram & Gazette via World Wide Web 12/13/2008

Source Website: www.telegram.com

Shelters Available For Those Without Power

Some outages may last days

By Pamela Sacks
TELEGRAM & GAZETTE STAFF

Bart Hill woke up to the crackle of splitting trees early yesterday.

By late morning, Holden Senior Center had been converted to an emergency shelter, and Mr. Hill was serving breakfast to emergency workers who had been out for hours dealing with crises created by the severe ice storm.

Mr. Hill had his own problems. His sump pump had stopped when the power went off, and his basement was flooded. All around him he saw people struggling with similar problems. He remarked that he grew up in northern New Hampshire, but things were worse yesterday than he had ever seen them.

"It's been something to see everybody helping out everybody else," Mr. Hill, 53, said. "It is stunning that when people need things, others step up and take care of each other."

Town Manager Brian Bullock said the storm was the worst that Holden had ever experienced.

"This is a devastating storm," Mr. Bullock said. "The entire town is out of power. Hundreds of electrical loops have torn away from houses."

All yesterday, officials of towns and cities across Central Massachusetts made plans to open shelters for their residents who faced a dark and cold night. National Grid spokesmen declined to say when electricity might be restored across the region. Schools, armories, town halls, senior centers and fire stations were converted to emergency facilities. Most of the shelters were expected to stay open until everyone could comfortably return home.

In Worcester, the Senior Center on Providence Street served as a place to keep warm until 7 last night, when the city was to open overnight shelters at Doherty Memorial High School and Burncoat High School.

Late yesterday afternoon, Bob Eager, chief custodian at Doherty, was setting up cots in the high school's cafeteria with the help of John Carlson from the city's inspectional services department. They were planning to accommodate 25 to 30 people, but could take care of more if necessary. Burncoat was ready to accommodate up to 100 people, Mr. Eager said.

"It's open if people need to come by and spend the night because it's too cold," Mr. Eager said. "We'll be here until the National Grid gets everyone on."

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The Boston (MA) Herald via World Wide Web 12/13/2008

Source Website: www.bostonherald.com

Out-Of-State Crews To Aid Grid Repairs

By Jay Fitzgerald

Emergency work crews from as far away as Michigan and Ohio are rushing to Massachusetts this weekend to help restore power for hundreds of thousands of customers stranded without electricity because of yesterday's devastating ice storm.

Hundreds of work crews from National Grid, Nstar, Verizon and municipal utilities were working around the clock yesterday and into today to repair electric lines, circuits and other items damaged by heavy blasts of ice and winds that snapped trees, branches and poles throughout the region.

The service area for National Grid - with 1.2 million customers in Massachusetts, largely in central, northern and western parts of the state - was hardest hit by the storm that ripped through the heart of New England.

About 290,000 National Grid customers lost power yesterday, beginning just after midnight and cascading through the early morning hours.

Despite efforts of work crews, only 50,000 National Grid customers had their power restored by late yesterday afternoon - and National Grid called in help.

Under mutual-assistance agreements with other utilities, crews from Connecticut, Maryland, Michigan, Ohio and Pennsylvania are being rushed into the state today to help repair the huge damage to the electric system.

"There were significant tree and ice problems everywhere," said National Grid spokeswoman Debbie Drew.

Nstar, with 1.1 million customers mostly in eastern Massachusetts, wasn't as hard hit because its service area wasn't in the direct path of the storm. The utility estimated 7,000 of its customers lost power yesterday.

Electricity was restored to all but 800 Nstar customers by late yesterday afternoon, the company said.

Other utilities - including municipal, phone, cable and Internet companies - also dispatched crews across the state to restore services and repair damaged lines.

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A1, A8, A7
National Grid

ICE STORM PARALYZES PARTS OF NEW ENGLAND Close to a million without power

By David Abel
and John R. Ellement
GLOBE STAFF

Nearly a million homes and businesses in New England are facing a weekend without electricity after a rare combination of low pressure, moist air, and cold, powerful winds produced a punishing ice storm that swept through the region yesterday, felling countless power lines and trees and closing hundreds of roads.

The storm, which has caused tens of millions of dollars in damage across the region, led Governor Deval Patrick to declare a state of emergency, allowing him to mobilize 500 members of the National Guard to help clear roads and provide support. Patrick, who estimated the cost to the state at about \$7 million, said he would seek a presidential disaster declaration to make federal money available for recovery efforts.

"I don't think anyone is expecting the power will be back in large numbers for a few days," Patrick said in a telephone interview last night. "I think it could be longer than Monday for certain parts of the Commonwealth. We'll know more after a lot of the debris is cleared in the next few days."

No deaths or serious injuries were reported, but the storm left utility companies grappling with unprecedented power outages.

Authorities said a Danville, N.H., man, however, died of carbon monoxide poisoning after he hooked up his generator during the ice storm, the Associated Press reported last night. The New Hampshire fire marshal's office said the man, who lived in a camper,

ICE STORM, Page A6

turned on his power generator when his electricity went out around 10 p.m. Thursday. Officials have not released the man's name.

As much as 4 inches of rain fell over the region from late Tuesday night through yesterday

morning, as a low-pressure system from the south and a cold front from the north stalled over New England. But the Boston area, which had only torrential rain, did not experience the icing that areas outside Interstate 495 and along the New Hampshire border did, where the rain froze on contact with the ground and everything else it touched.

"Nobody expected that the impact of this storm to be quite so devastating," said Mayor Konstantina Lukes of Worcester. "Trees are falling on cars, they are falling on houses, and they are trapping people in their homes."

In Massachusetts, 270,000 customers were still without electricity at 8:30 last night. In New Hampshire, which also declared a state of emergency, more than 400,000 homes and business were in the dark.

"We're telling people to hunker down for the weekend, said James Mannion, a spokesman for the Massachusetts Emergency Management Agency, last night.

In Maine, 200,000 lost power, according to the state's emergency management agency. Connecticut Light & Power reported that nearly 17,000 of its 1 million customers lost service. In Vermont, at least 36,000 utility customers lost electricity, and power went out for about 6,000 National Grid customers in Rhode Island.

"What we're seeing is unprecedented in terms of New Hampshire storms," said Martin Murray, a spokesman for Public Service of New Hampshire, which provides electricity to about 72 percent of the state. "We've never had any power outages approaching this. Virtually every part of the state is affected, and the damage is extensive."

With work crews in the region overburdened, New Hampshire and Maine sought help from Canada.

"It's just a massive task, and there isn't a lot of mutual aid available," said Lynette Miller, a spokeswoman for the Maine Emergency Management Agency.

National Grid, which serves 1.2 million customers in Massachusetts, had more than 650 crews working around the state to repair power lines, and they called in help from as far as Washington, D.C., and Ohio. "This is an extreme situation," said Debbie Drew, a spokesman for National Grid. "This will be a multiday restoration effort."

Across the region, the storm destroyed roofs, shuttered businesses, and made most aspects of life more difficult. Trains were delayed or canceled. Crowds of customers at hardware stores jostled to buy generators. Blood collection was hampered.

"There's tons and tons of debris out there, which is impacting the utilities' ability to restore power," said Peter Judge, a spokesman for MEMA. "It's as bad as we've seen at least over the last 10 years."

With signal systems down and trees blocking tracks, there was also widespread disruption of service on commuter rail trains leaving North Station.

"This morning was as bad as it gets," said Scott Farmelant, a spokesman for the Massachusetts Bay Commuter Railroad Company. "... Mother Nature wreaked havoc."

There may have been at least one victim attributable to the storm. Authorities in Marlborough suspended their search last night for Kevin Connolly, 50, a Department of Public Works employee whose city-issued truck



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was found abandoned by a creek behind the department's parking lot. He was last seen at about 4 a.m. yesterday after he reported to work and was dispatched to help sand roads and clear tree limbs.

"There has been an enormous amount of people" looking for him, said Marlborough police Lieutenant Tom Boland. Connolly has a medical condition that may cause blackouts or loss of memory, Boland said, so authorities are hoping he will be found.

"Let's hope that maybe he drives to his house or somebody finds him and he's safe and sound," he added.

Members of the State Police Search and Rescue Team, dive team, and the air wing and canine units plan to search an area of 150 acres today, beginning at 8 a.m., said David Procopio, a State Police spokesman.

Hardest hit in Massachusetts was northern Worcester County, where more than 100,000 homes remained without electricity yesterday afternoon. Worcester had the additional problem of controlling all the downed limbs, many of which are infested with Asian long-horned beetles.

Neighborhoods in the northern and western parts of Worcester were most affected, and three high schools were opened as emergency shelters. An estimated 25,000 people there were without power last night, Andreoli said.

On Ogden Avenue in Worcester, the problem was the once-massive tree in Dave Rousseau's backyard. One branch broke off at about 3 a.m. and fell onto the cars and trucks in Rousseau's driveway, denting and damaging hoods, roofs, and doors of the vehicles.

About an hour later, a tree trunk came to rest on a neighboring three-decker.

"We've got to look on the bright side," Rousseau said. "No one was hurt."

Downed trees and sagging power lines also made many roads impassable in Fitchburg, Leominster, and Holden, where so much ice and debris rained from trees that parents sent children outside to play wearing bicycle helmets.

After spending the night before his birthday in the basement of their single-story home in Holden, Mike Fahey awoke to find a tree that cleaved into two

Continued on next page separate trunks. "I took a picture and I told my wife, 'These trees are coming down,'" he said.

Seconds later, both trunks gave way. One slammed onto the roof of Fahey's home. "This is a not a good birthday," he said.

Authorities across the state also eyed cresting rivers.

The 2 to 4 inches of rain that fell during the storm caused minor flooding. The headwaters of the Charles River in Medway rose just above the flood stage, as did the Aberjona River in Winchester, the Old Swamp River in South Weymouth, and the Jones Brook in Billerica.

The Sudbury River crested yesterday afternoon at 1.4 feet above flood stage in the Saxonville section of Framingham. The Assabet River in Maynard was expected to pass its 5-foot flood stage later yesterday evening.

The National Weather Service is forecasting low-land flooding today at the Assabet River in Maynard, the Nashua River near East Pepperell, the Sudbury River near Saxonville, the Shawshen River near Wilmington, and the Blackstone River in Northbridge and Woonsocket, R.I., said meteorologist William Babcock. Flood warnings were in effect overnight for the Charles River near Medway and the Aberjona River near Winchester.

The good news is that the weather is improving.

With the storm now hovering somewhere over the Atlantic, the sun will shine throughout the metropolitan area over the week-

end, said Alan Dunham, a meteorologist with the National Weather Service in Taunton.

The temperature today should reach a high of 29 degrees, but fall to 19 tonight. Tomorrow, there will be a few more clouds, but the temperature should rise into the 40s.

Andrew Ryan, Brian R. Ballou, Noah Bierman, and Milton Valencia of the Globe staff and Globe correspondents Padraig B. Shea, Anne Baker, and Casey Ramsdell contributed to this report.



BILL GREENE/GLOBE STAFF

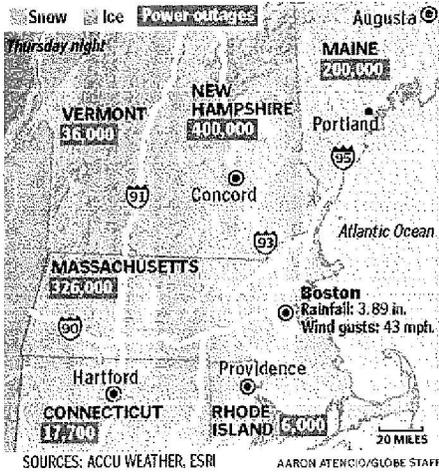
Casey Daniels (in bucket) and Nick Sousa of Stanley Tree Service cut and removed branches in Andover.

The Boston Globe

Date: Saturday, December 13, 2008
Location: BOSTON, MA
Circulation (DMA): 405,659 (7)
Type (Frequency): Newspaper (SAT)
Page: A1, A6, A7
Keyword: National Grid



Felled branches lay on Brattle Street in Worcester yesterday after the storm. Governor Deval Patrick declared a state of emergency in Massachusetts.



The Boston Globe

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Page: A1 A6 A7
Keyword: National Grid



CHARLES KAUFMAN/ASSOCIATED PRESS

A loader cleared ice-covered branches off Old Chester Road in East Derry, N.H., yesterday. Hundreds of thousands in New Hampshire, Maine, and Vermont were without power yesterday following the storm that dropped power lines across the region.



BILL GREENE/GLOBE STAFF

In Hudson, N.H., Ellen Lima and Glenn Dellamonica pumped gas in jerry cans at Cumberland Farms, following the ice storm that caused major power outages in Southern New Hampshire.

The Boston Globe

Date: Saturday, December 13, 2008
Location: BOSTON, MA
Circulation (DMA): 405,659 (7)
Type (Frequency): Newspaper (SAT)
Page: A1 A6, A7
Keyword: National Grid



After the ice storm that coated the Worcester area, a tree branch broke the rear window of Dave Maas's car in his driveway on North Worcester Avenue.

JOHN TLUMACKI/GLOBE STAFF

Worcester (MA) Telegram & Gazette via World Wide Web 12/12/2008

Source Website: www.telegram.com

Power Could Be Out Till Monday

LATEST ON THE WILD WEATHER

TELEGRAM & GAZETTE STAFF

National Grid customer information

Gov. Deval L. Patrick made his way to the region this afternoon to get a close look at the fallout from an ice storm that felled countless tree limbs and left thousands of homeowners without power.

Utility companies say some customers may not get their power back until Monday.

In Central Massachusetts, 141,400 are without power this afternoon, according to National Grid and Unitil, the two major electric utilities in Worcester County.

Both utilities said they were in the assessment phase of a multi-day process and would restore transmission lines first.

During an afternoon stop in Leominster, the governor assured Mayor Dean J. Mazzarella that the restoration of power is his top priority. Mr. Patrick was expected to stop at 100 Main St., a high-rise occupied mostly by senior citizens. With power at the building out for the day, and its return unclear, officials were moving the residents to other locations, notably a temporary shelter at Southeast Elementary School.

The governor also made a stop in Fitchburg, where he gathered with city leaders at Central Fire Station.

Fitchburg Mayor Lisa A. Wong said 80 percent of the city is without power. She said the city likely will not see power for at least a day or two.

Like Leominster and Fitchburg, several communities in Central Massachusetts have been without electricity since the overnight ice storm. Most schools in the region were closed today, and several businesses did not open on schedule.

The Solomon Pond Mall, on the Berlin-Marlboro line, did not open this morning due to a lack of power. But by 2 p.m. electricity was restored and soon holiday shoppers filled the stores.

Although many events slated for today were canceled, some will go on as scheduled. In Worcester, organizers say this afternoon's Kelley Square tree lighting ceremony will take place as scheduled. The event will begin at 5:30 p.m. The concert at the DCU Center featuring Amy Grant and Vince Gill will be held as scheduled, according to the arena's Web site.

National Grid spokeswoman Deborah M. Drew said dozens of crews will be assessing and repairing lines throughout the weekend.

"Think of the transmission system as sort of a highway and Route 9 as sort of a lower level feeder, then a side street as the line that feeds into your house," said Ms. Drew.

Unitil Senior Vice President George R. Gantz expected to have a better idea tomorrow of when power would be restored. Unitil covers the Fitchburg area, not including Leominster.

"If you are in a more remote area, where you look around you and you see there are lots of trees down, that is a good sign that you should be expecting an extended period and taking whatever steps you can to deal with that," Mr. Gantz said. "If you have relatives and friends that have power and hot water and all that, that would be a good option to look at."

Most communities have set up temporary shelters at schools, senior citizen centers or other municipal buildings.

In Worcester, the city's customer service line, handling calls about flooding, tree limbs and other matters, has been busy all day. That number is (508) 929-1300.

Officials in several smaller towns, mainly north of Worcester, declared states of emergency this morning. The governor declared a state of emergency. The declaration enables the governor to take the appropriate steps, such as mobilizing the National Guard, to assist in storm recovery efforts.

National Guard units slated to help municipalities include the 26th Maneuver Enhancement Brigade from Reading and the 51st Troop Command from Wellesley. The 101st Engineers from Whitinsville are part of the 26th MEB.

Earlier in the day, the governor reminded Worcester residents about the ongoing effort to eradicate the Asian longhorned beetle and rules forbidding the transportation of trees outside the quarantine zone.

Many Worcester residents spent some of the day cleaning small limbs from their yards. For trees and bigger limbs, chain saws were the tool of choice. In some cases, a city front-end loader helped clear the way.

In Mendon this morning, two men were rushed to the hospital after their basement filled up with carbon monoxide fumes as they were pumping out from the storm.

Mendon firefighters responded to a 911 call about 10:45 a.m. from a man at 153 Uxbridge Road, a home that also houses Lewis Small Engine Repair. A man told police that he and his brother were attempting to pump out their basement when they experienced dizziness, sweating, difficulty breathing and blurred vision.

The men were taken by ambulances from Hopedale and Uxbridge to Milford Regional Medical Center in Milford. Two cats also were retrieved from the residence.

Firefighters reported that the carbon monoxide level inside the house was 500 parts per million, and they began ventilating the building. Two hours later, the house was cleared of carbon monoxide.

Firefighters reported that the carbon monoxide was caused by a malfunctioning oil burner in the basement.

Return to telegram.com for updates on this developing story.

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Audience 218052 provided by Nielsen/NetRatings

The Boston (MA) Herald via World Wide Web 12/14/2008

Source Website: www.bostonherald.com

By Renee Nadeau Sunday, December 14, 2008 <http://www.bostonherald.com> Local Coverage

Following are tips for staying safe and warm in the aftermath of the ice storm:

Never touch downed power lines or anything in contact with them, National Grid spokeswoman Debbie Drew said.

To ensure the safety of utility crews, shut off the main breaker in your electric service panel, Drew said.

Never run a generator indoors, as the engine emits deadly carbon monoxide. Always use the equipment outdoors and away from open windows, doors or vents. Use a battery-powered CO detector when using a generator, Briggs & Stratton Home Power advised.

Do not use appliances to heat your home that are not intended for such a purpose. "We don't want people to try to get creative with alternative heating sources, like ovens or grills," Massachusetts Emergency Management Agency spokesman Peter Judge said.

Leave a faucet running - just a trickle - to help keep pipes from freezing, Judge recommended. Moving water, even if it's cold water, is less likely to freeze in pipes.

Matt Bordonaro, spokesman for Travelers Insurance Company, recommends taking pictures of storm damage for insurance purposes, especially if you plan to get it repaired immediately. Also, hold on to all receipts for supplies and contractors to include in your insurance claim. Some policies will even reimburse you for hotel and meal expenses if your home is uninhabitable due to storm damage.

To find the nearest emergency shelter or resources, call 211.

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Audience 1387835 provided by Nielsen/NetRatings

Boston (MA) Globe via World Wide Web 12/14/2008

Source Website: www.boston.com

As Cleanup Continues, 133K Still Waiting For Power

BOSTON--Authorities deployed more than 1,000 National Guard troops to help communities hit hardest by a devastating ice storm as work crews worked around the clock to restore power to thousands homes and businesses in Massachusetts, including 133,000 electricity customers who were still in the dark on Sunday.

Plummeting temperatures sent more residents fleeing to shelters. About 1,900 residents spent the night in more than 60 shelters, nearly double the number of those who sought shelter Friday night.

"People who toughed it out the first night decided to take advantage of the shelters," said Peter Judge of the Massachusetts Emergency Management Agency.

The potential for high winds and rain over the next 24 to 36 hours is likely to affect efforts to restore power and may also create additional outages in Massachusetts, National Grid said in a statement released late Sunday.

Judge said that access to downed power lines and poles remains the biggest obstacle for workers. While the major roads are cleared, many secondary roads in rural areas remain blocked by fallen trees and tree limbs.

Eighty-eight communities have made local emergency declarations, Gov. Deval Patrick said in a statement, adding that he was monitoring the situation and working with state and local officials to ensure people who have been hit by the storm have access to the resources and assistance they need.

The state and local communities will be receiving some financial help for the cleanup. President Bush has signed a federal emergency disaster declaration for the effected counties. Massachusetts cities hardest hit by the storm are in northern and central regions, including Leominster, North Andover, Salem, Spencer, Newburyport, Athol, Tewksbury, Worcester.

About 350,000 electricity customers lost power at the height of the storm.

"Slowly but surely we're creeping in the right direction," Judge said.

The storm appears to have claimed the life of a Marlborough public works supervisor who went missing while responding to tree limbs downed by the storm.

State police divers recovered the body of Kevin Connolly Saturday afternoon in the Sudbury Reservoir

The 50-year-old Connolly was last seen at the department of public works headquarters around 5 a.m. on Friday. The truck he was assigned to was found near the DPW yard.

Connolly was a foreman for the town's forestry division for 19 years. He was supervising work crews responding to calls of downed limbs and branches caused by Thursday night's ice storm. Authorities are investigating the cause of death, but foul play is not suspected.

Lt. Gov. Timothy Murray planned to visit Gardner on Sunday afternoon to tour the area and meet with Mayor Mark Hawke, members of the legislative delegation and residents impacted by the storm at the Gardner Middle School storm shelter. Gov. Deval Patrick on Friday declared a statewide state of emergency.

National Grid says it has mobilized more than 5,000 personnel, contractors, forestry crews and support staff in response to the storm damage from as far away as Michigan, Ohio, Illinois, Washington, North Carolina and Virginia and that progress was made overnight at key transmission and distribution circuits.

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Worcester (MA) Telegram & Gazette via World Wide Web 12/14/2008

Source Website: www.telegram.com

Shelters provide relief for many post-storm

By Richard Duckett TELEGRAM & GAZETTE STAFF

rduckett@telegram.com

After spending Friday night at a city emergency shelter at Burncoat High School, Crystal Newkirk planned to go back home with her three young children, pick up some clothes and return to the shelter later.

Unless ...

"Unless there's electricity," she said. "Which I don't think so. It doesn't sound promising."

After the ice storm of Thursday night through Friday morning, the hoped-for word was restoration. Close to 113,000 Central Massachusetts customers were without power yesterday, according to the two major electric utilities, National Grid and Unitil, and communities were making plans for long-term outages and a lengthy cleanup. In Worcester, 19,000 customers remained without power yesterday evening, and City Manager Michael V. O'Brien said it was "optimistic" to think everyone would be reconnected by Tuesday morning. The city opened an additional shelter and deployed extra police.

Some communities, including Fitchburg, Berlin, Boylston and the Quabbin Regional School District, have canceled school for tomorrow.

For some people, the lights have already come on. Margaret Loper of Sutton had been worried about getting water to her 15 horses since her home has a private well that uses an electric pump. The electricity had been restored by late afternoon Friday, she said. For others affected by the storm, however, the wait continues. National Grid said yesterday that 150,000 customers were without power statewide last night, down from a peak of approximately 295,000 statewide Friday. But spokeswoman Deborah M. Drew warned that "full restoration of power will take several days."

A statement from National Grid released last night said that all major restoration should be completed by tomorrow night, and work will focus on small pockets of significant damage.

In Worcester, 3,000 customers had had their power restored by yesterday afternoon, with 23,000 still waiting. Officials across the region were expecting an increase in the number of people seeking shelter last night. In addition to shelters at Burncoat and Doherty Memorial High School that opened Friday, Worcester opened a third shelter yesterday at Worcester Technical High School for overflow from Burncoat and Doherty. A shuttle service is running from the Burncoat, Greendale and Tatnuck fire stations.

The state and the city remained in states of emergency, but access had been restored to all of Worcester's roads, said Worcester City Manager Michael V. O'Brien. In the Burncoat and Greendale sections of the city, only 40 percent of the roads had been passable Friday. "There's been some great work being done by some very accomplished employees," Mr. O'Brien said.

Ms. Newkirk, who lives in Fitchburg, didn't just get out of her building Friday; she hit the road and got out of town with her three children and friend Samantha Meuer. Ms. Newkirk's building was "nasty cold," she said, and stores were closed in town. The five ended up at Boston Market on Park Avenue in Worcester, and someone there mentioned Worcester's storm shelters.

So they headed to Burncoat. "I'm glad we did," Ms. Newkirk said. "It was very peaceful. Very friendly. I'm gonna tell other people. I'm sure there'll be more people after last night."

Friday night was cold, and last night was expected to be similarly bitter.

It was warm inside the shelter at Burncoat yesterday morning. Newkirk's daughters Keara Portlock, 10, and Leisandra Portlock, 7, stirred just after 7 a.m. Leisandra, a budding gymnast, did a back flip in a school corridor, but Newkirk's son, Isaac Mack, 3, was still sleeping.

It had been so peaceful there Friday night that Ms. Newkirk did some studying on her laptop computer for final exams this week. She is a criminal justice major at Fitchburg State College, and she doesn't know whether the storm will change her exam schedule.

James Gardiner, Worcester's acting commissioner of Health and Human Services, said 28 people used the shelter at Burncoat Friday night, with 40 people at Doherty.

"It really was a mix of individuals. It really is stressful situation but everyone has been very cooperative and understanding," Mr. Gardiner said.

Worcester is calling its shelters "community shelters," Mr. Gardiner said. The Red Cross and Medical Reserve Corps were helping. Bob DeRosier, a volunteer with the Medical Reserve Corps, had come in from New Bedford to work a shift at Burncoat that began at 7 a.m. yesterday. "I'll be picking up stuff, delivering stuff," he said.

The American Red Cross of Central Massachusetts has received numerous calls for material and human resources help since the storm began Thursday night, according to Nicole Valentine, the agency's director of emergency services. "This is the largest operation in 15 years for us," she said.

Shelters have been set up in 24 of the 69 communities in its jurisdiction, and the agency has received help from as far away as Cape Cod.

Ms. Valentine said the Red Cross chapter also assisted in four fires.

"I can't stress enough the importance of people remembering their fire safety tips," she said. "They need to be very careful with their alternative heating resources."

Ms. Valentine recommended residents go to their local shelters rather than trying to find other risky means of heating their homes.

Today, the agency planned to send a Red Cross feeding truck to the most affected neighborhoods, including the Burncoat, Greendale and Tatnuck sections of Worcester and parts of Paxton and Holden. Anyone who sees it and needs a snack is welcome to approach, Ms. Valentine said.

The Worcester shelters had cots, blankets sandwiches and coffee.

Teresa O'Toole had no power at her home on Airlie Street in the Greendale section of Worcester. "I decided at the last minute to come here," she said yesterday standing in a corridor outside the Burncoat shelter.

"I'm glad I came. They've got everything. The sleeping was good. Everybody's friendly."

One rumor in Greendale is that the trees split by ice the most were also beetle-infested trees. "Trees snap from the top down. Trees with the red mark," Ms. O'Toole said.

Coincidentally, the Massachusetts Department of Conservation and Recreation has started emergency removals of infested trees (those with red dots) that are leaning on homes or cars and posing a threat to public safety in the Greendale/Burncoat area, Mr. O'Brien said.

A lot of Ms. O'Toole's friends in the Greendale area slept in their homes Friday night even though there was no heat, she said.

"More people should come (to the shelter)," she said.

More did. By 7 p.m. yesterday, Mr. O'Brien said the population in the shelters had increased about 20 percent over

the previous 12 hours.

But yesterday, Ms. O'Toole planned to "go back to my home, make some phone calls and visit some relatives. They don't have power."

Would she come back to the shelter?

"Yeah." Unless ...

Had she wished, Ms. Newkirk could have stayed in Fitchburg, where there were shelters at the Fitchburg Senior Center and Memorial Middle School on Rollstone Street.

In Barre, more than 40 people were at Quabbin Regional High School Friday night, police said, and a Lunenburg shelter drew 30 people, according to Lunenburg Police Chief Daniel F. Bourgeois.

Chief Bourgeois' Saturday had begun like that of many officials in communities affected by the ice storm. He met with other Lunenburg officials, such as highway and fire department personnel, to "get the game plan down for today." Three-quarters of the town was still without power, he said.

Still, around and about there were incremental signs of hope -- or restoration.

In Holden, police said that power had been restored to "part of Main Street." For Holden, it was a start.

Telegram & Gazette reporters George Barnes and Jacqueline Reis contributed to this story. Contact Richard Duckett by e-mail at rduckett@telegram.com.

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Union-News & Sunday Republican (Springfield, MA) via World Wide Web 12/14/2008

Source Website: www.masslive.com

As Cleanup Continues, 162K Still Waiting For Power

The Associated Press

BOSTON (AP) Authorities deployed more than 1,000 National Guard troops to help communities hit hardest by a devastating ice storm as work crews worked around the clock to restore power to thousands homes and businesses in Massachusetts, including 133,000 electricity customers who were still in the dark on Sunday.

Plummeting temperatures sent more residents fleeing to shelters. About 1,900 residents spent the night in more than 60 shelters, nearly double the number of those who sought shelter Friday night.

"People who toughed it out the first night decided to take advantage of the shelters," said Peter Judge of the Massachusetts Emergency Management Agency.

The potential for high winds and rain over the next 24 to 36 hours is likely to affect efforts to restore power and may also create additional outages in Massachusetts, National Grid said in a statement released late Sunday.

Judge said that access to downed power lines and poles remains the biggest obstacle for workers. While the major roads are cleared, many secondary roads in rural areas remain blocked by fallen trees and tree limbs.

Eighty-eight communities have made local emergency declarations, Gov. Deval Patrick said in a statement, adding that he was monitoring the situation and working with state and local officials to ensure people who have been hit by the storm have access to the resources and assistance they need.

The state and local communities will be receiving some financial help for the cleanup. President Bush has signed a federal emergency disaster declaration for the effected counties. Massachusetts cities hardest hit by the storm are in northern and central regions, including Leominster, North Andover, Salem, Spencer, Newburyport, Athol, Tewksbury, Worcester.

About 350,000 electricity customers lost power at the height of the storm.

"Slowly but surely we're creeping in the right direction," Judge said.

The storm appears to have claimed the life of a Marlborough public works supervisor who went missing while responding to tree limbs downed by the storm.

State police divers recovered the body of Kevin Connolly Saturday afternoon in the Sudbury Reservoir

The 50-year-old Connolly was last seen at the department of public works headquarters around 5 a.m. on Friday. The truck he was assigned to was found near the DPW yard.

Connolly was a foreman for the town's forestry division for 19 years. He was supervising work crews responding to calls of downed limbs and branches caused by Thursday night's ice storm. Authorities are investigating the cause of death, but foul play is not suspected.

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BOSTON SUNDAY HERALD

Date: Sunday, December 14, 2008
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Little calm after storm

Cities, towns scramble as 191,000 still without power

By RENEE NADEAU
and KATY JORDAN

About 191,000 central and western Massachusetts residents hunkered down for a dark, cold weekend without power last night as crews worked to restore electricity and President Bush declared a state of emergency.

"It's been well over 10 years since we've had something of this impact," said Peter Judge, spokesman for Massachusetts Emergency Management Agency.

President Bush's declaration frees up federal funds and "resources from other states around us," said James Mannion, deputy public information officer for the agency, according to a CNN report late last night. He said state officials have requested cots as 1,300 people were expected to stay in emergency shelters last night.

About 151,000 of the homes and businesses still in the dark were **National Grid** customers, spokesman David Graves said. National Grid hopes to restore power to most of its customers by midnight tomorrow, said Graves, but some individuals will not have power until Tuesday.

The utility company sent out about 450 work crews to restore power and had several hundred more employees working in customer service and support.

Temperatures are expected to rise today, but snow is possible Wednesday.

After Gov. Deval Patrick declared a state of emergency on Friday, 500 National Guard troops were activated to help clear debris and assist in storm recovery.

The body of a Marlboro public works employee who went missing Friday while working on storm recovery was found by state police divers in the Sudbury Reservoir at 2:30 p.m. yesterday, police chief Mark Leonard said.

Kevin Connolly's truck was found Friday, stuck on a brook's steep embankment near the DPW building. It is believed that Connolly fell in the water there, Leonard said.

Leonard said police were aware of a medical condition that could have contributed to Connolly's death, but could not say for sure until the autopsy is performed.

In Worcester, the state's hardest-hit city, Mayor Konstantina Lukes said the city was unprepared for the unprecedented damage caused by the storm, but statewide efforts have been quick and effective.

"I think the state has been responding very well," she said. "They're treating it with military strategy."

As for Worcester's 22,000 residents who re-

mained in the dark last night, "we've opened an extra shelter and we're bracing for the worst," she said.

Lukes added that only 100 people had shown up at the two shelters.

Instead, Worcester residents without power were seeking refuge in hotels.

A clerk at Worcester's Garden Hilton said the inn even had a \$99 "storm special."

Bay Staters trying to keep warm also were buying generators, which were sold out at many stores.

In Chesterfield, almost 100 percent of people are still without power today.

"I'm hoping for power myself soon, but for some people it could be a few days, possibly Wednesday," said Chesterfield's police chief Gary Wickland, who was using a generator and a wood stove.

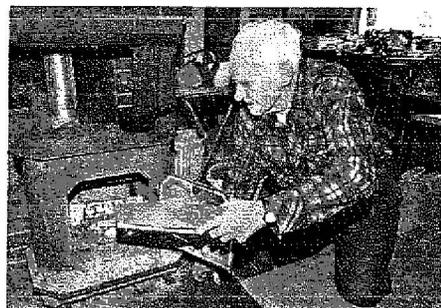
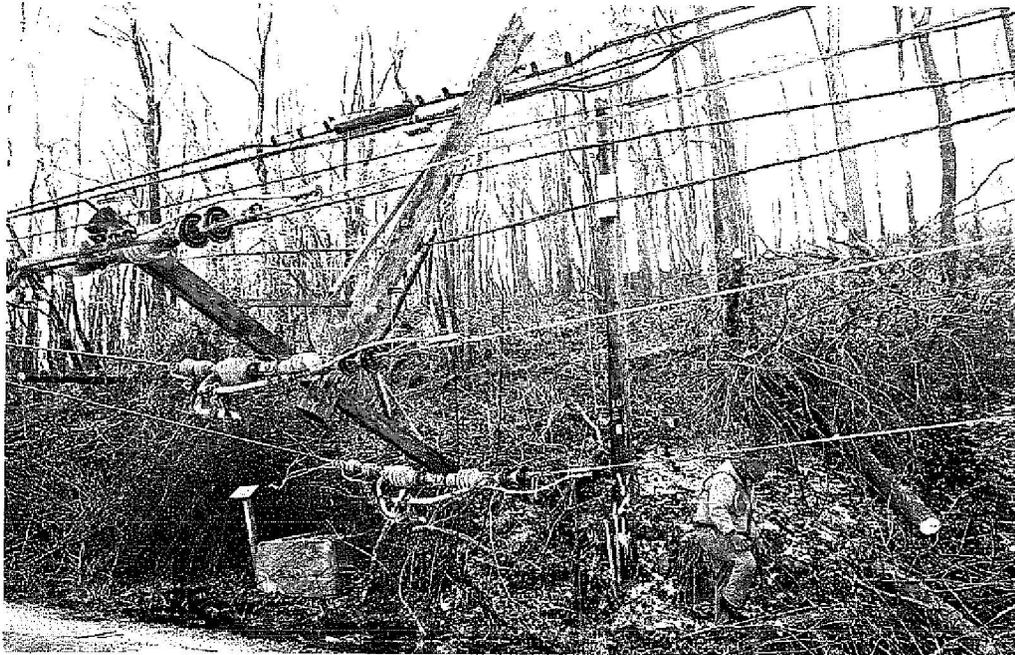
The storm offered an entrepreneurial opportunity for some. Pam Eaton lost power at her home on Friday, along with most of the town of Clinton, but her bake shop, Pam's Place, was one of the few businesses that did not lose power. Yesterday she saw a 60 to 70 percent jump in traffic, and could barely brew enough joe.

"They can't make it at home," she said.



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STAFF PHOTOS BY PATRICK WHITTEMORE

CLEANUP IN BOLTON: Rob Hagopian saws ice-covered trees blocking his Harvard Road home; Frank Cresta, a laborer for Vittiglio Construction, clears debris beneath a toppled telephone pole; and Charles Harvey burns wood in the wake of a power outage, clockwise from left.

BOSTON HERALD

Date: Monday, December 15, 2008
Location: BOSTON, MA
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Page: 5
Keyword: National Grid

Homes slowly regain power

BY BENJAMIN BELL

About 140,000 Massachusetts residents were still praying for power last night — three days after a nasty ice storm uprooted trees, toppled utility poles and sent thousands seeking shelter across the state.

"We haven't had anything like this in 30 years," Mayor Mark Hawke told the Herald last night from the city of Gardner, where 500 residents packed into shelters, about 100 National Guardsmen helped out and school

was called off through Wednesday.

"Power is creeping back on now. By Tuesday or Wednesday, we should have the majority of people lit up. There is a light at the end of the tunnel."

Gov. Deval Patrick last night said more than 1,000 National Guard members were assisting across the state, while nearly 1,900 people took advantage of more than 60 shelters.

Northern and central Massachusetts appeared hardest hit by the storm. Worcester and many surrounding towns called off school today.

"It's a war zone," said Carolyn Stimpson, vice president of Mountain Services at Wachusett Mountain in Princeton.

"We are closed. We would be love to be open, but we don't have power."

According to the Massachusetts Emergency Management Agency, power restoration will be an ongoing

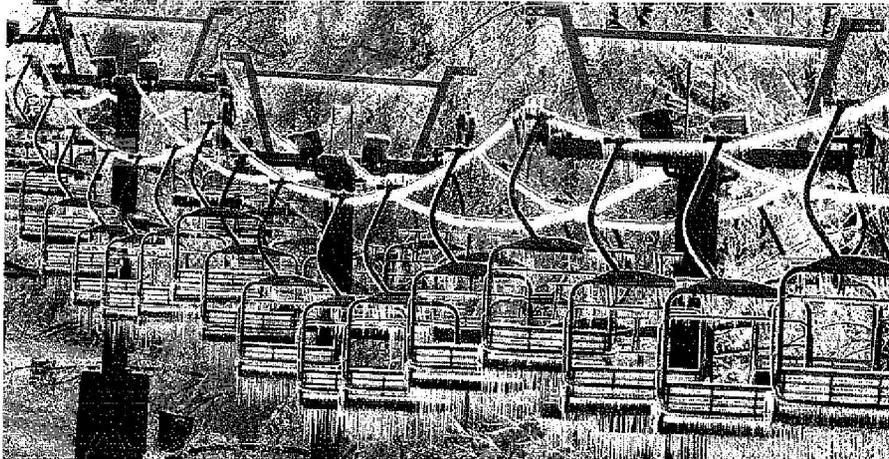
effort over the next few days.

"The size is incredibly extensive. From an ice storm perspective, it certainly has had a huge impact," said Peter Judge, spokesman for Massachusetts Emergency Management Agency. "As we are speaking, people's lights are going on. We are trying to get it done as soon as possible."

National Grid said it has sent more than 5,000 personnel in response to the storm damage and that progress was made overnight.

One death is being attributed to the storm, as the body of a Marlboro public works supervisor was pulled from the Sudbury Reservoir Saturday. Kevin Connolly, 50, had gone missing while on the job Friday.

The Associated Press contributed to this report.



ICE-ING ON TOP: An ongoing power outage shut the ski lift at the Wachusett Mountain ski area yesterday, and Gardner Middle School, below, served as a shelter to Patricia Wood, left, her sister, Marianne Berberena, and Kathleen White, right, as well as other Gardner residents with no power.

www.bostonherald.com



HERALD
PHOTOS BY
JIM MICHAUD

BOSTON HERALD

Date: Monday, December 15, 2008
Location: BOSTON, MA
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Union-News & Sunday Republican (Springfield, MA) via World Wide Web 12/15/2008

Source Website: www.masslive.com

Power Outages Continue In WMass

By DAVID BERGENGREN

ELIZABETH ROMAN Staff writers

Thousands of Western Mass. residents still lacked power, many towns were without water and some roads remained closed Sunday as communities worked to clean up from last week's massive ice storm.

Western Massachusetts Electric Co. reported 10,893 power outages as of Sunday night, including more than 2,000 customers in Hampshire County, 1,923 in Franklin County and 5,196 customers in Berkshire County.

"It's really bad out here and we have not gotten any help," said Michael R. Leganza, of Middlefield, a small town near Westfield.

"We lost power on Thursday night and we still haven't gotten it back. Most of the roads are completely blocked off with trees. Everything is covered in ice," Leganza said.

More than 2,500 National Grid customers in Berkshire, Franklin, Hampden and Hampshire County were still without power Sunday, the utility reported.

The potential for high winds and rain over the next 24 to 36 hours is likely to affect efforts to restore power and may also create additional outages in Massachusetts, National Grid said in a statement released late Sunday.

Utility officials anticipate having the majority of service restored by midnight today.

State police in Lee and Shelburne said National Guard troops had been deployed to Sandisfield and Otis, and had set up an emergency command post in Heath to assist while roads are being reopened and power restored. The numbers of troops were not available Sunday night.

"The damage is pretty extensive," a state trooper based in Lee said, "especially in high elevations above 1,400 or 1,500 feet. Hundreds of trees are down."

Along the western stretches of the Massachusetts Turnpike, he said, "It looks like an ice palace."

The power is still out in parts of Becket, Otis, Tyringham and Sandisfield, the trooper said.

States of emergency have been declared by Ashfield, Leyden, Hawley, Shelburne and Northfield, state police in Shelburne said.

Parts of Ashfield remain without electricity, they said. Other power outages and closed roads were reported in the Shelburne area, but no details were available Sunday night.

Heath is using its senior center as an emergency shelter, a state trooper based in Shelburne said. Other emergency shelters that have been set up include the Federal Street Church in Charlemont and Sanderson Academy in Ashfield, he said.

In Hadley, residents from surrounding towns were filling up the hotels and inns along Route 9.

Rick Kim, a guest services agent at the Howard Johnson Inn in Hadley said people have been filling up the rooms since Saturday.

"A lot of people have no electricity and no water," Kim said. "Half of our rooms have been taken by families coming

with their kids and even some dogs."

Many schools have been closed since Friday and are serving as shelters to local residents.

The Mohawk Trail Regional School District posted a message on its Website saying school will be canceled Monday due to dangerous road conditions.

Barbara J. Ripa, the Superintendent of Schools for the Hampshire Regional school district said she made the decision to cancel school after speaking with the Williamsburg police chief and a coordinator with the Massachusetts Emergency Management Agency.

"They felt that it was important not to open schools on Monday because three of the towns we serve are still under hazardous conditions," Ripa said.

She said hundreds of families still do not have power and many streets are impassable.

Ripa said the Anne T. Dunphy School in Williamsburg will continue to serve as a shelter for families in need of water or a safe place to sleep with heat.

"Some of these people have described their neighborhoods like war zones because of the level of devastation," Ripa said.

Hampshire Regional school district Superintendent Regina H. Nash said Conway Grammar School, which is serving as a temporary shelter, will be the only school closed Monday.

"Conway is the only hill town we cover that has been seriously affected. Hampshire Regional High School will be open and we encourage students who can make it to attend, but buses will not be going into Conway," Nash said.

Authorities deployed more than 1,000 National Guard troops to help communities hit hardest by the devastating ice storm as work crews worked around the clock to restore power to thousands of homes and businesses, Gov. Deval L. Patrick said.

Peter Judge, of the Massachusetts Emergency Management Agency, said that access to downed power lines and poles remains the biggest obstacle for workers. While the major roads are cleared, many secondary roads in rural areas remain blocked by fallen trees and tree limbs.

The state and local communities will be receiving some financial help for the cleanup. President George W. Bush has signed a federal emergency disaster declaration for the effected counties.

Massachusetts cities hardest hit by the storm are in northern and central regions of the state.

Eighty-eight communities have made local emergency declarations, Patrick said in a statement, adding that he was monitoring the situation and working with state and local officials to ensure people who have been hit by the storm have access to the resources and assistance they need.

The Associated Press contributed to this report.

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Is There No End?

Deep freeze, dark days continue

By Scott J. Croteau

TELEGRAM & GAZETTE STAFF

scroteau@telegram.com

Worcester City Manager Michael V. O'Brien summed up the damage caused by the rain and ice storm in the city by referencing a famous Charles Dickens book.

"It is a tale of two cities," the city manager said yesterday.

While the east and southern part of the city experienced flooding and some tree debris because of wind, the north end and west side experienced damage as if a "hurricane level storm" passed through, he said.

"It is by all accounts at a magnitude not seen in a long time," Mr. O'Brien said.

City shelters at Burncoat High School and Doherty Memorial High School had about 100 people huddled inside as those without power sought relief there. The Great Brook Valley area and Curtis Apartments were getting power back, but city officials found others without power, especially from Lincoln Village, were deciding to head to the shelters.

The two shelters at the high schools will remain open and a third location is on standby in case of increased demand. The city schools are closed, but today people staying in shelters will be moved to another location as schools will be open tomorrow. Officials from several organizations are going door to door and checking on the well-being of residents -- particularly those in vulnerable areas and housing complexes.

As of 4:30 p.m. yesterday, there were roughly 15,000 people in Worcester without power -- down from 19,000 as of Saturday night. There were 57 National Grid and other crews in the city.

Mr. O'Brien also said people are able to drive around city streets and there are very few streets where downed power lines are still on the road.

"Be advised that the nature of the grid system is such that the outlying areas, furthest away from the substations, will likely be the last to regain electrical service," a news release from the city said. "National Grid advised that it may be Wednesday Dec. 17 before these services might be restored. This could be optimistic."

Debris is being collected from city streets and residents may continue to put their debris at the sidewalk edge. Regularly scheduled trash and recycling collection will take place today, but there may be some instances where officials cannot reach a home. City Hall will be open today as well.

National Grid crews continued to work on power lines across the region to restore power to homes and businesses. Contractors from at least eight states were brought in to help.

The company services areas in Massachusetts, New Hampshire and Rhode Island. There were 111,000 customers in Massachusetts still without power as of 4 p.m. yesterday. New Hampshire had 8,500 customers without power.

National Grid officials said restoration work will continue, today, tomorrow and Wednesday. Since the storm hit, National Grid last night had restored power to approximately 180,000 customers in Massachusetts, down from 294,000 that initially lost power. Northern Worcester County was the worst hit region, according to a press release

from National Grid.

"Devastation ... that's the word being used," said National Grid spokesman David Graves.

National Grid employees are finding that, once they gain access to streets previously blocked by tree debris, the damage to power lines is more extensive than previously thought.

Unitil said it has crews out working to restore power in their towns. The company did not provide a specific estimated restoration time. The company reported yesterday afternoon that a total of 18,282 customers were without power in Fitchburg, Lunenburg, Townsend and Ashby.

All the company's customers in Ashby remained without services as of 2 p.m.

In Ashburnham last night about one-third of the town's 3,000 residents were without power, a spokesman for the local light and power company said.

Peter Judge, spokesman for the Massachusetts Emergency Management Agency, said crews continue to remove debris from roads that were completely blocked in several communities.

"There is still no endgame time in sight," Mr. Judge said.

"We're dealing with these issues of debris. We are in new territory. It has been over 10 years since we've dealt with this type of disaster."

The process is a lot slower than normal because of the downed trees, he said. Crews have been cutting down limbs nonstop.

"We're getting there and hopefully the numbers (of people without power) will continue to decrease," he said.

The Massachusetts National Guard has crews out clearing debris, providing power, water, and shelter as well as performing evacuations in some areas.

Meanwhile, the American Red Cross of Central Massachusetts has had to tap other chapters in the state for supplies and volunteers. Services have also been provided to people whose dwellings have had fires over the past few days.

Nicole Valentine, the agency's director of emergency services, said volunteers are coming from Boston and as far as Cape Cod to help.

Her agency has local volunteers, but many of them are dealing with their own troubles because of the storm.

"We learned very quickly no one is immune to disasters," she said.

The Red Cross is giving support to 10 shelters and many local shelters are running low of supplies and volunteers. "Our supplies were depleted in the first two days," she said. "We are relying on our other state chapters."

The Red Cross also rolled out mobile feeding yesterday and volunteers gave out snacks, hot coffee and hot chocolate to people who are stuck. Some people received meals.

Ms. Valentine asked other chapters for three more mobile feeding vehicles.

As of yesterday morning, the Red Cross responded to area fires. There had been seven over a 48-hour period, she said yesterday morning.

There were also two fires in Holden yesterday morning. Fire officials responded to fires almost simultaneously on Causeway Street and Doyle Road.

At 251 Doyle Road, a fireplace caused a fire that reached up a wall and into a ceiling inside the single-family home. No one was injured.

Firefighters then rushed to 59 Causeway St. sometime before 10 a.m. and saw flames pouring out the top of a split-level home.

The fire was in a section of town without power. The fire started when the homeowner attempted to prevent pipes from freezing.

In Spencer residents were asked to bring debris to the fire training center and transfer station on South Spencer Road or to pile branches close to the road so highway crews can chip the materials.

Leominster residents were told to bring debris to Doyle Field or Fournier Field or pile it at the front of their yards for later pickup.

About 80 percent of the residents there had power restored by 10:30 a.m. yesterday.

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The Berkshire Eagle

Nearly 6,000 remain without power

By Derek Gentile, Berkshire Eagle Staff

Updated: 12/15/2008 03:38:57 AM EST
Monday, December 15 Three days after a severe ice storm slammed into the New England states, Windsor resident Jan Bodie reported that a vast majority of homes off Route 9 in her tiny community remain without power.

"We still have an inch of ice on a lot of our roads," she said. "The only homes that have power are along Route 9."

Her town is not alone: There are still at least 5,851 homes in Berkshire County without power, the most in Western Massachusetts, according to the Western Massachusetts Electric Co. Web site.

A vast majority of those are in the smaller communities in the county. Temperatures remained warm enough in portions of western Berkshire County — including Pittsfield and Great Barrington — to prevent icing.

"It seems that most of the communities along Route 7 were spared," reported a spokesman for the Massachusetts State Police. "Most of those towns got rain, but no ice."

Gov. Deval L. Patrick declared a state of emergency on Saturday, and the National Guard has been seen in several towns clearing away debris and moving wires off the roads. Spokesmen for both National Grid and WMECO report that their trucks have been out over the weekend and will return today to continue work.

On Saturday night, temperatures fell into the single digits, and several towns, including Otis and Windsor, opened their town halls to residents and allowed them to stay the night, while the town of Florida opened its Senior Center. So far, residents have been coping by staying with friends or relatives, or using wood-burning stoves or generators to provide heat.

As of Sunday evening, 5,555 county customers are still without electrical power, according to the Web site. This includes 372 — or 96 percent — of the 385 homes in Savoy. In other communities, the numbers still affected are similar: In Windsor, its 496 of the 529 homes, or 93.7 percent, without power; 1,743 of the 1,925 homes in Becket, or 90.5 percent; and 252 of the 322 homes in Washington, or 78.2 percent.

Otis has also been hit hard — 1,487 of the town's 1,986 homes, or 74.7 percent, remained without power as of 6 p.m. Sandisfield, with 468 homes still out and Peru, with 296 homes still dark, also are struggling.

National Grid reported a total of 296 Berkshire County homes that are its customers still without power. Florida, with 206 households, has the vast majority of homes still without electrical connections. Adams, Cheshire, Egremont, Hancock, Monterey and New Marlborough all have between four and 27 homes awaiting service.

In all, 26 of the county's 32 cities and towns experienced power outages in the wake of the storm, according to the two companies' Web sites.

Both WMECO and National Grid have given no timetable for the return of power in any of these specific towns. According to spokesmen for both power companies, the prognosis is by midweek at the best.

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The Berkshire Eagle

Local public works crews as well as crews from both utility companies are working to clear roads, according to a National Grid spokesman.

As of Sunday night, Worcester County remained the hardest hit area in Massachusetts, according to National grid. A total of 65,288 homes remain powerless. Middlesex County has 24,357 homes still in the dark, and Essex County has 18,127 homes out.

In Western Massachusetts, Franklin County still has 4,425 homes still without electricity, while Hampshire County has 2,333 households with no power.

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Article published Dec 16, 2008

Dec 16, 2008

Grid: Power should be restored tonight

College, schools helped with cleanup

By Lynne Klafit CORRESPONDENT

LANCASTER— National Grid informed town officials yesterday that they expect to have all 2,899 households in town powered up within 24 hours, by early evening.

Town Administrator Orlando Pacheco told selectmen last night that at 4 p.m. about 50 percent of residences were back on line.

"We have heard out of Washington D.C. that 75 percent of our storm-related costs will be reimbursed. I called Congressman (Niki) Tsongas' office and requested that she pursue 100 percent," said Mr. Pacheco.

Selectman Jennifer E. Leone was "extremely impressed" by the quick actions of the town's public safety personnel.

"They worked their butts off and I would like to thank them," she said. "Our response was significantly better than most towns."

Mr. Pacheco noted that Atlantic Union College, the Nashoba Regional School District and the Perkins School assisted the town in their cleanup efforts.

The town administrator cautioned residents about trees or limbs on power lines.

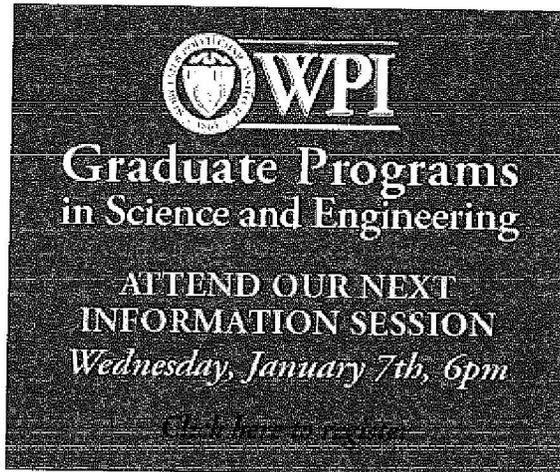
"The town is not authorized to remove those. National Grid's arborists will come out and once they hit the ground, we will take care of them," said Mr. Pacheco.

In other business, selectmen voted to accept Habitat for Humanity of North Central Massachusetts' proposal to renovate 32 Carter St., a property the town purchased for \$1 from the federal government, and convert it into an affordable housing unit.

"Both Habitat and Montachusett Enterprise Commission are excellent, but we felt that Habitat's model was much stronger; they will supply buyer financing, which in the present market would be especially prudent," said Mr. Pacheco.

The board also appointed Ruth Anderson from associate member to a full member to the town's Conservation Commission and Heather L. Lennon to the Historical Commission.

Annual Town Meeting article deadlines were also announced: March 2, 2009, at 4 p.m., for zoning and citizen petitioned articles and Tuesday, March 31, for all other articles.



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Scams crop up as thousands await power

By JAY FITZGERALD and RICHARD WEIR

Emergency crews continued their Herculean effort to restore power to more than 95,800 Massachusetts customers amid grumblings about the slow pace of repairs and scams targeting powerless homeowners.

Some lawmakers said there's no need to blame utilities — at least now.

"No one is wanting to string them up — yet," said state Sen. Michael Morrissey, co-chairman of the Legislature's Telecommunications, Utilities and Energy Commission. "We want them to string up wires first."

After electricity is restored, though, Morrissey said they will have to take a close look at what happened and where improvements can be made.

National Grid yesterday warned homeowners in the Worcester area to be on the lookout for fiends posing as utility workers who have hit up customers for as much \$2,500 to restore their electricity. "We do not ask for money or take money to restore service," said Debbie Drew, a company spokeswoman.

Gov. Deval Patrick took to the skies yesterday in a Black Hawk helicopter to survey the swath of devastation wreaked by toppled limbs, trees and power lines.

"There are trees down everywhere — wires down," he said. "I saw telephone and electric poles that were snapped in half, some of them just hanging by what's left of the wire."



STAFF PHOTO BY MIKE ADASKAVEG

Yesterday's balmy, mid 50-degree temperatures provided utility crews a little relief from

falling ice and frozen hands while clearing trees and repairing downed lines.

National Grid yesterday deployed 1,000 crews, including workers from Tennessee, Indiana and eight other states, as well as Canada, to remove debris and restore power lines.

Peter Judge, a spokesman for the Massachusetts Emergency Management Agency, said about

STAFF PHOTOS BY TED FITZGERALD
STATE OF AFFAIRS: Gov. Deval Patrick, left, boards a helicopter to survey storm damage. Dick Laramee, above, waits at Gardner Middle School until power is restored at his home. A chestnut tree, right, poses a challenge for Michael Shadburn, left, John Guislain and John Coleman.

2,000 people yesterday remained in 62 shelters while 95,800 homes — most of them in Worcester County — still lacked power, down from a peak of 350,000 on Friday.

"Progress has been made. We're doing everything we can to get these lights back on," he said, adding that 1,500 National Guard troops, along with state highway workers, helped clear fallen trees.

In New Hampshire, where an estimated half-million homes were left dark by the ice storm, some 150,000 houses remained without power, while in Maine, 38,000 out of 223,000 darkened homes still had no electricity, said emergency management officials.

Hillary Chabot contributed to this report.

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Article published Dec 16, 2008

Dec 16, 2008

Response effort 'terrific'

Shelters' staff, food garner praise

By Matthew Bruun and Brian Lee TELEGRAM & GAZETTE STAFF

FITCHBURG— When the water in her dog's bowl froze over Sunday, Nancy McKenna finally gave up on her Plymouth Street house.

"I couldn't take the cold in my house anymore," she said yesterday.

She spent Sunday night at the Senior Center on Wallace Avenue, where hundreds have taken shelter in warm beds and enjoyed hot meals since the devastating ice storm threw most of the city into darkness and cold early Friday. More than half the city remained without power yesterday.

The Senior Center was one of three shelters still operating in Fitchburg yesterday. Several parts of the region had closed or were preparing to close their shelters as power was restored and roads were cleared — such as in Leominster, where the Southeast School shelter may be dismantled as soon as today — but many areas are still bracing for days without full utility service.

There were 180 dinners served at the Fitchburg Senior Center Sunday night and 200 more meals were prepared for delivery elsewhere, including the shelter at Memorial Middle School, according to Annie K. DeMartino, a city councilor who has also been volunteering since the shelter was opened up Friday morning.

Mrs. DeMartino said there were more than 200 people staying at the shelter Sunday night.

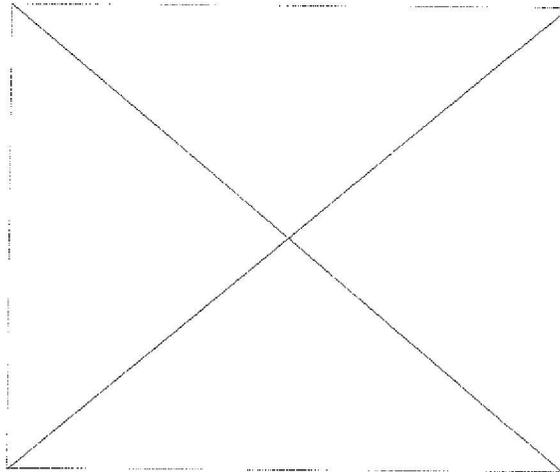
Soldiers from the National Guard helped volunteers stock the kitchen at the Senior Center yesterday morning. During the night they helped local police with security in the building.

"I think the response has been terrific," said former Mayor Dan H. Mylott, another volunteer. He said he was impressed by the donations of food and supplies. "Everyone has stepped up to the plate. Everyone's saying yes."

At the nearby Montachusett Regional YMCA, Executive Director Richard Palmer said the facility had been opened up for free showers for those using the city's shelters. Children at the shelter were also allowed to use the gymnasium to play basketball. He added he was happy to lend the use of the facility in such extraordinary circumstances.

"What's going on there is great," said Teresa Ashby, another visitor to the Senior Center shelter. Ms. Ashby said she was raised in Louisiana and was impressed with how quickly Fitchburg had its emergency response up and running.

Several seeking shelter arrived with pets and were directed to the public library, where the Central Massachusetts



Disaster Animal Response Team was prepared to house 40 animals.

JoAnn Griffin, president of the nonprofit organization, said the storm showed the need for preparedness.

"This clearly has put Central Massachusetts on the map as far as disasters," Mrs. Griffin said. Her shelter was set up at the request of the Board of Health and the animal control officer on Sunday.

She had volunteers ready to staff the animal shelter until the facilities for people are dismantled in the coming days. Yesterday, Michelle Borelli helped keep watch on the dogs and cats being housed at the library in the Garden Room, where plastic had been laid on the floor to let the dogs roam free.

"We try to create a real sense of safety and security," Mrs. Griffin said, noting how stressful it can be for the animals to be separated from their owners, just as the owners may be reluctant to part with their pets.

Cleanup and utility crews were still hard at work in Rutland yesterday, where damage was severe and widespread. A shelter was set up at the Naquag Elementary School on Friday, but it had to be relocated to the neighboring Central Tree Middle School after a burst pipe was discovered Sunday afternoon.

About 40 people have used the shelter during the day and more than 30 people spent Sunday night on cots lining the school hallway, said Elisha Inferrera, a member of the town's Community Emergency Response Team.

Visitors recharged their cell phones in a designated plug strip and were given access to hot showers, along with three meals a day, thanks to donations of food from local stores, restaurants, and even individuals who have dropped off items that won't survive the lack of power in their refrigerators, said Lisa Chaffee, who is chairwoman of the response team and works as an EMT in town.

"Nobody can say no," she said.

James and Esther Wood of Rutland arrived at the local shelter around 4 a.m. Saturday, accompanied by their dog, Betsy. The couple said they appreciated the safe environment in the school and the generosity of the volunteers who had attended to them since their arrival.

"We were frozen in that house," Mr. Wood said yesterday. "The people have been wonderful here."

Children at the shelter treated residents with an impromptu Christmas music concert late yesterday afternoon.

Karen Speroni of Rutland took her children, Jack, Elena and Kallie, to Wachusett Regional High School in Holden yesterday for lunch.

"Our house was 41° degrees, she said. Only after her husband found the main roads impassable Friday morning did the scope of the storm become clear.

William Beando, the Wachusett high school principal, said 10 to 15 families had been spending their nights at the shelter since Friday. Among the shelter-seekers was a Wachusett teacher, her husband and their infant twins.

In Fitchburg, Ms. McKenna had only praise for the volunteers who had helped keep her family safe and fed.

"These people are really helping," she said. "I'm impressed."

All things considered, said Russell F. Brady, the emergency setup at Quabbin Regional Middle-High School isn't half bad.

Mr. Brady, 74, was one of about a dozen residents of Waterwheel Village, a trailer park community in Barre, staying here because of power outages.

The school accommodated about 130 people the past three nights, with most from elderly housing and the trailer park, Maureen Widing, school nurse and consultant to the Board of Health for emergencies, said yesterday.

Throughout their stay the facility has been clean, the food "unbelievable," and the volunteers "are the nicest bunch of people I've ever met in my life, and I'm not kidding," Mr. Russell gushed.

Susanne R. Musnicki, middle school principal, said residents of Grandview Terrace, housing for the elderly, had left yesterday morning after their homes' power was restored.

Ms. Musnicki also lost power at her home. Mr. Brady and Marguerite A. Marleau, 72, joked that the principal's husband, who works at National Grid, couldn't pull strings with his company to get power restored.

Ms. Marleau, who lives near Mr. Brady, was also pleased with how things were going. As of yesterday, she had not spent a night at the shelter, but she said she wished she had, instead of driving through treacherous conditions to get to her son's house in Jefferson.

Ms. Marleau said she came back to check on her three cats, who must be inside, away from wild animals in the neighborhood.

The quality of the food was also praised by Randy Wentworth, operations director for National Grid, who during a meeting with town officials asked if they would keep the food coming, to keep the exhausted workers going.

Mr. Brady said, "At night, the guys from National Grid come in droves and we all clap. It's great."

A shelter is also set up at Charlton Senior Center, but last night at around 5 there were no people around. Perhaps two couples would be staying overnight, after six people stayed Sunday, said Elaine Kingston, director of the center.

Many people were in and out looking for food, and water, so that they could flush their toilets, said Ms. Kingston, who also lost power at home. For showers, they sent people to Sims Health & Racquet on Sturbridge Road and Sturbridge Host Hotel & Conference Center.

Services have been available at the center or the middle school since Friday, she said.

The senior center has 10 cots up, and another 40 could be put up in a main room if needed, she said.

Back at the Quabbin meeting, Mr. Wentworth said 50 percent to 60 percent of town customers were without power, and it was clear outages would continue into next week. He said the company was still providing crews from Virginia, and a crew from Kentucky left.

Overall, progress was actually slower than he thought it would have been, he conceded.

"We are in desperate straits with all the trees we have," he said. "The good news is — they are good workers."

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The Boston Globe

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With customers in the dark and bitter, utilities defend effort

By David Abel
GLOBE STAFF

Last night, Doris Poindexter and five members of her extended family, moved into their third hotel room since Friday. The family, whose Townsend home lost power Thursday night during an ice storm that crippled parts of the region, has had trouble staying put because many area hotels are overbooked.

The increasingly stressed family is running out of money — and patience. Their electric company told them their power wouldn't be restored until at least Christmas Eve, a week from now.

"It's really horrible — just hard to believe it could take this long," said Poindexter, 58, an office manager whose husband is disabled. "I can't tell you how frustrating this is."

As electricity yesterday trickled back to homes and businesses throughout the region, officials defended the pace of power restoration, saying they are working as fast as they can. Field crews yesterday restored service to nearly 100,000 utility customers in Massachusetts, New Hampshire, and Maine. However, five days after the massive storm shrouded much of New England in ice, about 220,000 homes and businesses remained without power.

In Massachusetts, as of last evening, 61,000 customers remained without electricity. The most outages — more than 34,000 — remained in Worcester County, according to **National Grid**. Statewide outages peaked at 326,000 on Friday and affected nearly 1 million homes and businesses across New England.

Peter Judge, a spokesman for the Massachusetts Emergency Management Agency, said state officials and utility companies will study what they could have done better after they finish restoring power. He said 1,400 peo-

ple yesterday remained at 59 shelters in the state.

"This was an incredibly unique event," he said. "There are a lot of things to evaluate. We're not even halfway through this."

David Graves, a spokesman for National Grid, blamed the sluggish return of power on "unprecedented" devastation to the company's system of transmission towers, utility poles, and hundreds of miles of cable, much of it in remote areas inundated with downed trees.

"Our employees say this is the most destructive storm they've seen in their careers," Graves said.

Graves insisted the company — which still had 50,000 people without power last evening — did everything it could to prepare for the storm. With more than 1,000 work crews — many of them from around the country and Canada — they have enough help, he said.

The company had replaced many of its power lines, but he said newer lines would not have done better against falling trees. He also said the company has studied whether to put more lines underground. In most cases it's not worth the cost, he said, and it makes it harder to identify and fix problems.

"We understand the frustration people feel," Graves said. "We were prepared, but the system was severely and critically damaged."

In New Hampshire, where at least two people died as a result of the storm, 115,000 utility customers remained without service. On Friday, a 49-year-old Danville man died when his mobile home filled with carbon monoxide from a generator, and on Sunday, a 60-year-old Epping man died when the power to his oxygen supply failed. Scores of oth-

ers throughout the region have been sickened by exhaust from gas-powered generators and heaters.

"It is a laborious process," said Jim Van Dongen, a spokesman for New Hampshire's department of Homeland Security and Emergency Management. "In a lot of places there is so much damage to the electrical system that they actually have to rebuild it."

In Maine, an estimated 40,000 remained without power, according to Mark Belsere, director of operations for Maine's Emergency Management Agency. "It may be a couple of more days before everyone is back on," Belsere said.

Some school districts in New Hampshire and Massachusetts remained closed yesterday. Several districts said they would stay closed until the end of the week, while Barre, Lunenburg, and Townsend schools said they would not resume classes until Jan. 5.

Heidi Guarino, chief of staff for the state Department of Elementary and Secondary Education, said schools in Massachusetts are required to hold classes for a minimum of 180 days. "It's too early to talk about waivers. The commissioner feels very strongly that time in school is sacrosanct," Guarino said.

The storm also has stressed hotels, prompting some complaints about room rates.

During the weekend at the Homewood Suites by Hilton in Billerica, managers said they had to raise prices from \$99 to \$119, after initially lowering them for customers who lost power during the storm. With every room booked, and extended families squeezing into single rooms, there wasn't enough food for breakfast or dinner, and the cleaning staff was overwhelmed.

"We started really low, but



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when we realized there was such a huge demand, we had to increase the rates to slow the demand," said Dina Coventry, the hotel's director of sales, who added that the hotel has kept its higher weekday rates \$50 lower than usual.

After losing power early Friday at their four-bedroom home in Chelmsford, Joseph M. Kunze, his wife, and three young children spent their first night without electricity in a hotel. "That was very difficult with all the kids," said Kunze, 43, who runs a technology company.

Like many others in the region, Kunze and his family moved back into their cold, dark home. To get by, they get around with glow sticks, heat water on their gas-powered stove, and sleep together beneath lots of blankets and beside a gas fireplace in their living room.

"I've never experienced anything like this," Kunze said. "It shouldn't take this long. It makes me angry."

Brian Ballou and Andrew Ryan of the Globe staff and Globe correspondent Casey Ramsdell contributed to this story. David Abel can be reached at dabel@globe.com.

'It's really horrible — just hard to believe it could take this long. I can't tell you how frustrating this is.'

DORIS POINDEXER, WHOSE FAMILY HAS LIVED IN THREE HOTELS IN THE PAST FIVE DAYS

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The Boston Globe

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'For customers, we realize that hours can seem like days.'

DEBORAH DREW, spokeswoman for *National Grid*

Nature's gnarled morass yields little to utilities

Scope of ice damage, access problems hinder crews

By Brian Ballou
GLOBE STAFF

HUBBARDSTON — A caravan of bucket trucks rolled through the center of this rural community yesterday morning with a massive repair effort in front of them.

After a brief meeting on the shoulder of Route 68, crews of workers split up about a dozen trucks and headed for areas where tree limbs, shattered by last week's devastating ice storm, pulled down electrical lines or cracked poles.

In every wooded area throughout the region, cracked trees almost

► As electricity trickled back to homes, utility officials defended the pace of restoration. **B4.**

outnumbered untouched ones, and along every road, large piles of twisted branches had been placed to be picked up. Downed power lines were everywhere.

Yesterday crews restored electricity to about 520 more homes in Hubbardston, leaving about 980 still without power. Power had been restored to about 82 percent of the 325,000 homes and businesses in its eastern New England service area that lost it.

"This is probably one of the largest efforts we've put together," Deborah Drew, spokeswoman for National Grid said, referring to the massive repair effort in the central and western regions of the state.

Drew said that despite tracking
CREWS, Page B4

the storm before its arrival and prepackaging "storm kits" consisting of every item needed to get power lines up and running, National Grid officials were nevertheless taken back by the amount of damage the tempest caused.

"We drill two or three times a year for situations just like this, but we certainly can't predict exactly what's going to happen in a given weather event," Drew said. "The assessed damage was more voluminous than originally thought. There have been some delays, not by a tremendous amount, but by hours. For customers, we realize that hours can seem like days, so we're working around the clock."

Those delays, according to Drew, were mostly due to the tons of tree limbs that fell on roads, creating blockades that had to be cleared before the trucks could approach downed power lines. Other delays were the result of coordination with phone companies, which run smaller poles and lines along the same routes as electric companies.

As soon as the storm had cleared Friday, National Grid workers were out surveying the damage and clearing inaccessible roads, Drew said. As more reports of widespread damage came in, National Grid expanded its response effort, she said.

Stephen O'Brien, a road crew supervisor, called yesterday's effort in the Merrimack Valley region a "full court press."

National Grid, with help from the Public Service Enterprise Group utility from New Jersey and small subcontractors, put more than 120 workers and 37 bucket trucks along a 26-mile stretch that included Hubbardston, Westminster, and Gardner.

The crews worked along two "feeder lines," or main power lines. Those lines provide for "side taps" that run along smaller roads.

On New Westminster Road, four trucks stopped to begin repairs to a downed line. A new pole had already been erected to replace one snapped by a tree. As two men with goggles and chain saws worked to reduce the debris covering the lines on the shoulder of the road, two men were hoisted inside buckets to the top of the new pole. The workers slowly lifted the downed line with gloved hands.

About 2 miles away, a National Grid manager, Jon Gonynor, surveyed heavier damage. A power line that ran through a forest sustained heavy damage. "Our trucks can't get to that, so we're going to have to bring in special equipment," Gonynor said.



Page 1 of 3

The Boston Globe

Date: Wednesday, December 17, 2008
Location: BOSTON, MA
Circulation (DMA): 360,695 (7)
Type (Frequency): Newspaper (D)
Page: B1.B4
Keyword: National Grid

Standing over a twisted pile of power lines and tree limbs, Gonnor shook his head when asked how long it would take to repair such extensive damage.

"It'll take awhile," he said.

Stephen O'Brien, a supervisor, called the effort in the Merrimack Valley a 'full court press.'



SUZANNE KREITER/GLOBE STAFF

Workers from New Jersey, including Terry Lane, helped local crews repair downed wires in Hubbardston.

The Boston Globe

Date: Wednesday, December 17, 2008
Location: BOSTON, MA
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Keyword: National Grid



SUZANNE KREITER/GLOBE STAFF

Downed limbs and lines still cover many back roads near Hubbardston, including New Westminster Road.

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Article published Dec 18, 2008

Dec 18, 2008

Incoming storm will delay cleanup

Public safety becomes priority

By Lisa Eckelbecker TELEGRAM & GAZETTE STAFF
leckelbecker@telegram.com

Utility workers continued to restore power to homes across Central Massachusetts yesterday, but many customers could remain in the dark beyond tomorrow when expected snow and colder temperatures make the region's recovery more difficult.

About 40,000 Massachusetts customers did not have power yesterday, nearly a week after a devastating ice storm snapped trees, brought down power lines and plunged the region into a massive cleanup effort.

National Grid, the region's dominant electricity provider, reported that about 21,000 customers, mostly in Worcester County, remained without power at 5:30 p.m. yesterday. Freezing rain yesterday made work more difficult, and a forecast of snow tomorrow motivated the utility to strive to meet its estimate of restoring all power tomorrow, said David D. Graves, spokesman for National Grid.

"That has, I wouldn't say reinvigorated, (but) reminded us that it's critically important that we get all service restored on Friday," Mr. Graves said.

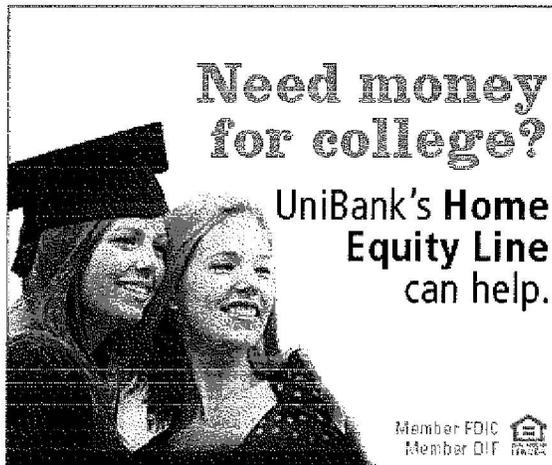
The state said 1,500 National Guardsmen continued to work in the region yesterday. Until Corp., the parent company of Fitchburg Gas and Electric, reported 131 crews working. National Grid reported about 1,000 crews were on the job, mostly in Central Massachusetts. Two or three people are generally on each crew.

Until Corp. reported it expects to restore primary circuits in Fitchburg today, in Townsend and Lunenburg tomorrow and in Ashby this weekend. The utility, which counted 10,176 customers in northern Worcester County without power at 5 p.m. yesterday, said the efforts were subject to the weather.

The National Weather Service yesterday issued a winter storm watch for southern New England starting tomorrow morning, stating that up to a foot of snow could fall during the day and evening hours, with heaviest snowfall during the afternoon and the largest accumulations south of the Massachusetts Turnpike. About six inches of snow could fall in other areas, and the temperature will drop, said meteorologist Hayden Frank.

"It's going to be cold. That's the main thing," Mr. Frank said. "Temperatures will probably fall into the lower 20s, upper teens when snow begins."

The new storm system could also change what some cleanup crews have been doing.



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"At that point, a lot of the folks who are doing a lot of the debris removal ... are the people who would be doing the snow removal," said Peter W. Judge, spokesman for the Massachusetts Emergency Management Agency.

Worcester City Manager Michael V. O'Brien said the city had been waiving inspections, paperwork and fees when possible to speed power restoration efforts and that National Grid expected to boost the number of crews working in Worcester above the 110 crews that labored in the city yesterday. Yet if snow falls tomorrow, he said, the city's workers will shift gears.

"We're going to have no choice but to prioritize, make our streets safe and passable in the face of significant snowfall," Mr. O'Brien said. "These are the same crews that are now focused on debris removal, but public safety is the priority. We will shift back to storm debris cleanup as soon as possible once we get this Friday storm under control."

Worcester residents who want to dispose of downed tree limbs and branches can bring them to the Ballard Street-Millbury Street disposal site. Residents of the Greendale and Burncoat areas, however, especially those with infested trees, should leave tree limbs on their property for now. The Massachusetts Asian Longhorned Beetle Cooperative will devise a plan to address those properties, according to the city.

Charter Communications Inc. said its efforts to repair cable television lines will continue as conditions permit, but snow would make it dangerous for crews.

Charter reported that customers whose cable drop lines from the street are down, those who did not get service once electricity returned and those who want to cancel a service appointment because their television service has returned, should contact Charter at CharterRecovery@chartercom.com or (888) 438-2427.

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The Boston Globe

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Power-restoration crews race with next storm Up to 36,000 still out, with heavy snow in forecast

By Jeannie M. Nuss
GLOBE CORRESPONDENT

Crews are hurrying to restore power to residents in Central and Western Massachusetts and New Hampshire, ahead of a heavy snowstorm expected to blanket New England tomorrow.

In Massachusetts, workers had restored electricity to 92 percent of the 294,000 homes that lost power after last Friday's ice storm, a **National Grid** spokesman said. The utility said it had restored electricity to nearly 99 percent of its customers in New Hampshire.

About 23,600 Massachusetts homes and businesses served by National Grid were still without power by last night, 20,732 of them in Worcester County, after a snowstorm early yesterday hampered working conditions, a utility official said. The Massachusetts Emergency Management Agency, including customers not served by National Grid, reported that 36,000 were without power last night.

"Crews are still out, still working," said spokesman David Graves of National Grid.

Public Service of New Hampshire reported last night it had restored power to more than 83 percent of the 322,000 homes affected by the storm. About 54,000 PSNH customers are still

without electricity.

Snowfall yesterday ranged from 1 inch in Boston to 3 inches in Lawrence, Greenfield, Ayer, and Nashua, according to the National Weather Service in Taunton. Snowfall in Worcester added 1.3 inches to the remaining ice there. The overnight dusting bogged down yesterday's morning commute, which authorities said was littered with numerous spin-outs and fender-benders.

Tomorrow's storm is expected to dump at least 6 inches of snow across Massachusetts, with highest accumulations south of the Massachusetts Turnpike and at least 3 inches across New Hampshire, National Weather Service meteorologist Rebecca Gould said.

"We're expecting a storm on Friday that is looking to be fairly significant," Gould said. "It looks very similar to the Dec. 13 storm we had last year."

The storm last year dumped 1 to 2 inches per hour, causing traffic headaches across New England, Gould said.

Snow is expected to begin falling between 8 a.m. and noon, starting in the Connecticut River Valley and spreading east, tapering off after 8 or 9 p.m., Gould said.

Graves said crews hope to

restore power to the remaining households by the time the snow starts tomorrow, but he could not predict how the snowfall might affect restoration efforts.

Peter Judge — spokesman for the Massachusetts Emergency Management Agency, which is coordinating the cleanup — said tomorrow's storm could cause trouble for restoration efforts.

"The response is certainly going to be impacted if we have a major storm on Friday, so that certainly is in the back of everyone's mind," Judge said.

Judge said about 1,500 people stayed in 57 shelters across the Commonwealth Tuesday night.

Mayor Konstantina Lukes of Worcester said tomorrow's snowfall could exacerbate the power problem. "It's a race against the weather," she said. "Mother Nature is just determining how efficient we can be."

Lukes said she was impressed with the efforts of linemen flocking to New England. She applauded the "gargantuan effort" and progress to restore electricity, but added: "We're just keeping our fingers crossed that we can deal with the remaining power outages. I'll probably know by Saturday how successful our prayers have been."



telegram.com

Friday, December 19, 2008

Homeowners warned about scams

Storm-weary need to be wary of con artists

By Scott J. Croteau TELEGRAM & GAZETTE STAFF
scroteau@telegram.com

As volunteers and workers from organizations across the region help at shelters, remove trees and work to restore power, there are those headed to recovering areas for nefarious reasons.

Scam artists claiming to work for National Grid or local light departments have been knocking on doors offering to restore power to homeowners for a couple of thousand dollars, authorities said.

The Federal Emergency Management Agency said scammers have also asked for cash, promising to get services delivered more quickly.

"There have been reports of scammers posing as officials from utilities or as government officials. These scammers ask for a payment in order to get power restored or speed along the delivery of assistance," FEMA said in a press release. "Legitimate officials will never request such payments."

In West Boylston, a man driving a blue mid-sized vehicle with out-of-state license plates has gone to homes claiming to work with that town's light department. He offers to restore power for \$2,500. Apparently, no one has fallen for the scheme at this point, West Boylston Police Chief Dennis W. Minnich said.

"There are possible scam artists out there and people who will take advantage of this," he said. "It makes a bad situation this much worse."

Anyone needing tree or electric work should use a credible company that is certified with the state. People concerned about the legitimacy of a company or person should call police, Chief Minnich said.

In Holden, authorities experienced scam artists offering the reconnection of electrical wires for \$1,500, Police Chief George R. Sherrill said. There were also reports of people in a tree removal truck — determined to be stolen out of Framingham — going door to door and offering services. Police are searching for the truck.

Chief Sherrill said price gouging is occurring in his town as well. Authorities are

trying to track down companies giving people high cost estimates for tree removal or electrical services. Town bylaws state solicitors have to register and receive a permit from the town. Chief Sherrill said he has denied permits for two people based on their backgrounds.

There have been reports of generators stolen out of Leicester and Fitchburg. Two were taken in Fitchburg and one in Leicester. Police are also tracking break-ins and keeping an eye on sections of their communities that are without power. Area police departments did not see a major spike in crime over the weekend, during the storm's aftermath.

Rutland Police Chief Joseph R. Baril Jr. said patrols are watching homes with generators and the department has a map of homes without power and where the residents are away.

Many residents in Rutland called police to notify authorities their homes would be vacant, the chief said.

Worcester Police Chief Gary J. Gemme said 13 reported break-ins occurred during the peak of the storm and its aftermath. In three of those break-ins, residents returned home to find they had been robbed.

Worcester has seen break-ins rising in the city before the storm and police will check to see if the recent break-ins are storm-related or on par with the levels the city normally experiences.

Leicester Police Chief James J. Hurley said a couple of businesses were broken into during the storm. A home was also broken into, targeted because it was vacant, the chief said.

"We've targeted (with patrols) the neighborhoods that had the power outages literally every day," Chief Hurley said. "The visibility has helped."

He also noted the National Guard has been out on the streets and the sight of National Guardsmen in an area works as a crime deterrent.

The ice storm might be a reason violent crime in Worcester was held in check over the weekend. Robberies and violent assaults didn't occur at the normal weekend pace, Chief Gemme said.

FEMA offered these tips to avoid being scammed:

- Request identification from anyone who visits your home. Actual officials will be able to provide their name and identification.
- Do not provide credit card or banking information to anyone who comes to your

home unannounced.

- if you have a concern about a person claiming to be a contractor, contact your state attorney general's office.

Print Date: 12/15/2020 4:30 PM
 User: [redacted]
 Job #: [redacted]
 Title: [redacted]
 Date: [redacted]
 Time: [redacted]

Stay safe while we stay on the job.

National Grid continues to work 24/7 to restore power to the remaining homes and businesses hit by the storm. We've mobilized hundreds of crews supported by more than 1,000 additional support staff to restore power to every customer. We've even called in crews from neighboring states to support this effort. You've been understanding as we do our job, and we appreciate it.

Your safety is our first priority. As the restoration efforts continue we urge you to stay safe and be aware of any dangerous situations. Please review these important safety tips with your family:

Never touch downed power lines or anything touching fallen lines. They could be live wires — and deadly. If you see any problems and think National Grid is not aware of them, please call our **Outage Emergency Line at 1-800-465-1212.**

If you're using a generator, make sure the main breaker in your electric panel box is in the "OFF" position. If you have a fuse box, pull out the main disconnect. Remember, exhaust from generators can be deadly, so it's NEVER safe to operate a generator indoors.

If you are still without power, thank you for your patience. We are doing everything we can to restore your power as quickly and safely as possible.

For more information visit
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Job #	NGD1-08-13887	Version #	2	Document Name	NGD1-08-13887-195.rvt	Date/Time	12/15/2020 4:30 PM
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Mechanical Scale	100%	Production Manager	000000				
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Thanks.

In the wake of one of the worst ice storms in more than a decade, National Grid would like to thank our customers for their patience while we restored power. **We fully understand that even a few hours without power is inconvenient, let alone a few days. And we empathize with those customers who endured a more lengthy disruption to their daily routine.** That's why we dispatched more than 1,000 crews and mobilized more than 1,700 support personnel to respond to the 325,000 customers that were impacted by the storm. As a result we have repaired nearly 90 miles of power lines that were downed by the heavy ice and winds. We'd also like to thank all the state and local agencies and officials, contractors and out-of-state utility crews for their assistance. As an additional show of support to all the communities that were affected, we donated \$125,000 to local Red Cross chapters and encourage anyone else that would like to pitch in to contact their local agency. **You can never count on the weather, but you can always count on the power of action.**

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December 2008 Ice Storm Response Newspaper Ads



Last Updated: 02/19/2009

MEDIA	DECEMBER					TOTAL # OF WEEKS / INSERTIONS	TOTAL CAMPAIGN
	1	8	15	22	29		
NEWSPAPER (Full Page)							
MASSACHUSETTS/NEW HAMPSHIRE							
<i>Telegram & Gazette (Worcester)</i>				12/14 & 12/16	12/21	3x	
<i>Sentinel & Enterprise</i>			12/16		12/21	2x	
<i>Manchester Union Leader</i>				12/22		1x	
<i>Lowell Sun</i>			12/16		12/21	2x	
<i>Lawrence Eagle Tribune</i>			12/16		12/21	2x	
<i>Valley News</i>					12/22	1x	
TOTAL MA/NH	549,007						
ALBANY, SCHENECTADY, TROY							
<i>Albany Times Union</i>			12/15 & 12/16	12/21 & 12/22		4x	
<i>Daily Gazette (Schenectady)</i>			12/16		12/21	2x	
<i>Troy Record</i>					12/21	1x	
TOTAL ALBANY, SCHENECTADY, TROY	479,828						
TOTAL PLAN	1,028,835						18x
TOTAL PLAN CPM							

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Strategy Statement

The intent of this written strategy document is to outline all the procedures used to manage the distribution circuit pruning program and the distribution hazard tree program currently in practice. These are reliability-focused strategies designed to meet both state regulatory targets and support first quartile reliability performance. In addition, cycle pruning provides a measure of public safety by minimizing the potential for public contact with energized conductors through tree climbing as well as the potential for electrically caused fire in trees.

This work is expected to reduce the National Grid upstate New York SAIFI by 0.023 annually, Massachusetts by 0.057, Rhode Island by 0.028 and New Hampshire by 0.226 assuming the same level of funding each year. This improvement is based on a reduction in the number and magnitude of vegetation related interruptions by establishing, maintaining, or in some cases, reducing the base pruning cycle length for all distribution circuits. In addition, in the case of the distribution hazard tree program, the improvement is based on a reduction in the number and magnitude of vegetation related interruptions on the sections of distribution circuits where this is employed.

These two programs (circuit pruning and hazard tree removal) together under the title of Incremental Vegetation Management are one of the four major strategies designed to improve National Grid’s reliability performance as measured by state regulatory service quality targets. The overall goal is to meet state regulatory targets by 2008. In addition to the regulatory targets, compliance with this strategy is demonstrated by keeping all circuits on the appropriate base cycle schedule as described in section 2.2.

The main benefits/risks are safety, reliability, regulatory and efficiency.

Amendments Record

Issue	Date	Summary of Changes / Reasons	Author(s)	Approved By (Inc. Job Title)
1	06/04/08	Initial Issue	Craig M. Allen Vegetation Strategy	John Pettigrew Executive Vice President, Electric Distribution Operations

Strategy Justification

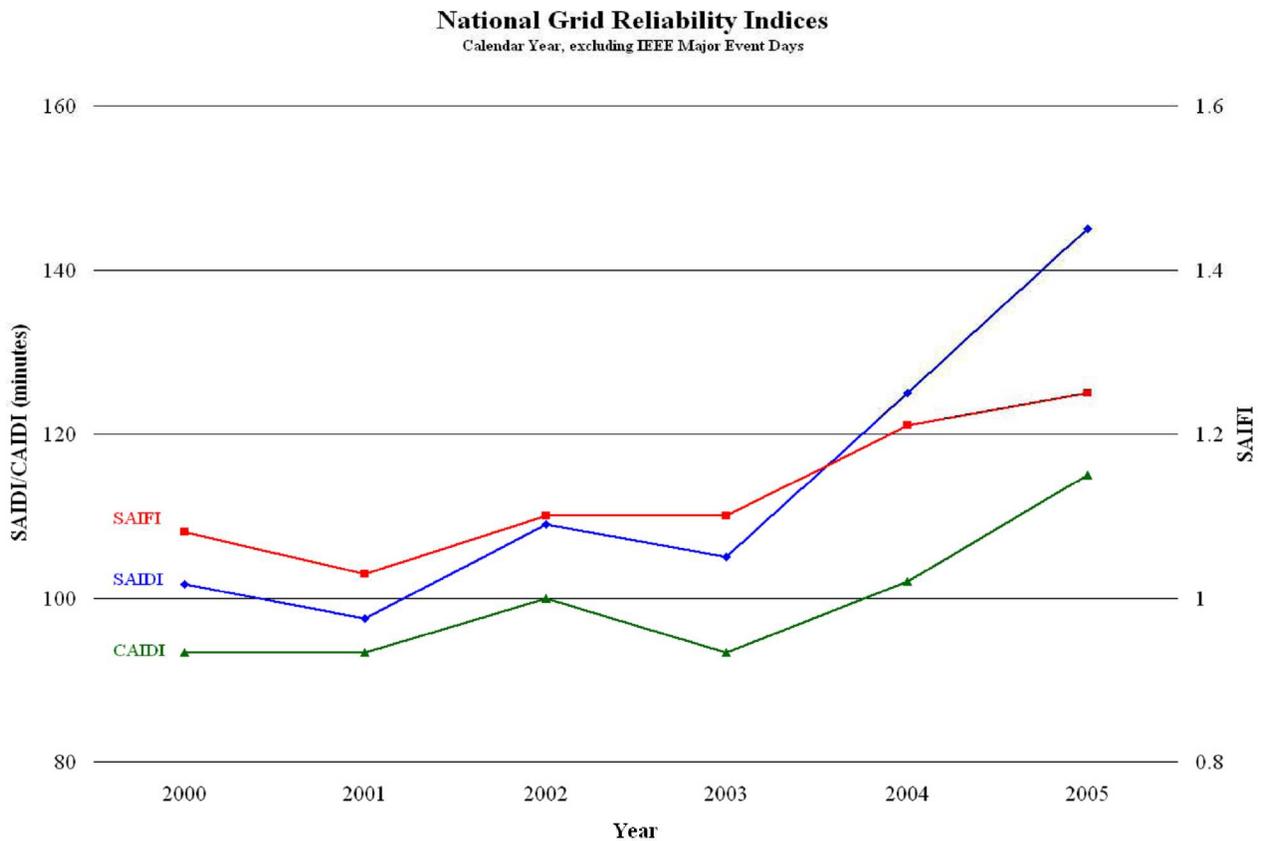
1.0 Purpose and Scope

This strategy describes a Distribution Circuit Pruning program along with an On-cycle and Off-cycle Hazard Tree removal program. The main purpose of these programs is to create and maintain clearance between energized distribution conductors and vegetation, primarily tree limbs. In addition, the hazard tree program is intended to minimize the frequency and damaging affect of large tree and large limb failures from along side and above the company’s overhead primary distribution assets. This is a reliability-focused strategy designed to meet both state regulatory targets and support first quartile reliability performance. In addition, the circuit pruning program provides a measure of public safety.

2.0 Strategy Description

2.1 Background

Trees, animals, lightning and deteriorated equipment are the major drivers in National Grid’s reliability performance. Since approximately 2001, the distribution reliability performance in these areas has been steadily worsening. Along with this deteriorating reliability performance, the company has been assessed steadily increasing financial penalties from state regulators due to our poor performance against the regulatory service quality targets.



The Vegetation Management program is one of the four main components of The Reliability Enhancement Program (REP).

The goal of the REP is to meet state regulatory service quality targets by 2008 and be first quartile by 2011 (IEEE North American Survey 2004).

2.2 Detailed Description and Implementation Process

Distribution Circuit Pruning: A specific base pruning cycle length has been set for all circuits by state based on the general length of the growing season as well as the growth characteristics of the predominant tree species in each area. It is important to note that stable and consistent circuit pruning program provides not only a measure of reliability improvement but also is an important aspect for maintaining public safety regarding climbable trees and tree/wire contact risks like fire. In addition, consistent circuit pruning improves line crew accessibility therefore improving restoration and maintenance efficiencies. Finally, timely circuit pruning will also enhance the accuracy and efficiency of the line inspection process.

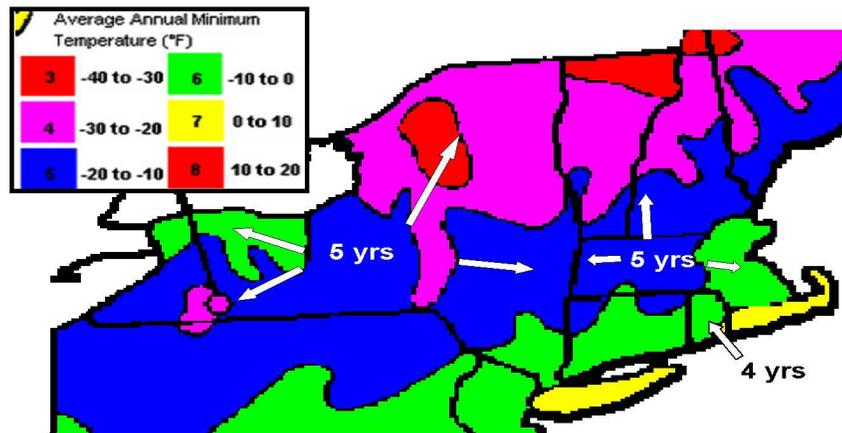
The basis for the program is the schedule or length of time determined to be optimal between pruning events on a circuit. This schedule or cycle is determined based on average growing season, the growth rates for the areas most common tree species and the clearance to be created at each pruning event. This cycle length becomes the Base Cycle Length for an area, in this case by state. It is feasible that due to variability in geographic areas, population density, public acceptance of pruning and species diversity that it may be prudent in the future to have circuits of varied cycle lengths within one state. However the average cycle length in that state would still match the base cycle length stated below. As an example, in NY there may be a population of circuits on a four year cycle, some on a five year cycle and some on a six year cycle.

Listed below are the revised base cycle lengths employed for each of the National Grid operating states.

<u>State:</u>	<u>Base Cycle Length:</u>
Massachusetts	5 years
New Hampshire	5 years
New York (Upstate)	5 years
Rhode Island	4 years

The diagram below shows Hardiness Zones delineated by the U.S. Agricultural and Markets Department. These Hardiness Zones relate directly to growing season length which forms the basis for creating the new base cycle lengths for distribution pruning as overlain on the Hardiness Zone map.

Tree Hardiness Zones – Surrogate for Growing Season vs Pruning Cycle Length



Circuit pruning is not a new program at National Grid. However the circuit pruning program has been enhanced in three ways. First, in the three New England states, all pruning was converted to a circuit-based approach rather than town or grid based. Secondly, cycle lengths were shortened to be more comparable to average growing seasons in each area. Thirdly, enhanced pruning specifications were introduced to create additional clearance, especially overhead, and to remove additional interruption hazards at the time of the pruning operation. The following paragraphs discuss each of these changes in more detail.

First of all, in the New England states the circuit pruning was being performed on a township basis. When a town came up on the schedule, every distribution line segment in that town was pruned with no regard to the actual distribution circuit configuration. This approach offered little possibility for improving vegetation related reliability performance except possibly on smaller circuits that were contained all within one town. Now all circuit pruning in all four states is performed on a circuit basis, beginning at the first span outside the station fence and continuing to the last span of primary and secondary at the end of the circuit.

Secondly, in all four states the distribution pruning program has been subject to variable levels of funding. In the New England states there had been some fairly lean budget years where the amount of funding for mileage pruning could have only produced the equivalent of an eight to nine year cycle. NY had been performing circuit based pruning on a consistent cycle for many years however experimented with lengthening the cycle as part of a major cost-cutting exercise back in the 1998/99 time frame. At that time the average circuit pruning cycle was lengthened to about six and one half years with a few rural circuits out to eight years.

The third REP enhancement to the circuit pruning program was the improvement around actual clearance dimensions and work scope or specifications. Overhead clearances requirements in the New England states have increased from six feet to ten feet overhead on maintained yard areas and up to fifteen feet of overhead clearance on un-maintained properties to equal the New York (upstate) clearances. Also, additional work scope requirements have been added to remove all

overhead dead, dying and structurally weakened limbs at the time of pruning to minimize potential interruptions from falling limbs. The actual circuit pruning specifications are included in the appendix of this strategy paper.

Circuit Pruning - Annual Circuit Selection

In Upstate NY where a cycle pruning program has existed long enough to re-cycle six times, the annual circuit pruning work plan is developed by utilizing each circuit's last pruning date plus the base cycle length for that state or area. For example, in Upstate NY where every distribution circuit has been maintained at least six times through a maintenance cycle, a circuit pruned in fiscal year 2004 be scheduled again for pruning in FY09 as NY is currently funded at a five year cycle level. In addition to scheduling each circuit by last prune date there is also an objective to bring all the circuits out of a station together for maintenance pruning on the same year. This would alleviate the problem caused by load rebalancing between circuits out of one station and the potential for portions of a circuit to be missed by the circuit pruning operation as one section of a feeder may get shifted to another feeder from the same station that has just been pruned the previous year. These shifted sections can potentially go well beyond their base maintenance cycle length in the worst case scenario before being pruned however this rarely occurs due to the field inspection work performed by the field arborists as well as National Grid's distribution inspection program.

In the three New England states where the cycle pruning program is still immature and one complete cycle has not yet been completed, the circuits are scheduled in a different manner. The annual schedule for circuit pruning is developed by using the Tree Model to rank all circuits except for those pruned in the past three years as these areas are currently beginning the fourth year of a five year cycle in the case of Massachusetts and New Hampshire, and the third year of a four year cycle in Rhode Island. This way the remaining two year's worth of un-pruned circuits are prioritized by the Tree Model so that the pruning dollars are spent in the best manner. This method has been used each year since the start of the current cycle program in the New England states. For FY10, the remaining circuits not pruned in the past four years will be ranked by the Tree Model just to create an order to schedule the year's work but in fact, all those remaining circuits will be scheduled for pruning work that year.

Using this current strategy, beginning in FY11 all four states will have completed at least one full cycle and will begin using the NY scheduling process to determine the annual cycle pruning work plan.

From time to time a district may have too many or too few miles to prune than budgeted due to past scheduling issues or circuit reconfigurations. Where circuits need to be added or removed to create a balanced annual schedule the circuit ranking from the Tree Model is utilized. The circuit rankings are utilized to guide field assessment audits to determine which circuits may need to be added or removed to balance the annual schedule while maintaining a reasonable level of tree-related reliability. The field assessment is a necessary step to ensure that actual vegetation grow-in conditions are acceptable when a circuit is being pushed out one more year. The same process is utilized for circuits that would ordinarily not be ready for pruning based on their base cycle length however the Tree Model results show poor reliability performance and the

subsequent field assessment determines that there are vegetation grow-in conditions that will make it risky to allow the circuit to go to full cycle.

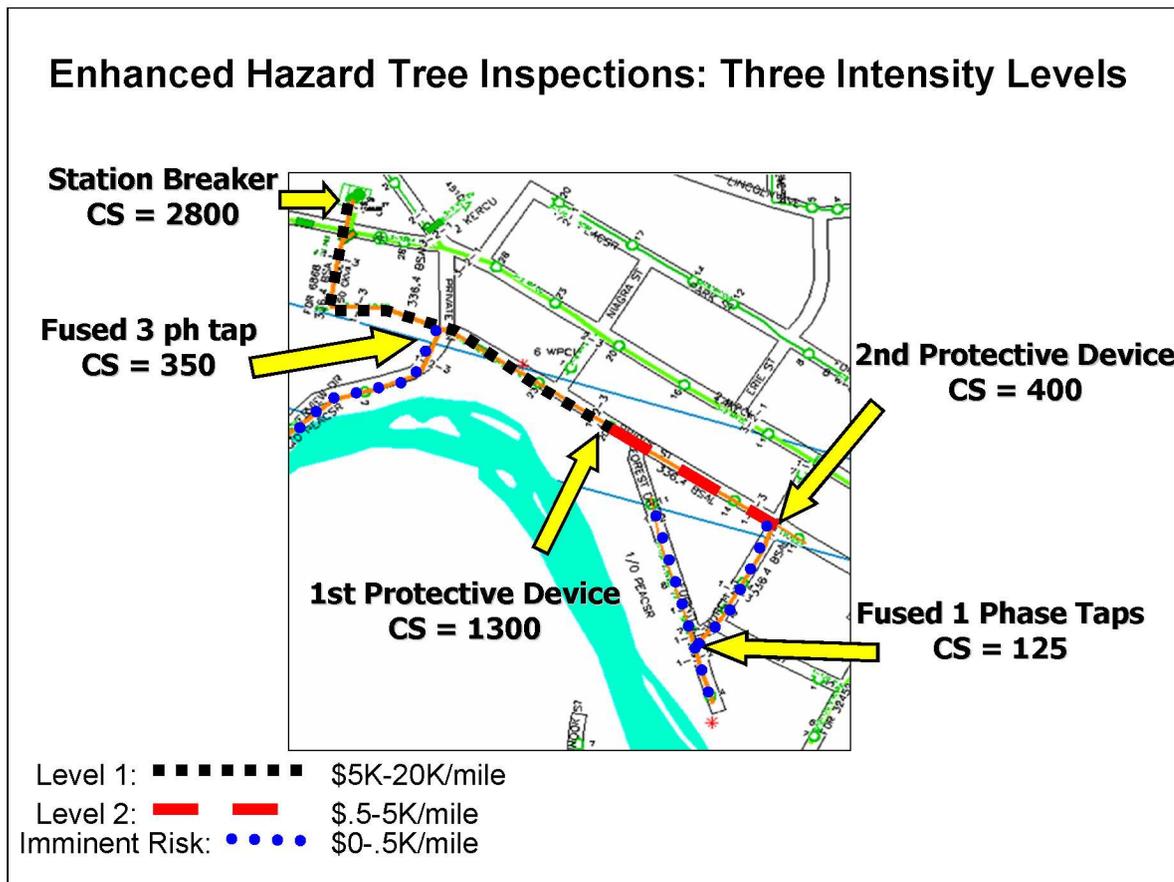
Enhanced Hazard Tree Mitigation: Full tree and large limb failures are responsible for a significant portion of National Grid's interruptions. Research done at Niagara Mohawk prior to the merger shows that over 75% of tree interruptions came from outside the pruning clearance zone. Pruning specifications have been enhanced since that study was done to include additional overhead clearances and the removal of dead, dying or structurally weakened overhead branches however the point is that the vast majority of tree interruptions still come from trees and limbs failing or breaking and falling onto the overhead conductors, not from grow-in conditions. Based on interruption data classified in the SIR system for NY or in the IDS system for NE, tree growth makes up only 4% of the interruptions in National Grid. Compare that to 57% of the Tree SAIFI that is caused by Tree Fell interruptions. This data triggered the development of a hazard tree program in New York State back in 1999. Post project data from the early NY hazard tree projects showed Tree SAIFI improvements of 67% on circuits where hazard trees had been completed. This early experience and along with benchmark information for other utilities that showed similar results for hazard tree programs at other utilities and the fact that hazard tree programs were becoming much more common place in the utility industry, spawned the current Enhanced Hazard Tree Mitigation (EHTM) Program used in all four states today.

The hazard tree program has two forms – either on-cycle or off-cycle referring to whether the circuit being worked is also undergoing circuit pruning the same year or not.

For on-cycle enhanced hazard trees a specific amount of money is budgeted each year for the three phase portions of all the circuits scheduled for maintenance pruning. The budget amounts are based on historic costs/mile experience as well as tree density per mile for each state. The budgeted amounts based on FY09 costs are as follows:

NH - \$5000 per three phase mile
RI - \$4000 per three phase mile
MA - \$4000 per three phase mile
NY - \$2500 per three phase mile

These dollars are then applied across the annual scheduled feeders based on the ranking from the Tree Model discussed in the next section of this strategy. Besides prioritizing the circuits each circuit is then partitioned into SAIFI risk segments based on the number of customers served and location of each protection device along the circuit. The hazard tree inspection work is broken down into three intensity levels corresponding to the SAIFI risk segments. The first or highest level of inspection intensity is employed all on circuit segments serving over 1500 customers. The second level of inspection is employed for circuit segments serving from 500 to 1500 customers. Finally the third level of inspection is used for segments serving less than 500 customers. The diagram below depicts the different intensity levels and the approximate amount of hazard tree spending expected to occur along each level.



After setting these hazard tree inspection levels, Vegetation Strategy reviews five years worth of tree interruption location data to locate any areas on the circuit outside of levels 1 and 2 that may show enough evidence of past poor performance to have the hazard tree inspection level elevated for those specific sections. This practice will catch any small pockets of poor performance were only a small number of customers may be served but the frequency of the tree outages is making the overall effect of these outages something that deserves more attention.

Off-cycle EHTM circuits are identified in one of three ways.

- 1) Any circuit that was identified as a poor performer using that state regulator’s formula for such and so has been identified and field checked and determined to need hazard tree work to improve the reliability performance.
- 2) Any circuit, whose Tree Model ranking is below an annually determined standard based on fund levels and is not scheduled for circuit pruning based on its base cycle and field verification of the current growth conditions.
- 3) Any circuit that was identified through the Problem Identification Worksheet process and has been field checked and determined to need hazard tree work to improve the reliability performance.

Once funding is approved for the off-cycle work the same SAIFI risk segmentation approach is utilized as described above.

The enhanced hazard tree specification is included in the appendix of this document.

2.3 Tree Ranking Model

The Tree Ranking Model extracts data from the reliability source systems related specifically to tree caused interruptions. Additionally, regional IEEE 1366 Major Event Days and supply and substation related events are excluded from the analysis. This reliability data is combined with feeder asset data to create a framework to assess the performance of the feeder and determine the potential for reliability improvement through the Vegetation Management Programs.

The filtering criteria for inclusion in the model are:

- Customers Served > 0
- Number of interruption events in last three years > 1
- Total Customer Minutes Interrupted (CMI) > 500

The filters are designed to exclude only the obvious feeders which should not be selected.

A brief description of the model ranking process follows:

The Tree Model analyzes the last three calendar year interruption events related to tree related interruptions and combines this information with customer served and overhead feeder mileage data to calculate a combined ranking of all the feeders across New England/New York that meet the model filtering criteria (described above).

Four separate rankings are calculated for each feeder. A ranking of 1 in each metric represents the most desirable feeder:

- Customers Served
Ranked highest to lowest customers served
Based on the last calendar year's customers served (not a historic multi-year average)
Used to model the future value of the avoided interruption
- CMI/Event
Ranked highest to lowest CMI per event
Based on the last three years of interruption events
Used to model the historic severity of the interruption events
- Events/Mile
Ranked highest to lowest events per mile of overhead exposure
Based on the three year average interruption events and the current year's miles of overhead exposure
Used to model the historic density of the interruption events

- Dollars/Change in Customer Minutes Interrupted ($\$/\Delta\text{CMI}$)
Ranked lowest to highest $\$/\text{CMI}$
Based on the three year average ΔCMI assuming a fixed improvement percentage and a fixed cost per mile to mitigate the interruptions
The lower the $\$/\Delta\text{CMI}$, the more cost effective the mitigation
- The above four ranks are combined (and sorted low to high) as follows:
- Overall Rank = Customer Served Rank + CMI/Event Rank + Events/Mile Rank + $\$/\text{CMI}$ Rank

Feeders are initially selected for each company and district or region of National Grid based on the budgets established in the cycle set for each state. These circuits are field reviewed by the local arborist to determine actual growth conditions in the field and may be adjusted based on their findings. A review is also performed to ensure that work is done in both urban and rural areas. Feeders are reviewed not only across all of National Grid, but also on a State by State basis. Recent significant changes or new construction plans on a circuit are typical reasons for making adjustments in the work plan.

The Tree Model is also used to set the priorities for selecting circuits to include in the Enhanced Hazard Tree Mitigation Program as discussed in that section of this Strategy document. EHTM circuits are selected and ordered by Tree Model Rank.

3.0 Benefits

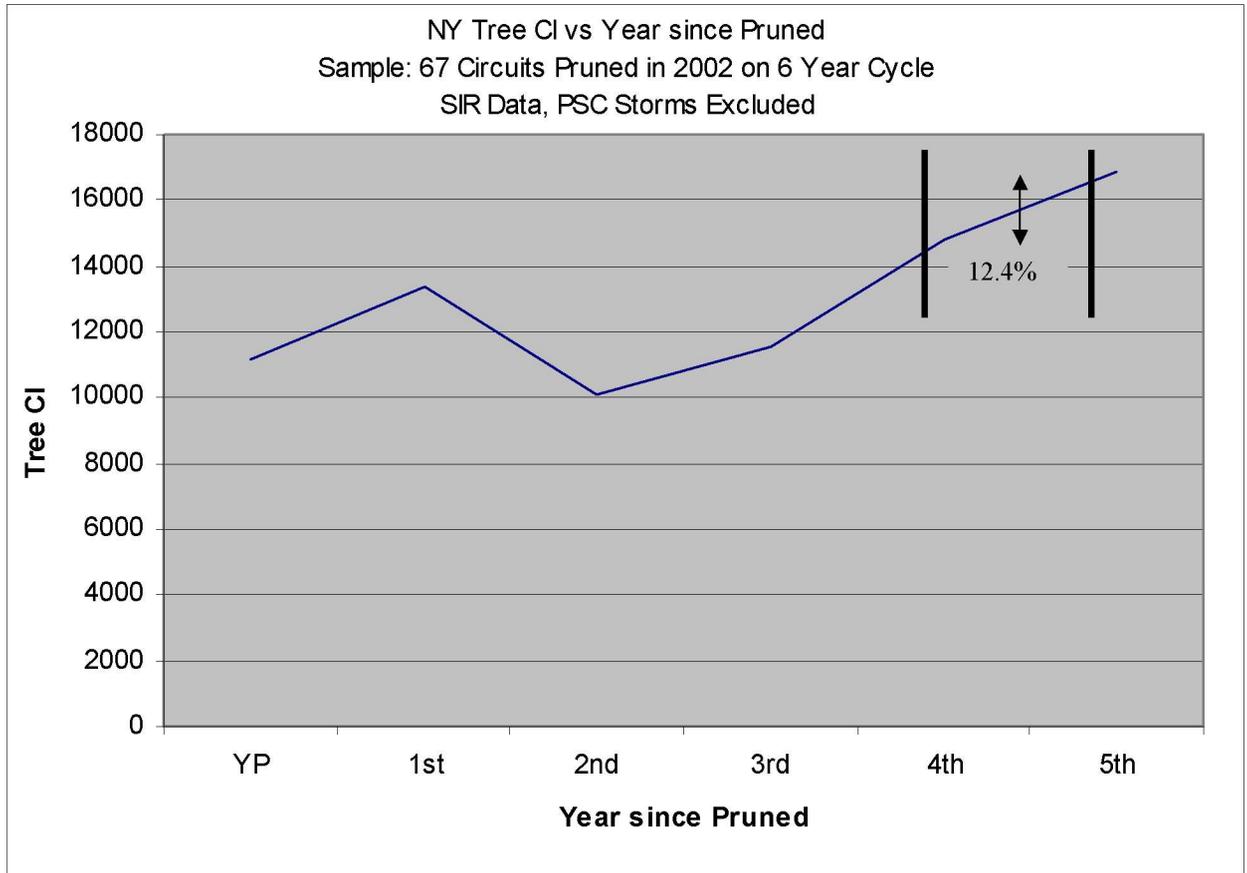
The principal benefits of the Cycle Pruning and Enhanced Hazard Trees are safety, reliability, regulatory and efficiency.

3.1 Safety & Environmental

Cycle pruning or keeping circuits on a consistent cycle pruning schedule will minimize the public safety risk presented when a tree makes contact with energized conductors through growth. When trees are allowed to grow into energized conductors there is the risk of electrocution through direct contact in a climbable tree or indirect contact through the tree itself. In addition, although not as serious in this climate, is the risk of fire in the tree or on the ground produced by electrical arcing through the vegetation when allowed to grow into and engulf the energized conductors. This strategy will minimize the potential for injury, property damage and liability regarding these identified risks.

3.2 Reliability

This cycle pruning work is expected to reduce the five-year average National Grid USA SAIFI by .0035 each year up to FY11. From that point on, cycle pruning will simply act to stabilize tree reliability performance while also providing a measure of public safety and efficiency for line and inspection crews. This annual improvement is based on the establishment of a pruning cycle in Massachusetts, Rhode Island and New Hampshire along with the reduction in the existing pruning cycle length in New York from 6 to 5 years as demonstrated in the graph below.



New England enhanced hazard tree projects have provided, on average, a 52% improvement in circuit tree SAIFI where performed. However, in NY where tree densities are less than half of New England tree densities, the average circuit tree SAIFI improvement is down to 24%. On a total annual basis, hazard tree work completed in Fiscal Year 2007 is expected to provide a SAIFI improvement in NY of 0.006, in Massachusetts of 0.018, in Rhode Island of 0.007 and in New Hampshire of 0.05.

3.3 Regulatory

This strategy is designed to improve National Grid’s reliability performance as measured by state regulatory service quality targets. The overall goal is to meet state regulatory targets by 2008. Meeting our state regulatory service quality standards will eliminate financial penalties and improve our relationship with the regulators.

3.4 Customer

While this is not a customer focused strategy, customers on the feeders in the program will experience a significant reliability improvement. However, it should be recognized that there is a significant portion of the customer population that is often displeased with the pruning of their trees. Several public education programs are in place and will continue to be utilized.

3.5 Efficiency

Cycle pruning on an optimal schedule provides three measures of efficiency for National Grid.

First, studies done on optimal pruning cycles and the timing or deferment of pruning show a significant increase in cost in the first year past the optimum cycle length. One study shows that when tree growth actually grows through phases of overhead primary that the increased time required to safely prune and remove branches from around the energized conductors can raise the costs per mile by as much as 21%. By keeping cycle lengths and funding consistent, that parameter of the cost per mile for pruning will remain favorable for National Grid.

Secondly, the clearances created by the pruning program provide improved access to the overhead distribution assets for our maintenance crews for both routine day-to-day work as well as storm restoration work.

Lastly, the clearances created by the pruning program provide optimal visibility for our inspection crews allowing them to clearly see all features of the distribution assets which should improve overall inspection value as well as move through their circuit inspections in a timely manner.

4.0 **Estimated Costs**

Approximately 11,200 miles of overhead distribution must be pruned each year in order to stay on our prescribed cycle lengths by state. The program must continue into perpetuity. The average cost for circuit pruning across all four states is approximately \$3400 per mile, with 11,420 miles to do each year the total cost of cycle pruning is approximately \$38.8 million per year.

On-cycle enhanced hazard tree costs are budgeted based on the average number of three phase miles in a single year of pruning multiplied by the hazard tree cost per three phase mile as shown in Section 3.0. On average, 4500 miles of three-phase are incorporated into the on-cycle hazard tree program for a total cost of \$11.6 million per year. Off-cycle hazard tree work is budgeted based on historic need at approximately \$4.7 million per year.

5.0 Risk Assessment

The principal risks of the Cycle Pruning and Enhanced Hazard Tree Program are safety, reliability and regulatory.

5.1 Safety & Environmental

This strategy reduces the risk of public injury, property damage and liability risks as described in the benefit section of this strategy.

5.2 Reliability

Based on Reliability data the risk of tree related interruptions from grow-in conditions are significantly low (less than 10%) when all circuits are kept on their appropriate pruning schedule based on growing season and species composition. Cycle pruning should not be considered for any substantial increase in reliability performance once a full cycle has been implemented due to the fact that the vegetation surrounding the overhead conductors continues to grow. Each year only 20% of the overhead primary population is being pruned while growth is occurring on the other 80%. It is not a one time strategy but instead a continuing process. On the other hand, hazard tree failure constitutes more than 50% of our tree interruptions and as much as 95% when limb failures are included.

5.3 Regulatory

Maintaining a favorable working relationship with state regulators is key to the future success of National Grid. Continued poor performance against state regulatory service quality standards puts this relationship in jeopardy and results in financial penalties.

5.4 Customer

Continued poor reliability performance will be result in negative customer satisfaction and increased complaints to state regulators. A significant proportion of the population is often displeased by the appearance of pruned trees along municipal roadsides. In fact, in New England townships where tree work is governed by the Town Tree Warden there may be restrictions applied to National Grid's clearance requirements.

5.5 Efficiency

Efficiency losses will develop if vegetation is allowed to interfere with the overhead distribution assets as working around "grown-in" conditions will greatly slow routine line maintenance and storm restoration as well as deter accurate and efficient line inspections.

6.0 Data Requirements

The data necessary to manage the Cycle Pruning Strategy is currently available and a set of models has been developed to support the strategy. The main areas open for improvement are schedule and cost tracking for better reliability performance tracking of feeders after work has been completed.

6.1 Existing/Interim:

Excel – Existing Cycle Pruning Schedule data
Smallworld/ArcSDE – Feeder asset data
PowerOn/IDS/SIR – Feeder reliability data

6.2 Proposed:

An improved database application for tracking cycle pruning schedules, hazard tree completions, vendors, and costs using Access or Oracle which can be distributed over the network for update and reference by all Vegetation personnel as well as referenced by Reliability Engineering. In addition, provide the ability to analyze the vegetation management data as well as reliability performance data in a geospatial format.

6.3 Comments:

Improved data quality in both feeder asset and reliability areas will support the refinement of the modeling process.

7.0 Appendices

- 7.1 NY Pruning Specification
- 7.2 NE Pruning Specification
- 7.3 Enhanced Hazard Tree Specification

MA_Prune_EHTM_History

CO_DIST_FDR	Company	District	Substation	Feeder	Effectiv Town	OH_MILES	FY_Cycle_Prune	FY_EHTM
05_01_10J323	05	01	RENA STREET 10	10J323	5 KV WORCESTER	1.019	2008	
05_01_10J366	05	01	RENA STREET 10	10J366	5 KV WORCESTER	1.368	2009	
05_01_10J383	05	01	RENA STREET 10	10J383	5 KV WORCESTER	3.463	2010	
05_01_11J314	05	01	FARADAY STREET 11	11J314	5 KV WORCESTER	0.738	2008	
05_01_11J325	05	01	FARADAY STREET 11	11J325	5 KV WORCESTER	0.159	2010	
05_01_11J330	05	01	FARADAY STREET 11	11J330	5 KV WORCESTER	0.5	2009	
05_01_11J331	05	01	FARADAY STREET 11	11J331	5 KV WORCESTER	0.477	2009	
05_01_11J332	05	01	FARADAY STREET 11	11J332	5 KV WORCESTER	0.561	2008	
05_01_11J333	05	01	FARADAY STREET 11	11J333	5 KV WORCESTER	0.014	2010	
05_01_11J334	05	01	FARADAY STREET 11	11J334	5 KV WORCESTER	0.931	2008	
05_01_11J346	05	01	FARADAY STREET 11	11J346	5 KV WORCESTER	1.116	2009	
05_01_11J347	05	01	FARADAY STREET 11	11J347	5 KV WORCESTER	0.961	2008	
05_01_11J351	05	01	FARADAY STREET 11	11J351	5 KV WORCESTER	1.532	2008	
05_01_11J354	05	01	FARADAY STREET 11	11J354	5 KV WORCESTER	1.702	2008	
05_01_11J357	05	01	FARADAY STREET 11	11J357	5 KV WORCESTER	0.226	2010	
05_01_12J376	05	01	MILLBROOK STREET 12	12J376	5 KV WORCESTER	0.658	2008	
05_01_12J377	05	01	MILLBROOK STREET 12	12J377	5 KV WORCESTER	0.478	2010	
05_01_12J378	05	01	MILLBROOK STREET 12	12J378	5 KV WORCESTER	2.411	2009	
05_01_12J391	05	01	MILLBROOK STREET 12	12J391	5 KV WORCESTER	0.181	2010	
05_01_13J350	05	01	BROOKS STREET 13	13J350	5 KV WORCESTER	1.441	2010	
05_01_13J358	05	01	BROOKS STREET 13	13J358	5 KV WORCESTER	2.842	2010	
05_01_14J367	05	01	SQUANTUM STREET 14	14J367	5 KV WORCESTER	2.676	2010	
05_01_14J368	05	01	SQUANTUM STREET 14	14J368	5 KV WORCESTER	2.146	2010	
05_01_15J392	05	01	LINCOLN PLAZA 15	15J392	5 KV WORCESTER	4.96	2007	
05_01_16J1	05	01	SALISBURY ST 16	16J1	5 KV WORCESTER	1.103	2010	
05_01_16J2	05	01	SALISBURY ST 16	16J2	5 KV WORCESTER	1.408	2008	
05_01_18J394	05	01	MARION AVE	18J394	5 KV WORCESTER	1.043	2009	
05_01_1J362	05	01	TATNUCK 1	1J362	5 KV WORCESTER	0.39	2010	
05_01_1J363	05	01	TATNUCK 1	1J363	5 KV WORCESTER	2.488	2009	
05_01_1J369	05	01	TATNUCK 1	1J369	5 KV WORCESTER	2.034	2009	
05_01_1J370	05	01	TATNUCK 1	1J370	5 KV WORCESTER	2.741	2010	
05_01_1J390	05	01	TATNUCK 1	1J390	5 KV WORCESTER	2.133	2010	
05_01_201W1	05	01	AYER 201	201W1	15 KV AYER	15.485	2010	
05_01_201W2	05	01	AYER 201	201W2	15 KV HARVARD	77.356	2006	
05_01_201W3	05	01	AYER 201	201W3	15 KV AYER	11.449	2010	
05_01_201W4	05	01	AYER 201	201W4	15 KV AYER	5.924	2010	
05_01_207W1	05	01	LITCHFIELD ST 207	207W1	15 KV LEOMINSTER	9.556	2008	
05_01_207W2	05	01	LITCHFIELD ST 207	207W2	15 KV LEOMINSTER	26.445	2004	2008
05_01_207W3	05	01	LITCHFIELD ST 207	207W3	15 KV LEOMINSTER	11.765	2008	
05_01_207W4	05	01	LITCHFIELD ST 207	207W4	15 KV LEOMINSTER	7.471	2007	
05_01_207W6	05	01	LITCHFIELD ST 207	207W6	15 KV LEOMINSTER	21.26	2008	
05_01_210L1	05	01	DUNSTABLE 210	210L1	15 KV DUNSTABLE	38.375	2005	
05_01_216W1	05	01	FITCH ROAD 216	216W1	15 KV CLINTON	9.483	2005	
05_01_216W2	05	01	FITCH ROAD 216	216W2	15 KV CLINTON	9.333	2008	
05_01_216W3	05	01	FITCH ROAD 216	216W3	15 KV CLINTON	8.455	2008	

MA_Prune_EHTM_History

05_01_216W4	05	01	FITCH ROAD 216	216W4	15 KV LANCASTER	13.16	2006
05_01_216W5	05	01	FITCH ROAD 216	216W5	15 KV CLINTON	15.566	2006
05_01_219W1	05	01	PROSPECT STREET 219	219W1	15 KV LEOMINSTER	2.671	2008
05_01_219W2	05	01	PROSPECT STREET 219	219W2	15 KV LEOMINSTER	8.08	2007
05_01_219W3	05	01	PROSPECT STREET 219	219W3	15 KV LEOMINSTER	5.073	2010
05_01_219W4	05	01	PROSPECT STREET 219	219W4	15 KV LEOMINSTER	12.902	2006
05_01_219W5	05	01	PROSPECT STREET 219	219W5	15 KV LEOMINSTER	18.394	2008
05_01_219W6	05	01	PROSPECT STREET 219	219W6	15 KV LEOMINSTER	8.069	2005
05_01_21W1	05	01	LEICESTER 21	21W1	15 KV LEICESTER	20.839	2006
05_01_21W2	05	01	LEICESTER 21	21W2	15 KV LEICESTER	37.14	2005
05_01_225W1	05	01	PRATTS JUNCTION	225W1	15 KV BOLTON	37.266	2004
05_01_225W2	05	01	PRATTS JUNCTION	225W2	15 KV LEOMINSTER	5.099	2010
05_01_225W3	05	01	PRATTS JUNCTION	225W3	15 KV LEOMINSTER	16.172	2005
05_01_225W4	05	01	PRATTS JUNCTION	225W4	15 KV LEOMINSTER	7	2010
05_01_226L1	05	01	GROTON STREET 226	226L1	15 KV PEPPERELL	31.789	2004
05_01_226L2	05	01	GROTON STREET 226	226L2	15 KV PEPPERELL	55.039	2009
05_01_227W1	05	01	LAUREL CIRCLE 227	227W1	15 KV LANCASTER	28.669	2006
05_01_227W3	05	01	LAUREL CIRCLE 227	227W3	15 KV SHIRLEY	34.718	2005
05_01_23W1	05	01	COOKS POND 23	23W1	15 KV WORCESTER	4.338	2010
05_01_23W2	05	01	COOKS POND 23	23W2	15 KV WORCESTER	10.008	2006
05_01_23W3	05	01	COOKS POND 23	23W3	15 KV WORCESTER	11.024	2006
05_01_24W1	05	01	GREENDALE 24	24W1	15 KV WORCESTER	6.751	2005
05_01_24W2	05	01	GREENDALE 24	24W2	15 KV WORCESTER	17.219	2006
05_01_24W3	05	01	GREENDALE 24	24W3	15 KV WORCESTER	14.169	2010
05_01_24W5	05	01	GREENDALE 24	24W5	15 KV WORCESTER	8.514	2005
05_01_26W1	05	01	PONDVILLE 26	26W1	15 KV AUBURN	20.605	2006
05_01_26W2	05	01	PONDVILLE 26	26W2	15 KV AUBURN	17.177	2006
05_01_26W3	05	01	PONDVILLE 26	26W3	15 KV AUBURN	13.768	2008
05_01_26W4	05	01	PONDVILLE 26	26W4	15 KV AUBURN	2.27	2010
05_01_27W1	05	01	BLOOMINGDALE 27	27W1	15 KV WORCESTER	13.855	2004
05_01_27W2	05	01	BLOOMINGDALE 27	27W2	15 KV WORCESTER	4.346	2010
05_01_27W4	05	01	BLOOMINGDALE 27	27W4	15 KV WORCESTER	5.757	2008
05_01_27W5	05	01	BLOOMINGDALE 27	27W5	15 KV WORCESTER	12.035	2006
05_01_2J328	05	01	CHANDLER STREET 2	2J328	5 KV WORCESTER	0.427	2009
05_01_2J335	05	01	CHANDLER STREET 2	2J335	5 KV WORCESTER	2.675	2008
05_01_2J345	05	01	CHANDLER STREET 2	2J345	5 KV WORCESTER	1.762	2007
05_01_2J349	05	01	CHANDLER STREET 2	2J349	5 KV WORCESTER	1.257	2009
05_01_2J353	05	01	CHANDLER STREET 2	2J353	5 KV WORCESTER	0.893	2010
05_01_304W1	05	01	MILLBURY 4	304W1	15 KV GRAFTON	33.7	2006
05_01_304W2	05	01	MILLBURY 4	304W2	15 KV GRAFTON	23.445	2004
05_01_304W3	05	01	MILLBURY 4	304W3	15 KV MILLBURY	20.982	2010
05_01_304W4	05	01	MILLBURY 4	304W4	15 KV GRAFTON	15.729	2004
05_01_304W5	05	01	MILLBURY 4	304W5	15 KV MILLBURY	32.189	2006
05_01_304W6	05	01	MILLBURY 4	304W6	15 KV SUTTON	62.379	2007
05_01_328J2	05	01	NORTH GRAFTON 328	328J2	5 KV GRAFTON	0.623	2006
05_01_3J341	05	01	BANCROFT STREET 3	3J341	5 KV WORCESTER	0.404	2010

MA_Prune_EHTM_History

05_01_3J371	05	01	BANCROFT STREET 3	3J371	5 KV	WORCESTER	0.542	2008
05_01_3J372	05	01	BANCROFT STREET 3	3J372	5 KV	WORCESTER	0.492	2009
05_01_3J373	05	01	BANCROFT STREET 3	3J373	5 KV	WORCESTER	0.429	2009
05_01_3J374	05	01	BANCROFT STREET 3	3J374	5 KV	WORCESTER	0.941	2009
05_01_3J375	05	01	BANCROFT STREET 3	3J375	5 KV	WORCESTER	0.587	2009
05_01_406L1	05	01	NORTH OXFORD 2	406L1	15 KV	OXFORD	14.041	2006
05_01_406L2	05	01	NORTH OXFORD 2	406L2	15 KV	AUBURN	12.569	2008
05_01_406L3	05	01	NORTH OXFORD 2	406L3	15 KV	OXFORD	36.746	2007
05_01_406L4	05	01	NORTH OXFORD 2	406L4	15 KV	OXFORD	21.276	2004
05_01_408L1	05	01	FISKDALE 408	408L1	15 KV	STURBRIDGE	17.691	2007
05_01_408L2	05	01	FISKDALE 408	408L2	15 KV	STURBRIDGE	18.45	2007
05_01_412L1	05	01	EAST WEBSTER 412	412L1	15 KV	WEBSTER	22.56	2009
05_01_412L2	05	01	EAST WEBSTER 412	412L2	15 KV	WEBSTER	28.253	2008
05_01_412L3	05	01	EAST WEBSTER 412	412L3	15 KV	OXFORD	16.278	2006
05_01_412L4	05	01	EAST WEBSTER 412	412L4	15 KV	DUDLEY	51.699	2008
05_01_412L5	05	01	EAST WEBSTER 412	412L5	15 KV	DUDLEY	10.562	2007
05_01_412L6	05	01	EAST WEBSTER 412	412L6	15 KV	WEBSTER	9.818	2008
05_01_413L1	05	01	SNOW STREET 413	413L1	15 KV	SOUTHBRIDGE	16.644	2008
05_01_413L2	05	01	SNOW STREET 413	413L2	15 KV	STURBRIDGE	33.251	2009
05_01_413L3	05	01	SNOW STREET 413	413L3	15 KV	SOUTHBRIDGE	24.638	2008
05_01_415L1	05	01	WEST CHARLTON 415	415L1	15 KV	CHARLTON	33.516	2010
05_01_415L2	05	01	WEST CHARLTON 415	415L2	15 KV	CHARLTON	49.904	2009
05_01_415L3	05	01	WEST CHARLTON 415	415L3	15 KV	STURBRIDGE	12.699	2009
05_01_4J324	05	01	CAMBRIDGE STREET 4	4J324	5 KV	WORCESTER	0.329	2009
05_01_4J336	05	01	CAMBRIDGE STREET 4	4J336	5 KV	WORCESTER	0.956	2009
05_01_4J338	05	01	CAMBRIDGE STREET 4	4J338	5 KV	WORCESTER	0.555	2008
05_01_4J339	05	01	CAMBRIDGE STREET 4	4J339	5 KV	WORCESTER	0.411	2008
05_01_4J340	05	01	CAMBRIDGE STREET 4	4J340	5 KV	WORCESTER	0.311	2010
05_01_4J348	05	01	CAMBRIDGE STREET 4	4J348	5 KV	WORCESTER	0.352	2010
05_01_525L1	05	01	LASHAWAY 525	525L1	15 KV	NORTH BROOKFIELD	33.143	2009
05_01_525L2	05	01	LASHAWAY 525	525L2	15 KV	WEST BROOKFIELD	51.859	2006
05_01_552L1	05	01	MEADOW STREET 552	552L1	15 KV	SPENCER	79.741	2008
05_01_552L3	05	01	MEADOW STREET 552	552L3	15 KV	SPENCER	13.285	2006
05_01_601J3	05	01	PARK STREET 601	601J3	5 KV	GARDNER	5.827	2010
05_01_601J4	05	01	PARK STREET 601	601J4	5 KV	GARDNER	2.009	2010
05_01_601J6	05	01	PARK STREET 601	601J6	5 KV	GARDNER	4.984	2010
05_01_601J7	05	01	PARK STREET 601	601J7	5 KV	GARDNER	4.876	2010
05_01_601J8	05	01	PARK STREET 601	601J8	5 KV	GARDNER	1.249	2010
05_01_601W1	05	01	PARK STREET 601	601W1	15 KV	GARDNER	25.861	2006
05_01_601W2	05	01	PARK STREET 601	601W2	15 KV	GARDNER	2.397	2010
05_01_601W3	05	01	PARK STREET 601	601W3	15 KV	GARDNER	12.934	2010
05_01_601W4	05	01	PARK STREET 601	601W4	15 KV	GARDNER	11.796	2006
05_01_602W2	05	01	WESTMINSTER 602	602W2	15 KV	HUBBARDSTON	26.244	2008
05_01_602W3	05	01	WESTMINSTER 602	602W3	15 KV	HUBBARDSTON	8.456	2010
05_01_609W1	05	01	EAST WESTMINSTER 609	609W1	15 KV	HUBBARDSTON	41.902	2006
05_01_609W2	05	01	EAST WESTMINSTER 609	609W2	15 KV	WESTMINSTER	23.902	2009

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05_01_610W3	05	01	01	610W3	15 kV	WESTMINSTER	22.233	2009
05_01_612W1	05	01	01	612W1	5 kV	WINCHENDON	55.315	2007
05_01_612W3	05	01	01	612W3	15 kV	WINCHENDON	35.012	2005
05_01_6J304	05	01	01	6J304	5 kV	WORCESTER	0.637	2010
05_01_6J305	05	01	01	6J305	5 kV	WORCESTER	0.411	2010
05_01_6J312	05	01	01	6J312	5 kV	WORCESTER	0.308	2008
05_01_6J316	05	01	01	6J316	5 kV	WORCESTER	1.002	2010
05_01_6J318	05	01	01	6J318	5 kV	WORCESTER	2.658	2010
05_01_6J319	05	01	01	6J319	5 kV	WORCESTER	0.583	2009
05_01_6J326	05	01	01	6J326	5 kV	WORCESTER	0.529	2010
05_01_6J342	05	01	01	6J342	5 kV	WORCESTER	0.523	2009
05_01_6J356	05	01	01	6J356	5 kV	WORCESTER	0.651	2010
05_01_6W1	05	01	01	6W1	15 kV	AUBURN	11.429	2007
05_01_6W2	05	01	01	6W2	15 kV	WORCESTER	15.951	2004
05_01_7J386	05	01	01	7J386	5 kV	WORCESTER	3.514	2006
05_01_7J387	05	01	01	7J387	5 kV	WORCESTER	1.403	2010
05_01_8J364	05	01	01	8J364	5 kV	WORCESTER	0.52	2008
05_01_8J365	05	01	01	8J365	5 kV	WORCESTER	0.907	2008
05_01_8J389	05	01	01	8J389	5 kV	WORCESTER	0.213	2010
05_01_8W1	05	01	01	8W1	15 kV	WORCESTER	13.99	2004
05_01_8W2	05	01	01	8W2	15 kV	WORCESTER	15.641	2010
05_01_9J302	05	01	01	9J302	5 kV	WORCESTER	0.55	2009
05_01_9J303	05	01	01	9J303	5 kV	WORCESTER	1.173	2009
05_01_9J306	05	01	01	9J306	5 kV	WORCESTER	0.323	2004
05_01_9J307	05	01	01	9J307	5 kV	WORCESTER	0.433	2004
05_01_9J310	05	01	01	9J310	5 kV	WORCESTER	0.348	2004
05_01_9J315	05	01	01	9J315	5 kV	WORCESTER	0.192	2009
05_01_9J321	05	01	01	9J321	5 kV	WORCESTER	0.729	2009
05_01_9J327	05	01	01	9J327	5 kV	WORCESTER	0.017	2010
05_01_9J329	05	01	01	9J329	5 kV	WORCESTER	0.111	2010
05_01_9J337	05	01	01	9J337	5 kV	WORCESTER	0.628	2004
05_01_9J352	05	01	01	9J352	5 kV	WORCESTER	1.466	2010
05_01_9J360	05	01	01	9J360	5 kV	WORCESTER	2.562	2004
05_01_HT34	05	01	01	HT34	15 kV	HOLDEN	5.245	2005
05_05_106W42	05	05	05	106W42	15 kV	FALL RIVER	4.492	2010
05_05_106W43	05	05	05	106W43	15 kV	FALL RIVER	1.652	2010
05_05_106W44	05	05	05	106W44	15 kV	FALL RIVER	10.229	2008
05_05_106W46	05	05	05	106W46	15 kV	FALL RIVER	7.133	2006
05_05_106W81	05	05	05	106W81	15 kV	FALL RIVER	10.677	2006
05_05_106W82	05	05	05	106W82	15 kV	FALL RIVER	15.463	2008
05_05_115W42	05	05	05	115W42	15 kV	FALL RIVER	10.55	2010
05_05_115W43	05	05	05	115W43	15 kV	FALL RIVER	7.087	2004
05_05_115W44	05	05	05	115W44	15 kV	FALL RIVER	4.348	2010
05_05_115W45	05	05	05	115W45	15 kV	FALL RIVER	6.142	2010
05_05_115W51	05	05	05	115W51	15 kV	FALL RIVER	2.003	2010
05_05_115W52	05	05	05	115W52	15 kV	WESTPORT	38.119	2006

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05_05_115W53	05	BATES 115	115W53	15 KV	FALL RIVER	17.618	2006
05_05_115W54	05	BATES 115	115W54	15 KV	FALL RIVER	10.183	2006
05_05_115W55	05	BATES 115	115W55	15 KV	FALL RIVER	5.915	2010
05_05_11W81	05	SWANSEA 11	11W81	15 KV	SWANSEA	54.626	2008
05_05_11W82	05	SWANSEA 11	11W82	15 KV	SOMERSET	13.311	2008
05_05_11W83	05	SWANSEA 11	11W83	15 KV	SWANSEA	57.428	2008
05_05_318W3	05	NORTH MARLBORO 318	318W3	15 KV	BERLIN	37.739	2010
05_05_320W5	05	WHITINS POND 320	320W5	15 KV	SUTTON	16.351	2010
05_05_11W84	05	SWANSEA 11	11W84	15 KV	SWANSEA	50.248	2008
05_05_17J1	05	RIVERSIDE 17	17J1	5 KV	SOMERSET	5.487	2010
05_05_17J3	05	RIVERSIDE 17	17J3	5 KV	SOMERSET	6.127	2010
05_05_18J5	05	PALMER	18J5	5 KV	SOMERSET	7.192	2010
05_05_18J7	05	PALMER	18J7	5 KV	SOMERSET	6.692	2010
05_05_19W72	05	DIGHTON	19W72	15 KV	SOMERSET	19.848	2008
05_05_19W73	05	DIGHTON	19W73	15 KV	DIGHTON	57.975	2007
05_05_1J1	05	WEST STREET 1	1J1	5 KV	ATTLEBORO	3.568	2010
05_05_1J2	05	WEST STREET 1	1J2	5 KV	ATTLEBORO	0.749	2010
05_05_1J3	05	WEST STREET 1	1J3	5 KV	ATTLEBORO	3.304	2007
05_05_1J4	05	WEST STREET 1	1J4	5 KV	ATTLEBORO	5.652	2007
05_05_2468W1	05	SYKES 28	2468W1	15 KV	FOXBOROUGH	0.388	2006
05_05_28W40	05	SYKES 28	28W40	15 KV	FALL RIVER	8.431	2004
05_05_28W41	05	SYKES 28	28W41	15 KV	FALL RIVER	2.464	2010
05_05_2J1	05	FOREST STREET 2	2J1	5 KV	ATTLEBORO	4.029	2007
05_05_2J2	05	FOREST STREET 2	2J2	5 KV	ATTLEBORO	1.177	2010
05_05_2J3	05	FOREST STREET 2	2J3	5 KV	ATTLEBORO	2.24	2010
05_05_310W3	05	SOUTH MARLBOROUGH 310W3	310W3	15 KV	SOUTHBOROUGH	10.86	2008
05_05_310W4	05	SOUTH MARLBOROUGH 310W4	310W4	15 KV	MARLBOROUGH	7.588	2009
05_05_310W5	05	SOUTH MARLBOROUGH 310W5	310W5	15 KV	MARLBOROUGH	12.597	2007
05_05_310W6	05	SOUTH MARLBOROUGH 310W6	310W6	15 KV	MARLBOROUGH	13.922	2008
05_05_311W1	05	MARLBOROUGH 311	311W1	15 KV	MARLBOROUGH	9.392	2008
05_05_311W2	05	MARLBOROUGH 311	311W2	15 KV	MARLBOROUGH	15.463	2007
05_05_311W3	05	MARLBOROUGH 311	311W3	15 KV	MARLBOROUGH	21.491	2008
05_05_311W4	05	MARLBOROUGH 311	311W4	15 KV	MARLBOROUGH	12.221	2004
05_05_311W5	05	MARLBOROUGH 311	311W5	15 KV	MARLBOROUGH	8.869	2008
05_05_312W1	05	WESTBOROUGH 312	312W1	15 KV	WESTBOROUGH	22.883	2008
05_05_312W2	05	WESTBOROUGH 312	312W2	15 KV	WESTBOROUGH	4.452	2010
05_05_312W3	05	WESTBOROUGH 312	312W3	15 KV	WESTBOROUGH	10.135	2009
05_05_312W4	05	WESTBOROUGH 312	312W4	15 KV	WESTBOROUGH	22.473	2007
05_05_312W5	05	WESTBOROUGH 312	312W5	15 KV	WESTBOROUGH	9.439	2007
05_05_313W1	05	WOODSIDE 313	313W1	15 KV	NORTHBOROUGH	23.139	2004
05_05_313W2	05	WOODSIDE 313	313W2	15 KV	NORTHBOROUGH	9.869	2004
05_05_313W3	05	WOODSIDE 313	313W3	15 KV	NORTHBOROUGH	31.815	2005
05_05_313W4	05	WOODSIDE 313	313W4	15 KV	MARLBOROUGH	2.867	2007
05_05_314W1	05	EAST MAIN ST 314	314W1	15 KV	WESTBOROUGH	0.952	2010
05_05_314W3	05	EAST MAIN ST 314	314W3	15 KV	WESTBOROUGH	4.949	2008
05_05_314W5	05	EAST MAIN ST 314	314W5	15 KV	WESTBOROUGH	1.991	2010

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05_05_317W1	05	05	NORTHBORO ROAD 317	317W1	15 KV	SOUTHBOROUGH	14,837	2006
05_05_317W2	05	05	NORTHBORO ROAD 317	317W2	15 KV	MARLBOROUGH	2,364	2010
05_05_317W3	05	05	NORTHBORO ROAD 317	317W3	15 KV	SOUTHBOROUGH	18,996	2004
05_05_317W4	05	05	NORTHBORO ROAD 317	317W4	15 KV	SOUTHBOROUGH	11,454	2007
05_05_317W5	05	05	NORTHBORO ROAD 317	317W5	15 KV	SOUTHBOROUGH	3,593	2007
05_05_317W6	05	05	NORTHBORO ROAD 317	317W6	15 KV	MARLBOROUGH	1,128	2010
05_05_317W7	05	05	NORTHBORO ROAD 317	317W7	15 KV	MARLBOROUGH	2,466	2010
05_05_317W8	05	05	NORTHBORO ROAD 317	317W8	15 KV	MARLBOROUGH	2,451	2008
05_05_320W1	05	05	WHITINS POND 320	320W1	15 KV	NORTHBRIDGE	27,821	2004
05_05_320W2	05	05	WHITINS POND 320	320W2	15 KV	DOUGLAS	72,02	2005
05_05_320W3	05	05	WHITINS POND 320	320W3	15 KV	NORTHBRIDGE	23,098	2007
05_05_321W1	05	05	UXBRIDGE 321	321W1	15 KV	UXBRIDGE	23,473	2004
05_05_321W10	05	05	UXBRIDGE 321	321W10	15 KV	UXBRIDGE	4,377	2010
05_05_321W2	05	05	UXBRIDGE 321	321W2	15 KV	UXBRIDGE	41,553	2007
05_05_321W4	05	05	UXBRIDGE 321	321W4	15 KV	UXBRIDGE	6,419	2010
05_05_321W5	05	05	UXBRIDGE 321	321W5	15 KV	NORTHBRIDGE	7,766	2007
05_05_321W6	05	05	UXBRIDGE 321	321W6	15 KV	MENDON	25,695	2005
05_05_321W9	05	05	UXBRIDGE 321	321W9	15 KV	BLACKSTONE	26,03	2007
05_05_332W1	05	05	MENDON 332	332W1	15 KV	MENDON	17,034	2006
05_05_335W1	05	05	DEPOT STREET 335	335W1	15 KV	BELLINGHAM	15,614	2005
05_05_335W2	05	05	DEPOT STREET 335	335W2	15 KV	MILFORD	15,956	2007
05_05_335W3	05	05	DEPOT STREET 335	335W3	15 KV	UPTON	36,186	2004
05_05_335W4	05	05	DEPOT STREET 335	335W4	15 KV	MILFORD	9,602	2006
05_05_335W5	05	05	DEPOT STREET 335	335W5	15 KV	MILFORD	26,268	2010
05_05_335W9	05	05	DEPOT STREET 335	335W9	15 KV	HOPEDALE	9,875	2004
05_05_336W1	05	05	ROCKY HILL 336	336W1	15 KV	MILFORD	7,804	2007
05_05_336W2	05	05	ROCKY HILL 336	336W2	15 KV	MILFORD	5,731	2006
05_05_336W3	05	05	ROCKY HILL 336	336W3	15 KV	MILFORD	27,552	2006
05_05_336W4	05	05	ROCKY HILL 336	336W4	15 KV	MILFORD	4,34	2007
05_05_341J1	05	05	FRANKLIN 341	341J1	5 KV	FRANKLIN	0,278	2007
05_05_341J2	05	05	FRANKLIN 341	341J2	5 KV	FRANKLIN	1,925	2007
05_05_341J4	05	05	FRANKLIN 341	341J4	5 KV	FRANKLIN	1,135	2007
05_05_341W1	05	05	FRANKLIN 341	341W1	15 KV	FRANKLIN	20,803	2006
05_05_341W2	05	05	FRANKLIN 341	341W2	15 KV	FRANKLIN	8,81	2006
05_05_3421H2	05	05	WRENTHAM 1 3421	3421H2	5 KV	WRENTHAM	1,185	2010
05_05_3422W1	05	05	SOUTH WRENTHAM 3422	3422W1	15 KV	WRENTHAM	20,086	2004
05_05_3422W2	05	05	SOUTH WRENTHAM 3422	3422W2	15 KV	WRENTHAM	21,418	2008
05_05_3422W3	05	05	SOUTH WRENTHAM 3422	3422W3	15 KV	PLAINVILLE	11,495	2006
05_05_3422W4	05	05	SOUTH WRENTHAM 3422	3422W4	15 KV	WRENTHAM	18,93	2008
05_05_3424W1	05	05	CROCKER POND 3424	3424W1	15 KV	FOXBOROUGH	21,152	2004
05_05_3424W3	05	05	CROCKER POND 3424	3424W3	15 KV	FOXBOROUGH	1,762	2010
05_05_3431W1	05	05	FOXBORO 1 3431	3431W1	15 KV	FOXBOROUGH	13,93	2004
05_05_3432W1	05	05	FOXBORO 2 3432	3432W1	15 KV	FOXBOROUGH	20,423	2008
05_05_3432W2	05	05	FOXBORO 2 3432	3432W2	15 KV	FOXBOROUGH	8,503	2008
05_05_344W1	05	05	BEAVER POND 344	344W1	15 KV	FRANKLIN	24,854	2006
05_05_344W2	05	05	BEAVER POND 344	344W2	15 KV	FRANKLIN	1,789	2010

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Asset ID	Asset Name	Asset Type	Asset Class	Asset Subclass	Asset Location	Asset Voltage	Asset Status	Asset Year	Asset Cost	Asset Date
05_05_344W3	BEAVER POND 344	05	344W3		FRANKLIN	15 kV		2008	13,817	
05_05_344W4	BEAVER POND 344	05	344W4		BELLINGHAM	15 kV		2008	30,623	
05_05_344W5	BEAVER POND 344	05	344W5		FRANKLIN	15 kV		2006	9,713	
05_05_344W6	BEAVER POND 344	05	344W6		FRANKLIN	15 kV		2010	3,426	
05_05_3451W1	PLAINVILLE 3451	05	3451W1		PLAINVILLE	15 kV		2008	14,849	
05_05_3451W2	PLAINVILLE 3451	05	3451W2		PLAINVILLE	15 kV		2005	22,072	
05_05_346H1	SOUTH BELLINGHAM 346	05	346H1		BELLINGHAM	5 kV		2007	3,193	
05_05_346H2	SOUTH BELLINGHAM 346	05	346H2		BELLINGHAM	5 kV		2010	0,022	
05_05_348W5	UNION STREET 348	05	348W5		FRANKLIN	15 kV		2008	24,086	
05_05_348W6	UNION STREET 348	05	348W6		FRANKLIN	15 kV		2010	16,576	
05_05_3J1	REHOBOTH 3	05	3J1		REHOBOTH	5 kV		2010	2,433	
05_05_3J2	REHOBOTH 3	05	3J2		REHOBOTH	5 kV		2006	13,36	
05_05_3J3	REHOBOTH 3	05	3J3		REHOBOTH	5 kV		2008	6,691	
05_05_4J1	NORTON 4	05	4J1		NORTON	5 kV		2008	1,611	
05_05_4J2	NORTON 4	05	4J2		NORTON	5 kV		2010	1,374	
05_05_4L1	NORTON 4	05	4L1		NORTON	15 kV		2004	30,276	
05_05_4L2	NORTON 4	05	4L2		NORTON	15 kV		2007	27,049	
05_05_5J1	SOUTH ATTLEBORO 5	05	5J1		ATTLEBORO	5 kV		2010	6,773	
05_05_5J2	SOUTH ATTLEBORO 5	05	5J2		ATTLEBORO	5 kV		2010	5,112	
05_05_6J1	CLARA STREET 6	05	6J1		SEEKONK	5 kV		2010	1,697	
05_05_6J2	CLARA STREET 6	05	6J2		SEEKONK	5 kV		2008	6,029	
05_05_7L1	MINK STREET 7	05	7L1		SEEKONK	15 kV		2004	34,073	
05_05_7L2	MINK STREET 7	05	7L2		SEEKONK	15 kV		2010	2,957	
05_05_7L3	MINK STREET 7	05	7L3		SEEKONK	15 kV		2007	9,187	
05_05_7L4	MINK STREET 7	05	7L4		REHOBOTH	15 kV		2005	48,66	
05_05_7L5	MINK STREET 7	05	7L5		REHOBOTH	15 kV		2006	43,607	
05_05_8L1	CHARTLEY POND 8	05	8L1		ATTLEBORO	15 kV		2008	14,227	
05_05_8L2	CHARTLEY POND 8	05	8L2		NORTON	15 kV		2004	24,826	
05_05_8L3	CHARTLEY POND 8	05	8L3		NORTON	15 kV		2006	16,991	
05_05_8L4	CHARTLEY POND 8	05	8L4		REHOBOTH	15 kV		2005	23,657	
05_05_9L1	READ STREET 9	05	9L1		ATTLEBORO	15 kV		2006	31,283	
05_05_9L2	READ STREET 9	05	9L2		ATTLEBORO	15 kV		2007	17,002	
05_05_9L3	READ STREET 9	05	9L3		ATTLEBORO	15 kV		2006	26,184	
05_05_9L4	READ STREET 9	05	9L4		ATTLEBORO	15 kV		2006	25,62	
05_05_9L5	READ STREET 9	05	9L5		SEEKONK	15 kV		2007	17,762	
05_05_28W50	SYKES 28	05	28W50		FALL RIVER	15 kV		2010	18,213	
05_05_28W51	SYKES 28	05	28W51		FALL RIVER	15 kV		2009	3,412	
05_05_314W2	EAST MAIN ST 314	05	314W2		SOUTHBOROUGH	15 kV		2010	1,275	
05_07_10W1	HOLBROOK 10	05	10W1		HOLBROOK	15 kV		2004	8,972	
05_07_11W1	NORTH QUINCY 11	05	11W1		QUINCY	15 kV		2006	9,693	
05_07_11W2	NORTH QUINCY 11	05	11W2		QUINCY	15 kV		2008	4,747	
05_07_11W3	NORTH QUINCY 11	05	11W3		QUINCY	15 kV		2010	0,845	
05_07_11W4	NORTH QUINCY 11	05	11W4		QUINCY	15 kV		2006	13,571	
05_07_12W1	MID-WEYMOUTH 12	05	12W1		WEYMOUTH	15 kV		2007	13,252	
05_07_12W2	MID-WEYMOUTH 12	05	12W2		WEYMOUTH	15 kV		2009	15,985	
05_07_12W4	MID-WEYMOUTH 12	05	12W4		WEYMOUTH	15 kV		2008	18,086	

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05_07_15J1	07	SCITUATE UNIT 15	15J1	5 KV	SCITUATE	15.222	2005	2007
05_07_17J1	07	SCITUATE UNIT 17	17J1	5 KV	SCITUATE	7.672	2005	
05_07_18J1	05	KING STREET UNIT 18	18J1	5 KV	COHASSET	9.31	2009	
05_07_1J11	05	FIELD STREET 1	1J11	5 KV	QUINCY	0.069	2010	
05_07_1J9	05	FIELD STREET 1	1J9	5 KV	QUINCY	0.412	2010	
05_07_1W1	05	FIELD STREET 1	1W1	15 KV	QUINCY	10.113	2008	
05_07_1W2	05	FIELD STREET 1	1W2	15 KV	QUINCY	13.232	2008	
05_07_1W3	05	FIELD STREET 1	1W3	15 KV	QUINCY	5.905	2008	
05_07_1W4	05	FIELD STREET 1	1W4	15 KV	QUINCY	9.098	2010	
05_07_1W5	05	FIELD STREET 1	1W5	15 KV	QUINCY	9.765	2008	
05_07_1W6	05	FIELD STREET 1	1W6	15 KV	QUINCY	12.65	2009	
05_07_20W13	05	BROCKTON-NETWORK	20W13	15 KV	BROCKTON	1.654	2010	
05_07_28J1	05	POND ST. UNIT 28	28J1	5 KV	AVON	4.536	2008	
05_07_29J1	05	WOODLAND AVE UNIT 29	29J1	5 KV	BROCKTON	4.797	2009	
05_07_2J1	05	WOLLASTON 2	2J1	5 KV	QUINCY	2.587	2010	
05_07_2J3	05	WOLLASTON 2	2J3	5 KV	QUINCY	2.935	2008	
05_07_2J5	05	WOLLASTON 2	2J5	5 KV	QUINCY	0.405	2010	
05_07_2J6	05	WOLLASTON 2	2J6	5 KV	QUINCY	1.252	2010	
05_07_2J8	05	WOLLASTON 2	2J8	5 KV	QUINCY	2.383	2008	
05_07_2W1	05	EAST HOLBROOK 2	2W1	15 KV	HOLBROOK	18.253	2005	
05_07_2W2	05	EAST HOLBROOK 2	2W2	15 KV	WEYMOUTH	4.314	2010	
05_07_3J1	05	WEST QUINCY 3	3J1	5 KV	QUINCY	3.702	2009	
05_07_3J2	05	WEST QUINCY 3	3J2	5 KV	QUINCY	0.075	2009	
05_07_3J3	05	WEST QUINCY 3	3J3	5 KV	QUINCY	3.121	2007	
05_07_3J91	05	SOUTH WEYMOUTH 3	3J91	5 KV	WEYMOUTH	0.824	2009	
05_07_3J92	05	SOUTH WEYMOUTH 3	3J92	5 KV	WEYMOUTH	4.424	2009	
05_07_3J93	05	SOUTH WEYMOUTH 3	3J93	5 KV	WEYMOUTH	3.945	2009	
05_07_3W1	05	WEST QUINCY 3	3W1	15 KV	QUINCY	3.448	2008	
05_07_3W2	05	WEST QUINCY 3	3W2	15 KV	QUINCY	4.828	2008	
05_07_3W3	05	WEST QUINCY 3	3W3	15 KV	QUINCY	10.345	2009	
05_07_3W4	05	WEST QUINCY 3	3W4	15 KV	QUINCY	1.259	2010	
05_07_40J1	05	WEST BRIDGEWATER UNIT 40J1	40J1	5 KV	WEST BRIDGEWA	11.002	2007	
05_07_4J1	05	ATLANTIC 4	4J1	5 KV	QUINCY	3.396	2004	
05_07_4J2	05	ATLANTIC 4	4J2	5 KV	QUINCY	3.253	2010	
05_07_4J3	05	ATLANTIC 4	4J3	5 KV	QUINCY	1.567	2008	
05_07_4J4	05	ATLANTIC 4	4J4	5 KV	QUINCY	3.082	2010	
05_07_5W1	05	RANDOLPH 5	5W1	15 KV	RANDOLPH	4.232	2008	
05_07_5W2	05	RANDOLPH 5	5W2	15 KV	RANDOLPH	14.436	2009	
05_07_5W3	05	RANDOLPH 5	5W3	15 KV	RANDOLPH	11.68	2008	
05_07_5W4	05	RANDOLPH 5	5W4	15 KV	RANDOLPH	19.554	2005	
05_07_601W79	05		601W79	15 KV	STOUGHTON	0.201	2009	2007
05_07_602W100	05		602W100	15 KV	BRIDGEWATER	0.299	2007	
05_07_60J1	05	LINCOLN STREET UNIT 60	60J1	5 KV	ABINGTON	8.298	2009	
05_07_64J1	05	DIVISION STREET UNIT 64	64J1	5 KV	ROCKLAND	5.274	2010	
05_07_65J1	05	NORTH SCITUATE UNIT 65	65J1	5 KV	SCITUATE	7.976	2004	
05_07_66J1	05	HANOVER UNIT 66	66J1	5 KV	HANOVER	5.054	2004	

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05_07_67J1	07	05	07	CENTRAL STREET UNIT 67	67J1	5 KV	ABINGTON	6.757	2007
05_07_68J1	07	05	07	AVON UNIT 68	68J1	5 KV	AVON	6.877	2007
05_07_69J1	07	05	07	COURT STREET UNIT 69	69J1	5 KV	BROCKTON	10.486	2009
05_07_6J1	07	05	07	HOUGHS NECK 6	6J1	5 KV	QUINCY	5.345	2008
05_07_6J2	07	05	07	HOUGHS NECK 6	6J2	5 KV	QUINCY	2.786	2009
05_07_6W1	07	05	07	NORTH WEYMOUTH 6	6W1	15 KV	WEYMOUTH	16.553	2008
05_07_6W2	07	05	07	NORTH WEYMOUTH 6	6W2	15 KV	WEYMOUTH	17.486	2007
05_07_712J1	07	05	07	TEMPLE ST. UNIT 12	712J1	5 KV	BROCKTON	8.716	2010
05_07_72J1	07	05	07	ROCKLAND STREET SUB	72J1	5 KV	HANOVER	8.592	2009
05_07_797W1	07	05	07	EAST BRIDGEWATER SUB	797W1	15 KV	EAST BRIDGEWA	13.187	2010
05_07_797W19	07	05	07	EAST BRIDGEWATER SUB	797W19	15 KV	WEST BRIDGEWA	7.06	2010
05_07_797W20	07	05	07	EAST BRIDGEWATER SUB	797W20	15 KV	WEST BRIDGEWA	21.891	2004
05_07_797W23	07	05	07	EAST BRIDGEWATER SUB	797W23	15 KV	EAST BRIDGEWA	23.466	2006
05_07_797W24	07	05	07	EAST BRIDGEWATER SUB	797W24	15 KV	HANSON	23.933	2005
05_07_797W29	07	05	07	EAST BRIDGEWATER SUB	797W29	15 KV	EAST BRIDGEWA	12.341	2004
05_07_797W42	07	05	07	EAST BRIDGEWATER SUB	797W42	15 KV	EAST BRIDGEWA	15.005	2004
05_07_910W25	07	05	07	WATER STREET #910	910W25	15 KV	PEMBROKE	40.654	2005
05_07_910W26	07	05	07	WATER STREET #910	910W26	15 KV	HANOVER	0.032	2009
05_07_910W51	07	05	07	WATER STREET #910	910W51	15 KV	NORWELL	10.963	2007
05_07_910W52	07	05	07	WATER STREET #910	910W52	15 KV	PEMBROKE	22.29	2005
05_07_911W13	07	05	07	AMES SUB	911W13	15 KV	BROCKTON	21.499	2006
05_07_911W56	07	05	07	AMES SUB	911W56	15 KV	BROCKTON	21.634	2008
05_07_911W57	07	05	07	AMES SUB	911W57	15 KV	BROCKTON	6.011	2007
05_07_911W59	07	05	07	AMES SUB	911W59	15 KV	BROCKTON	1.128	2008
05_07_911W77	07	05	07	AMES SUB	911W77	15 KV	BROCKTON	16.823	2006
05_07_912W21	07	05	07	MILL STREET SUB	912W21	15 KV	BRIDGEWATER	31.007	2007
05_07_912W22	07	05	07	MILL STREET SUB	912W22	15 KV	EAST BRIDGEWA	1.693	2009
05_07_912W55	07	05	07	MILL STREET SUB	912W55	15 KV	BRIDGEWATER	38.119	2008
05_07_912W73	07	05	07	MILL STREET SUB	912W73	15 KV	BRIDGEWATER	27.157	2006
05_07_912W74	07	05	07	MILL STREET SUB	912W74	15 KV	EAST BRIDGEWA	7.906	2007
05_07_912W75	07	05	07	MILL STREET SUB	912W75	15 KV	HALIFAX	34.278	2008
05_07_913W17	07	05	07	STOUGHTON	913W17	15 KV	STOUGHTON	13.911	2007
05_07_913W18	07	05	07	STOUGHTON	913W18	15 KV	STOUGHTON	10.839	2007
05_07_913W43	07	05	07	STOUGHTON	913W43	15 KV	STOUGHTON	28.187	2008
05_07_913W47	07	05	07	STOUGHTON	913W47	15 KV	STOUGHTON	13.769	2006
05_07_913W67	07	05	07	STOUGHTON	913W67	15 KV	STOUGHTON	8.735	2007
05_07_913W69	07	05	07	STOUGHTON	913W69	15 KV	STOUGHTON	16.905	2007
05_07_915W35	07	05	07	SCITUATE SUB	915W35	15 KV	NORWELL	38.6	2004
05_07_915W36	07	05	07	SCITUATE SUB	915W36	15 KV	SCITUATE	22.275	2010
05_07_915W37	07	05	07	SCITUATE SUB	915W37	15 KV	COHASSET	23.381	2008
05_07_915W82	07	05	07	SCITUATE SUB	915W82	15 KV	SCITUATE	40.309	2006
05_07_91W40	07	05	07	DUPONT SUB	91W40	15 KV	BROCKTON	11.999	2009
05_07_91W41	07	05	07	DUPONT SUB	91W41	15 KV	WHITMAN	18.436	2009
05_07_91W42	07	05	07	DUPONT SUB	91W42	15 KV	BROCKTON	23.465	2005
05_07_91W43	07	05	07	DUPONT SUB	91W43	15 KV	BROCKTON	21.052	2008
05_07_92W44	07	05	07	EASTON SUB	92W44	15 KV	EASTON	32.241	2006

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05_07_92W54	07	EASTON SUB	92W54	15 KV	EASTON	21.602	2004
05_07_92W78	05	EASTON SUB	92W78	15 KV	EASTON	30.245	2008
05_07_92W79	05	EASTON SUB	92W79	15 KV	EASTON	13.838	2005
05_07_93W40	05	PLYMOUTH	93W40	15 KV	ROCKLAND	3.988	2010
05_07_93W41	05	PLYMOUTH	93W41	15 KV	ROCKLAND	15.16	2009
05_07_93W42	05	PLYMOUTH	93W42	15 KV	ABINGTON	24.413	2004
05_07_93W43	05	PLYMOUTH	93W43	15 KV	WHITMAN	22.74	2007
05_07_94W40	05	PARKVIEW SUB.	94W40	15 KV	BROCKTON	5.088	2007
05_07_94W41	05	PARKVIEW SUB.	94W41	15 KV	AVON	7.084	2006
05_07_94W42	05	PARKVIEW SUB.	94W42	15 KV	STOUGHTON	3.885	2006
05_07_94W43	05	PARKVIEW SUB.	94W43	15 KV	BROCKTON	13.203	2006
05_07_94W44	05	PARKVIEW SUB.	94W44	15 KV	STOUGHTON	10.481	2006
05_07_95W1	05	PHILLIPS LANE	95W1	15 KV	HANOVER	15.584	2009
05_07_95W2	05	PHILLIPS LANE	95W2	15 KV	HANOVER	13.697	2007
05_07_95W3	05	PHILLIPS LANE	95W3	15 KV	HANOVER	18.996	2007
05_07_95W4	05	PHILLIPS LANE	95W4	15 KV	HANOVER	8.338	2005
05_07_95W5	05	PHILLIPS LANE	95W5	15 KV	HANOVER	23.482	2008
05_07_96W40	05	NORWELL SUB	96W40	15 KV	NORWELL	16.437	2007
05_07_96W41	05	NORWELL SUB	96W41	15 KV	COHASSET	14.79	2008
05_07_96W42	05	NORWELL SUB	96W42	15 KV	SCITUATE	1.382	2010
05_07_96W43	05	NORWELL SUB	96W43	15 KV	NORWELL	0.025	2007
05_07_96W44	05	NORWELL SUB	96W44	15 KV	NORWELL	20.582	2009
05_07_97W1	05	SOUTH RANDOLPH 97	97W1	15 KV	RANDOLPH	9.892	2008
05_07_97W2	05	SOUTH RANDOLPH 97	97W2	15 KV	RANDOLPH	14.092	2009
05_07_97W3	05	SOUTH RANDOLPH 97	97W3	15 KV	RANDOLPH	9.478	2009
05_07_97W4	05	SOUTH RANDOLPH 97	97W4	15 KV	RANDOLPH	7.644	2008
05_07_97W5	05	SOUTH RANDOLPH 97	97W5	15 KV	AVON	8.387	2009
05_07_98W10	05	BELMONT SUB	98W10	15 KV	BROCKTON	15.234	2006
05_07_98W19	05	BELMONT SUB	98W19	15 KV	BROCKTON	2.692	2010
05_07_98W44	05	BELMONT SUB	98W44	15 KV	WEST BRIDGEWA	6.454	2008
05_07_98W46	05	BELMONT SUB	98W46	15 KV	BROCKTON	12.889	2007
05_07_98W48	05	BELMONT SUB	98W48	15 KV	EASTON	3.144	2010
05_07_98W49	05	BELMONT SUB	98W49	15 KV	BROCKTON	21.231	2005
05_07_99W32	05	NORTH ABINGTON SUB	99W32	15 KV	WEYMOUTH	7.927	2008
05_07_99W61	05	NORTH ABINGTON SUB	99W61	15 KV	ROCKLAND	18.141	2007
05_07_99W62	05	NORTH ABINGTON SUB	99W62	15 KV	ABINGTON	9.084	2004
05_07_99W63	05	NORTH ABINGTON SUB	99W63	15 KV	ROCKLAND	10.099	2008
05_07_9W1	05	EAST WEYMOUTH 9	9W1	15 KV	WEYMOUTH	7.943	2008
05_07_9W2	05	EAST WEYMOUTH 9	9W2	15 KV	WEYMOUTH	11.959	2008
05_09_604W2	05	BARRE 604	604W2	15 KV	OAKHAM	37.681	2009
05_09_604W3	05	BARRE 604	604W3	15 KV	NEW BRAINTREE	39.738	2006
05_09_1001W1	05	BROWN STREET 1	1001W1	15 KV	NORTH ADAMS	24.506	2010
05_09_1003W1	05	WILLIAMSTOWN 3	1003W1	15 KV	WILLIAMSTOWN	22.318	2004
05_09_1003W2	05	WILLIAMSTOWN 3	1003W2	15 KV	WILLIAMSTOWN	43.693	2007
05_09_1007G1	05	CHARLEMONT 7	1007G1	5 KV	CHARLEMONT	19.989	2006
05_09_1009W1	05	CHARLEMONT 7	1009W1	5 KV	MONROE	8.354	2006

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05_09_1015W1	09	09	05	09	09	1015W1	5 KV	FLORIDA	32.466	2007
05_09_1015W2	05	09	05	09	09	1015W2	15 KV	CLARKSBURG	18.622	2004
05_09_1018K1	05	09	05	09	09	1018K1	15 KV	HANCOCK	1.666	2004
05_09_1019W1	05	09	05	09	09	BEAR SWAMP 19 - UPPER Y 1019W1	5 KV	HEATH	44.803	2007
05_09_1021W1	05	09	05	09	09	ADAMS 21	15 KV	ADAMS	26.19	2004
05_09_1050M105C05	05	09	05	09	09	1050M1050	5 KV	HANCOCK	2.442	2004
05_09_1102W1	05	09	05	09	09	STOCKBRIDGE 2	15 KV	STOCKBRIDGE	44.673	2007
05_09_1103W1	05	09	05	09	09	LENOX DEPOT 3	15 KV	LENOX	23.127	2006
05_09_1103W2	05	09	05	09	09	LENOX DEPOT 3	15 KV	LENOX	24.551	2008
05_09_1108W1	05	09	05	09	09	SHEFFIELD 8	15 KV	SHEFFIELD	29.92	2006
05_09_1109W1	05	09	05	09	09	RISINGDALE 9	15 KV	NEW MARLBORO	72.858	2006
05_09_1109W2	05	09	05	09	09	RISINGDALE 9	15 KV	GREAT BARRING	29.093	2004
05_09_1109W3	05	09	05	09	09	RISINGDALE 9	15 KV	WEST STOCKBRIDGE	37.569	2007
05_09_501L1	05	09	05	09	09	WARE 1 501	15 KV	WARE	13.089	2010
05_09_501L2	05	09	05	09	09	WARE 1 501	15 KV	HARDWICK	65.708	2008
05_09_503L2	05	09	05	09	09	PALMER 503	15 KV	MONSON	77.541	2008
05_09_503L4	05	09	05	09	09	PALMER 503	15 KV	BRIMFIELD	24.407	2010
05_09_507L1	05	09	05	09	09	WILBRAHAM 507	15 KV	WILBRAHAM	44.565	2007
05_09_507L2	05	09	05	09	09	WILBRAHAM 507	15 KV	WILBRAHAM	21.546	2007
05_09_507L3	05	09	05	09	09	WILBRAHAM 507	15 KV	WILBRAHAM	24.894	2008
05_09_508L1	05	09	05	09	09	EAST LONGMEADOW 508	15 KV	EAST LONGMEAD	12.593	2009
05_09_508L5	05	09	05	09	09	EAST LONGMEADOW 508	15 KV	EAST LONGMEAD	22.863	2006
05_09_509L1	05	09	05	09	09	BELCHERTOWN 509	15 KV	BELCHERTOWN	43.564	2007
05_09_509L2	05	09	05	09	09	BELCHERTOWN 509	15 KV	BELCHERTOWN	70.806	2009
05_09_514L1	05	09	05	09	09	514L1	15 KV	PALMER	16.96	2008
05_09_516L1	05	09	05	09	09	LITTLE REST ROAD 516	15 KV	BRIMFIELD	43.648	2009
05_09_516L2	05	09	05	09	09	LITTLE REST ROAD 516	15 KV	WARREN	20.469	2010
05_09_516L3	05	09	05	09	09	LITTLE REST ROAD 516	15 KV	WARREN	36.101	2009
05_09_523L2	05	09	05	09	09	THORNDIKE 523	15 KV	BELCHERTOWN	26.917	2009
05_09_523L4	05	09	05	09	09	THORNDIKE 523	15 KV	PALMER	19.939	2006
05_09_524L1	05	09	05	09	09	HAMPDEN 524	15 KV	HAMPDEN	42.156	2008
05_09_524L2	05	09	05	09	09	HAMPDEN 524	15 KV	EAST LONGMEAD	12.217	2008
05_09_527L1	05	09	05	09	09	FIVE CORNERS 527	15 KV	GRANBY	65.983	2008
05_09_604W1	05	09	05	09	09	BARRE 604	15 KV	PETERSHAM	42.93	2004
05_09_604W4	05	09	05	09	09	BARRE 604	15 KV	BARRE	53.055	2007
05_09_701J1	05	09	05	09	09	ROYALSTON 701	5 KV	ROYALSTON	41.525	2005
05_09_702W1	05	09	05	09	09	CHESTNUT HILL 702	15 KV	PHILLIPSTON	41.873	2007
05_09_702W2	05	09	05	09	09	CHESTNUT HILL 702	5 KV	ATHOL	28.459	2008
05_09_702W3	05	09	05	09	09	CHESTNUT HILL 702	15 KV	ATHOL	31.32	2006
05_09_704W1	05	09	05	09	09	SHUTESBURY 704	15 KV	SHUTESBURY	27.569	2004
05_09_705W1	05	09	05	09	09	WENDELL DEPOT 705	15 KV	WENDELL	30.844	2005
05_09_705W2	05	09	05	09	09	WENDELL DEPOT 705	15 KV	ORANGE	31.451	2007
05_09_705W3	05	09	05	09	09	WENDELL DEPOT 705	15 KV	WARWICK	40.911	2008
05_09_8888G10	05	09	05	09	09	8888G10	5 KV	HAWLEY	1.177	2010
05_09_901W1	05	09	05	09	09	WEST STREET 901	15 KV	NORTHAMPTON	15.489	2008
05_09_901W2	05	09	05	09	09	WEST STREET 901	15 KV	NORTHAMPTON	3.572	2008

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05_09_901W3	09	WEST STREET 901	901W3	15 KV	NORTHAMPTON	14,634	2010
05_09_905W1	09	KING STREET 5	905W1	15 KV	NORTHAMPTON	11,047	2009
05_09_909W1	09	FLORENCE JCT 9	909W1	15 KV	NORTHAMPTON	15,593	2008
05_09_909W2	09	FLORENCE JCT 9	909W2	15 KV	NORTHAMPTON	14,807	2008
05_09_909W3	09	FLORENCE JCT 9	909W3	15 KV	WILLIAMSBURG	44,253	2006
05_09_909W4	09	FLORENCE JCT 9	909W4	15 KV	NORTHAMPTON	33,762	2006
05_12_10C1	12	THORNDIKE ST 10	10C1	5 KV	EVERETT	1,306	2006
05_12_10C2	12	THORNDIKE ST 10	10C2	5 KV	EVERETT	1,073	2006
05_12_10J4	12	THORNDIKE ST 10	10J4	5 KV	EVERETT	1,416	2006
05_12_10J5	12	THORNDIKE ST 10	10J5	5 KV	EVERETT	1,446	2006
05_12_10J6	12	THORNDIKE ST 10	10J6	5 KV	EVERETT	1,828	2006
05_12_10P3	12	THORNDIKE ST 10	10P3	5 KV	EVERETT	0,032	2006
05_12_11J1	12	WELLINGTON 11	11J1	5 KV	MEDFORD	1,173	2007
05_12_11J13	12	WELLINGTON 11	11J13	5 KV	MEDFORD	1,405	2007
05_12_11J2	12	WELLINGTON 11	11J2	5 KV	MALDEN	3,404	2007
05_12_11J3	12	WELLINGTON 11	11J3	5 KV	MALDEN	2,684	2007
05_12_11J4	12	WELLINGTON 11	11J4	5 KV	MEDFORD	0,85	2007
05_12_11J901	12	WALNUT 11	11J901	5 KV	SAUGUS	3,245	2009
05_12_12J2	12	BEVERLY 12	12J2	5 KV	BEVERLY	0,803	2007
05_12_12J3	12	BEVERLY 12	12J3	5 KV	BEVERLY	0,053	2007
05_12_12J3	12	BEVERLY 12	12J3	5 KV	BEVERLY	0,053	2004
05_12_12J4	12	BEVERLY 12	12J4	5 KV	BEVERLY	0,728	2007
05_12_12J5	12	BEVERLY 12	12J5	5 KV	BEVERLY	1,933	2007
05_12_12J6	12	BEVERLY 12	12J6	5 KV	BEVERLY	0,546	2007
05_12_12J7	12	BEVERLY 12	12J7	5 KV	BEVERLY	0,113	2007
05_12_12J902	12	GRANITE 12	12J902	5 KV	LYNN	0,634	2006
05_12_12J903	12	GRANITE 12	12J903	5 KV	LYNN	1,591	2007
05_12_12J904	12	GRANITE 12	12J904	5 KV	LYNN	1,572	2007
05_12_12L2	12	BEVERLY 12	12L2	15 KV	BEVERLY	21,122	2008
05_12_12L4	12	BEVERLY 12	12L4	15 KV	BEVERLY	5,997	2009
05_12_12L6	12	BEVERLY 12	12L6	15 KV	BEVERLY	0,864	2010
05_12_13J1	12	BEVERLY 12	13J1	5 KV	SAUGUS	0,363	2009
05_12_13J2	12	KENT 13	13J2	5 KV	SAUGUS	0,76	2009
05_12_13J3	12	KENT 13	13J3	5 KV	SAUGUS	7,532	2009
05_12_15J1	12	SALEM 15	15J1	5 KV	SALEM	4,975	2007
05_12_15J2	12	SALEM 15	15J2	5 KV	SALEM	3,132	2004
05_12_16J1	12	MAPLEWOOD 16	16J1	5 KV	MALDEN	1,522	2006
05_12_16J2	12	MAPLEWOOD 16	16J2	5 KV	MALDEN	1,067	2006
05_12_16J3	12	MAPLEWOOD 16	16J3	5 KV	MALDEN	0,933	2006
05_12_16J4	12	MAPLEWOOD 16	16J4	5 KV	MALDEN	1,681	2006
05_12_16J5	12	MAPLEWOOD 16	16J5	5 KV	MALDEN	3,654	2006
05_12_16W1	12	MAPLEWOOD 16	16W1	15 KV	SAUGUS	6,586	2004
05_12_16W2	12	MAPLEWOOD 16	16W2	15 KV	EVERETT	7,609	2006
05_12_16W3	12	MAPLEWOOD 16	16W3	15 KV	MALDEN	3,297	2005
05_12_16W4	12	MAPLEWOOD 16	16W4	15 KV	REVERE	4,855	2006
05_12_16W5	12	MAPLEWOOD 16	16W5	15 KV	EVERETT	2,709	2008

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05_12_17J1	05	12	WEST MEDFORD 17	17J1	5 KV	MEDFORD	0.624	2004
05_12_17J2	05	12	WEST MEDFORD 17	17J2	5 KV	MEDFORD	4.387	2009
05_12_17J3	05	12	WEST MEDFORD 17	17J3	5 KV	MEDFORD	5.141	2004
05_12_17J4	05	12	WEST MEDFORD 17	17J4	5 KV	MEDFORD	2.06	2004
05_12_17J5	05	12	WEST MEDFORD 17	17J5	5 KV	MEDFORD	4.029	2004
05_12_17J6	05	12	WEST MEDFORD 17	17J6	5 KV	MEDFORD	2.858	2004
05_12_18J1	05	12	NORTH BEVERLY 18	18J1	5 KV	BEVERLY	0.291	2008
05_12_18J2	05	12	NORTH BEVERLY 18	18J2	5 KV	BEVERLY	0.049	2010
05_12_18J3	05	12	NORTH BEVERLY 18	18J3	5 KV	BEVERLY	1.001	2010
05_12_18J4	05	12	NORTH BEVERLY 18	18J4	5 KV	BEVERLY	1.086	2010
05_12_18L1	05	12	NORTH BEVERLY 18	18L1	15 KV	WENHAM	7.582	2009
05_12_18L2	05	12	NORTH BEVERLY 18	18L2	15 KV	WENHAM	11.16	2005
05_12_19W1	05	12	TURNPIKE 19	19W1	15 KV	SAUGUS	9.055	2008
05_12_19W2	05	12	TURNPIKE 19	19W2	15 KV	SAUGUS	6.75	2010
05_12_1J1	05	12	SALEM 1 PEABODY ST	1J1	5 KV	SALEM	1.779	2008
05_12_1J10	05	12	SALEM 1 PEABODY ST	1J10	5 KV	SALEM	0.878	2008
05_12_1J12	05	12	SALEM 1 PEABODY ST	1J12	5 KV	SALEM	1.859	2008
05_12_1J15	05	12	SALEM 1 PEABODY ST	1J15	5 KV	SALEM	3.027	2008
05_12_1J3	05	12	SALEM 1 PEABODY ST	1J3	5 KV	SALEM	0.076	2008
05_12_1J5	05	12	SALEM 1 PEABODY ST	1J5	5 KV	SALEM	3.647	2008
05_12_1J6	05	12	SALEM 1 PEABODY ST	1J6	5 KV	SALEM	0.137	2008
05_12_1J7	05	12	SALEM 1 PEABODY ST	1J7	5 KV	SALEM	1.901	2008
05_12_1J901	05	12	HUMPHREY 1	1J901	5 KV	LYNN	0.891	2010
05_12_1J902	05	12	HUMPHREY 1	1J902	5 KV	SWAMPSCOTT	0.158	2010
05_12_1J903	05	12	HUMPHREY 1	1J903	5 KV	SWAMPSCOTT	0.355	2008
05_12_1J904	05	12	HUMPHREY 1	1J904	5 KV	SWAMPSCOTT	1.761	2010
05_12_21J21	05	12	LYNN 21	21J21	5 KV	LYNN	0.692	2006
05_12_21J23	05	12	LYNN 21	21J23	5 KV	LYNN	0.198	2007
05_12_21J24	05	12	LYNN 21	21J24	5 KV	LYNN	0.093	2007
05_12_21J25	05	12	LYNN 21	21J25	5 KV	LYNN	0.494	2007
05_12_21J27	05	12	LYNN 21	21J27	5 KV	LYNN	0.204	2007
05_12_21J28	05	12	LYNN 21	21J28	5 KV	LYNN	0.541	2007
05_12_21J29	05	12	LYNN 21	21J29	5 KV	LYNN	0.545	2007
05_12_21J30	05	12	LYNN 21	21J30	5 KV	LYNN	1.058	2007
05_12_21J32	05	12	LYNN 21	21J32	5 KV	LYNN	1.962	2006
05_12_21J33	05	12	LYNN 21	21J33	5 KV	LYNN	0.461	2007
05_12_21J34	05	12	LYNN 21	21J34	5 KV	LYNN	0.849	2007
05_12_21J37	05	12	LYNN 21	21J37	5 KV	LYNN	1.52	2007
05_12_21J41	05	12	LYNN 21	21J41	5 KV	LYNN	0.357	2007
05_12_22J1	05	12	WINTHROP 22	22J1	5 KV	WINTHROP	1.945	2006
05_12_22J2	05	12	WINTHROP 22	22J2	5 KV	WINTHROP	2.188	2006
05_12_22J3	05	12	WINTHROP 22	22J3	5 KV	WINTHROP	2.742	2006
05_12_22J4	05	12	WINTHROP 22	22J4	5 KV	WINTHROP	1.17	2006
05_12_22J5	05	12	WINTHROP 22	22J5	5 KV	REVERE	2.186	2006
05_12_22J6	05	12	WINTHROP 22	22J6	5 KV	WINTHROP	1.265	2006
05_12_22J7	05	12	WINTHROP 22	22J7	5 KV	WINTHROP	3.906	2006

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05_12_22W1	05	12	SWAMPSCOTT 22	22W1	15 KV SWAMPSCOTT	8.846	2004
05_12_22W2	05	12	SWAMPSCOTT 22	22W2	15 KV LYNN	7.563	2004
05_12_22W3	05	12	SWAMPSCOTT 22	22W3	15 KV SWAMPSCOTT	9.523	2008
05_12_23H1	05	12	MANCHESTER 23	23H1	5 KV MANCHESTER	0.077	2010
05_12_23H2	05	12	MANCHESTER 23	23H2	5 KV MANCHESTER	0.355	2010
05_12_23H3	05	12	MANCHESTER 23	23H3	5 KV MANCHESTER	1.618	2008
05_12_23H4	05	12	MANCHESTER 23	23H4	5 KV MANCHESTER	0.076	2010
05_12_23W1	05	12	SAUGUS 23	23W1	15 KV SAUGUS	5.77	2008
05_12_23W2	05	12	SAUGUS 23	23W2	15 KV SAUGUS	17.88	2007
05_12_24J1	05	12	GLOUCESTER 24	24J1	5 KV GLOUCESTER	1.704	2006
05_12_24J10	05	12	GLOUCESTER 24	24J10	5 KV GLOUCESTER	10.19	2006
05_12_24J11	05	12	GLOUCESTER 24	24J11	5 KV GLOUCESTER	3.96	2006
05_12_24J2	05	12	GLOUCESTER 24	24J2	5 KV GLOUCESTER	3.314	2006
05_12_24J4	05	12	GLOUCESTER 24	24J4	5 KV GLOUCESTER	0.388	2006
05_12_24J6	05	12	GLOUCESTER 24	24J6	5 KV GLOUCESTER	0.156	2006
05_12_24J7	05	12	GLOUCESTER 24	24J7	5 KV GLOUCESTER	0.629	2006
05_12_24J8	05	12	GLOUCESTER 24	24J8	5 KV GLOUCESTER	2.103	2006
05_12_24J9	05	12	GLOUCESTER 24	24J9	5 KV GLOUCESTER	1.778	2006
05_12_24W1	05	12	QUINN 24	24W1	15 KV LYNN	9.843	2006
05_12_24W2	05	12	QUINN 24	24W2	15 KV LYNN	9.535	2004
05_12_25W1	05	12	MELROSE 25	25W1	15 KV SAUGUS	10.147	2007
05_12_25W2	05	12	MELROSE 25	25W2	15 KV MELROSE	6.234	2005
05_12_25W3	05	12	MELROSE 25	25W3	15 KV SAUGUS	4.311	2007
05_12_26J1	05	12	TOPSFIELD 26	26J1	5 KV TOPSFIELD	11.858	2006
05_12_26J2	05	12	TOPSFIELD 26	26J2	5 KV TOPSFIELD	9.639	2006
05_12_26L1	05	12	TOPSFIELD 26	26L1	15 KV TOPSFIELD	27.923	2006
05_12_28J1	05	12	WEST GLOUCESTER 28	28J1	5 KV GLOUCESTER	3.92	2006
05_12_28J2	05	12	WEST GLOUCESTER 28	28J2	5 KV GLOUCESTER	6.655	2006
05_12_28L2	05	12	WEST GLOUCESTER 28	28L2	5 KV GLOUCESTER	15.01	2005
05_12_29W1	05	12	WEST SALEM 29	29W1	15 KV LYNN	18.364	2004
05_12_29W2	05	12	WEST SALEM 29	29W2	15 KV SALEM	11.811	2007
05_12_29W3	05	12	WEST SALEM 29	29W3	15 KV LYNN	13.402	2004
05_12_29W4	05	12	WEST SALEM 29	29W4	15 KV LYNN	10.222	2006
05_12_29W5	05	12	WEST SALEM 29	29W5	15 KV LYNN	7.273	2007
05_12_29W6	05	12	WEST SALEM 29	29W6	15 KV SALEM	5.392	2007
05_12_2J1	05	12	BURRILL 2	2J1	5 KV LYNN	1.213	2010
05_12_2J2	05	12	BURRILL 2	2J2	5 KV SWAMPSCOTT	1.097	2010
05_12_2W1	05	12	SALEM 2 VALLEY ST	2W1	15 KV SALEM	14.891	2005
05_12_2W2	05	12	SALEM 2 VALLEY ST	2W2	15 KV SALEM	1.571	2006
05_12_35J1	05	12	REVERE BEACH 35	35J1	5 KV REVERE	4.217	2008
05_12_35J2	05	12	REVERE BEACH 35	35J2	5 KV REVERE	5.031	2008
05_12_35J3	05	12	REVERE BEACH 35	35J3	5 KV REVERE	3.071	2008
05_12_35J4	05	12	REVERE BEACH 35	35J4	5 KV REVERE	2.76	2008
05_12_37J2	05	12	EVERETT 37	37J2	5 KV MALDEN	1.543	2007
05_12_37J4	05	12	EVERETT 37	37J4	5 KV MALDEN	2.657	2007
05_12_37W1	05	12	EVERETT 37	37W1	15 KV MEDFORD	5.276	2007

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05_12_37W2	05	12	EVERETT 37	37W2	15 KV	MEDFORD	3,698	2007
05_12_37W3	05	12	EVERETT 37	37W3	15 KV	MEDFORD	3,898	2010
05_12_37W4	05	12	EVERETT 37	37W4	15 KV	MEDFORD	11,584	2009
05_12_37W5	05	12	EVERETT 37	37W5	15 KV	MEDFORD	16,384	2008
05_12_37W6	05	12	EVERETT 37	37W6	15 KV	EVERETT	6,673	2010
05_12_37W7	05	12	EVERETT 37	37W7	15 KV	MALDEN	3,697	2007
05_12_3J1	05	12	SALEM 3 BOSTON ST	3J1	5 KV	SALEM	0,856	2008
05_12_3J2	05	12	SALEM 3 BOSTON ST	3J2	5 KV	SALEM	3,54	2008
05_12_3J3	05	12	SALEM 3 BOSTON ST	3J3	5 KV	SALEM	1,822	2008
05_12_3J4	05	12	SALEM 3 BOSTON ST	3J4	5 KV	SALEM	3,216	2008
05_12_3J6	05	12	SALEM 3 BOSTON ST	3J6	5 KV	SALEM	2,024	2008
05_12_3J901	05	12	FAYETTE 3	3J901	5 KV	LYNN	1,975	2007
05_12_3J903	05	12	FAYETTE 3	3J903	5 KV	LYNN	2,189	2007
05_12_40J1	05	12	ROCKPORT 40	40J1	5 KV	ROCKPORT	2,911	2007
05_12_40J2	05	12	ROCKPORT 40	40J2	5 KV	ROCKPORT	9,952	2006
05_12_40J3	05	12	ROCKPORT 40	40J3	5 KV	ROCKPORT	0,654	2007
05_12_40J4	05	12	ROCKPORT 40	40J4	5 KV	ROCKPORT	4,766	2007
05_12_40L1	05	12	ROCKPORT 40	40L1	15 KV	ROCKPORT	9,131	2007
05_12_4C1	05	12	MELROSE 4	4C1	5 KV	MALDEN	0,245	2007
05_12_4C5	05	12	MELROSE 4	4C5	5 KV	MELROSE	2,376	2007
05_12_4J2	05	12	WESTERN 4	4J2	5 KV	LYNN	1,486	2008
05_12_4J7	05	12	MELROSE 4	4J7	5 KV	MELROSE	3,984	2007
05_12_4J8	05	12	MELROSE 4	4J8	5 KV	MELROSE	1,943	2007
05_12_51L1	05	12	EAST BEVERLY 51	51L1	15 KV	BEVERLY	15,505	2008
05_12_51L2	05	12	EAST BEVERLY 51	51L2	15 KV	BEVERLY	12,931	2004
05_12_51L3	05	12	EAST BEVERLY 51	51L3	15 KV	HAMILTON	14,304	2007
05_12_51T1	05	12	EAST BEVERLY 51	51T1	5 KV	GLOUCESTER	29,496	2008
05_12_51T2	05	12	EAST BEVERLY 51	51T2	Unknown	HAMILTON	33,002	2005
05_12_52J1	05	12	RIVERDALE 52	52J1	5 KV	GLOUCESTER	0,359	2006
05_12_52J2	05	12	RIVERDALE 52	52J2	5 KV	GLOUCESTER	5,743	2006
05_12_52L1	05	12	RIVERDALE 52	52L1	5 KV	GLOUCESTER	22,72	2004
05_12_5C1	05	12	MALDEN 5	5C1	5 KV	MALDEN	1,104	2007
05_12_5C2	05	12	MALDEN 5	5C2	5 KV	MALDEN	0,817	2007
05_12_5C3	05	12	MALDEN 5	5C3	5 KV	MALDEN	2,489	2007
05_12_5C5	05	12	MALDEN 5	5C5	5 KV	MALDEN	1,921	2007
05_12_5C8	05	12	MALDEN 5	5C8	5 KV	MALDEN	1,756	2007
05_12_5C8	05	12	MALDEN 5	5C8	5 KV	MALDEN	1,756	2004
05_12_5J10	05	12	MALDEN 5	5J10	5 KV	MALDEN	0,922	2007
05_12_5J11	05	12	MALDEN 5	5J11	5 KV	MALDEN	0,267	2007
05_12_5J4	05	12	MALDEN 5	5J4	5 KV	MALDEN	0,128	2007
05_12_64J1	05	12	CODDING AVE 64	64J1	5 KV	MEDFORD	2,29	2006
05_12_64J2	05	12	CODDING AVE 64	64J2	5 KV	MEDFORD	1,83	2006
05_12_64J3	05	12	CODDING AVE 64	64J3	5 KV	MEDFORD	1,868	2006
05_12_64J4	05	12	CODDING AVE 64	64J4	5 KV	MEDFORD	3,696	2006
05_12_64J5	05	12	CODDING AVE 64	64J5	5 KV	MEDFORD	4,221	2006
05_12_67J1	05	12	PINE BANKS 67	67J1	5 KV	MALDEN	4,328	2005

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05_12_67J2	05	12	PINE BANKS 67	67J2	5 KV	MELROSE	4.067	2006
05_12_67J3	05	12	PINE BANKS 67	67J3	5 KV	MALDEN	2.491	2006
05_12_67J4	05	12	PINE BANKS 67	67J4	5 KV	MALDEN	3.185	2005
05_12_6C1	05	12	GLENDALE 6	6C1	5 KV	EVERETT	1.534	2006
05_12_6C3	05	12	GLENDALE 6	6C3	5 KV	EVERETT	1.545	2006
05_12_6C4	05	12	GLENDALE 6	6C4	5 KV	EVERETT	1.301	2006
05_12_6J1	05	12	BRIDGE 6	6J1	5 KV	LYNN	0.778	2008
05_12_6J2	05	12		6J2	5 KV	LYNN	1.678	2008
05_12_72L1	05	12	BALCH STREET 72	72L1	15 KV	BEVERLY	5.346	2010
05_12_79J1	05	12	NAHANT 79	79J1	5 KV	NAHANT	2.555	2007
05_12_79J2	05	12	NAHANT 79	79J2	5 KV	NAHANT	5.909	2007
05_12_7J1	05	12	REVERE 7	7J1	5 KV	REVERE	2.166	2010
05_12_7J2	05	12	REVERE 7	7J2	5 KV	REVERE	1.823	2009
05_12_7J3	05	12	REVERE 7	7J3	5 KV	REVERE	2.784	2008
05_12_7J4	05	12	REVERE 7	7J4	5 KV	REVERE	0.945	2009
05_12_7J6	05	12	REVERE 7	7J6	5 KV	REVERE	2.129	2010
05_12_7J7	05	12	REVERE 7	7J7	5 KV	REVERE	2.002	2010
05_12_7J901	05	12	HUDSON 7	7J901	5 KV	LYNN	3.391	2007
05_12_7J902	05	12	HUDSON 7	7J902	5 KV	LYNN	0.334	2007
05_12_7J904	05	12	HUDSON 7	7J904	5 KV	LYNN	1.099	2007
05_12_7W1	05	12	REVERE 7	7W1	15 KV	REVERE	2.677	2007
05_12_7W2	05	12	REVERE 7	7W2	15 KV	REVERE	8.726	2007
05_12_7W3	05	12	REVERE 7	7W3	15 KV	REVERE	4.423	2007
05_12_7W4	05	12	REVERE 7	7W4	15 KV	REVERE	9.558	2008
05_12_8J1	05	12	NORMAN STREET 8	8J1	5 KV	EVERETT	1.005	2010
05_12_8J2	05	12	VINE 8	8J2	5 KV	SAUGUS	2.255	2008
05_12_96W1	05	12	METCALF SQUARE 96	96W1	15 KV	WINTHROP	14.159	2004
05_12_9C1	05	12	MEDFORD 9	9C1	5 KV	MEDFORD	1.122	2006
05_12_9C2	05	12	MEDFORD 9	9C2	5 KV	MEDFORD	1.318	2006
05_12_9C3	05	12	MEDFORD 9	9C3	5 KV	MEDFORD	1.433	2006
05_12_9C4	05	12	MEDFORD 9	9C4	5 KV	MEDFORD	0.207	2006
05_12_9C5	05	12	MEDFORD 9	9C5	5 KV	MEDFORD	0.063	2006
05_12_9C6	05	12	MEDFORD 9	9C6	5 KV	MEDFORD	2.929	2006
05_12_9C7	05	12	MEDFORD 9	9C7	5 KV	MEDFORD	0.087	2006
05_12_9J1	05	12	TEDESCO 9	9J1	5 KV	SWAMPSCOTT	1.917	2008
05_12_9J2	05	12	TEDESCO 9	9J2	5 KV	SWAMPSCOTT	3.936	2008
05_12_1391	05	12		1391	15 KV	NAHANT	1.655	2007
05_14_11J1	05	14		11J1	5 KV	WILMINGTON	0.641	2008
05_14_1316AB	05	14		1316AB	15 KV	ANDOVER	2.769	2008
05_14_13J2	05	14	WORTHEN STREET 13	13J2	5 KV	LOWELL	2.492	2008
05_14_13J4	05	14	WORTHEN STREET 13	13J4	5 KV	LOWELL	0.215	2008
05_14_13J5	05	14	WORTHEN STREET 13	13J5	5 KV	LOWELL	1.448	2005
05_14_13J6	05	14	WORTHEN STREET 13	13J6	5 KV	LOWELL	1.855	2008
05_14_13L1	05	14	WORTHEN STREET 13	13L1	15 KV	LOWELL	1.17	2008
05_14_14J1	05	14	TEWKSBURY 14	14J1	5 KV	TEWKSBURY	0.007	2008
05_14_14J3	05	14	TEWKSBURY 14	14J3	5 KV	TEWKSBURY	0.044	2008

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05_14_14L1	14	TEWKSBURY 14	14L1	15 KV	TEWKSBURY	19,289	2006
05_14_14L2	14	TEWKSBURY 14	14L2	15 KV	TEWKSBURY	20,453	2008
05_14_14L3	14	TEWKSBURY 14	14L3	15 KV	TEWKSBURY	14,17	2004
05_14_16L1	14	MEADOWBROOK 16	16L1	15 KV	CHELMSFORD	3,765	2008
05_14_16L2	14	MEADOWBROOK 16	16L2	15 KV	LOWELL	3,821	2008
05_14_16L3	14	MEADOWBROOK 16	16L3	15 KV	LOWELL	14,775	2004
05_14_16L4	14	MEADOWBROOK 16	16L4	15 KV	CHELMSFORD	23,364	2005
05_14_18J1	14	SOUTH BILLERICA 18	18J1	5 KV	BILLERICA	0,716	2008
05_14_18L1	14	SOUTH BILLERICA 18	18L1	15 KV	BILLERICA	5,391	2004
05_14_18L2	14	SOUTH BILLERICA 18	18L2	15 KV	BILLERICA	5,896	2004
05_14_18L3	14	SOUTH BILLERICA 18	18L3	15 KV	BILLERICA	15,353	2004
05_14_1J1	14	LAWRENCE 1	1J1	5 KV	LAWRENCE	2,296	2008
05_14_1J2	14	LAWRENCE 1	1J2	5 KV	LAWRENCE	0,735	2008
05_14_1J4	14	LAWRENCE 1	1J4	5 KV	LAWRENCE	1,45	2007
05_14_1J5	14	LAWRENCE 1	1J5	5 KV	LAWRENCE	0,56	2008
05_14_1J6	14	LAWRENCE 1	1J6	5 KV	LAWRENCE	1,558	2008
05_14_1J7	14	LAWRENCE 1	1J7	5 KV	LAWRENCE	1,507	2008
05_14_1J8	14	LAWRENCE 1	1J8	5 KV	LAWRENCE	0,275	2008
05_14_1J9	14	LAWRENCE 1	1J9	5 KV	LAWRENCE	1,884	2008
05_14_211L1	14	TYNGSBORO 211	211L1	15 KV	TYNGSBOROUGH	13,192	2007
05_14_211L2	14	TYNGSBORO 211	211L2	15 KV	TYNGSBOROUGH	31,416	2006
05_14_21L1	14	HOOVER STREET 21	21L1	15 KV	DRACUT	14,746	2004
05_14_21L2	14	HOOVER STREET 21	21L2	15 KV	LOWELL	6,419	2008
05_14_21L3	14	HOOVER STREET 21	21L3	15 KV	LOWELL	7,748	2008
05_14_24L1	14	CONCORD ROAD 24	24L1	15 KV	CHELMSFORD	25,815	2005
05_14_24L2	14	CONCORD ROAD 24	24L2	15 KV	CHELMSFORD	24,225	2007
05_14_24L3	14	CONCORD ROAD 24	24L3	15 KV	CHELMSFORD	10,713	2006
05_14_2J4	14	LAWRENCE 2	2J4	5 KV	LAWRENCE	1,795	2008
05_14_2J8	14	LAWRENCE 2	2J8	5 KV	LAWRENCE	1,43	2008
05_14_2L1	14	NORTH CHELMSFORD 2	2L1	15 KV	CHELMSFORD	13,466	2007
05_14_2L2	14	NORTH CHELMSFORD 2	2L2	15 KV	LOWELL	8,566	2004
05_14_2L3	14	NORTH CHELMSFORD 2	2L3	15 KV	LOWELL	6,91	2004
05_14_2L4	14	NORTH CHELMSFORD 2	2L4	15 KV	CHELMSFORD	3,097	2006
05_14_31J3	14	WATER STREET 31	31J3	5 KV	HAVERHILL	2,701	2008
05_14_31J4	14	WATER STREET 31	31J4	5 KV	HAVERHILL	2,672	2008
05_14_31J5	14	WATER STREET 31	31J5	5 KV	HAVERHILL	0,304	2008
05_14_31J6	14	WATER STREET 31	31J6	5 KV	HAVERHILL	2,297	2008
05_14_31J7	14	WATER STREET 31	31J7	5 KV	HAVERHILL	3,685	2008
05_14_31J8	14	WATER STREET 31	31J8	5 KV	HAVERHILL	3,21	2008
05_14_32J1	14	WALNUT STREET 32	32J1	5 KV	HAVERHILL	1,979	2008
05_14_32J3	14	WALNUT STREET 32	32J3	5 KV	HAVERHILL	1,738	2008
05_14_32J5	14	WALNUT STREET 32	32J5	5 KV	HAVERHILL	1,189	2008
05_14_32J6	14	WALNUT STREET 32	32J6	5 KV	HAVERHILL	1,304	2008
05_14_32J8	14	WALNUT STREET 32	32J8	5 KV	HAVERHILL	0,025	2008
05_14_32J9	14	WALNUT STREET 32	32J9	5 KV	HAVERHILL	0,676	2008
05_14_33L1	14	EAST BOXFORD 33	33L1	15 KV	BOXFORD	23,023	2008

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05_14_33L2	14	EAST BOXFORD 33	33L2	15 KV	BOXFORD	17.765	2004
05_14_34M1	14	BYFIELD 34	34M1	5 KV	NEWBURY	4.827	2004
05_14_36J1	14	NEWBURYPORT 36	36J1	5 KV	NEWBURYPORT	0.458	2004
05_14_36J2	14	NEWBURYPORT 36	36J2	5 KV	NEWBURYPORT	2.635	2008
05_14_36J3	14	NEWBURYPORT 36	36J3	5 KV	NEWBURYPORT	2.576	2008
05_14_36J4	14	NEWBURYPORT 36	36J4	5 KV	NEWBURYPORT	0.98	2008
05_14_36J5	14	NEWBURYPORT 36	36J5	5 KV	NEWBURYPORT	0.116	2008
05_14_36J6	14	NEWBURYPORT 36	36J6	5 KV	NEWBURYPORT	7.231	2008
05_14_36L1	14	NEWBURYPORT 36	36L1	15 KV	NEWBURYPORT	51.865	2007
05_14_36L2	14	NEWBURYPORT 36	36L2	15 KV	NEWBURYPORT	27.912	2008
05_14_3J1	14	PERRY STREET 3	3J1	5 KV	LOWELL	0.067	2008
05_14_3J3	14	PERRY STREET 3	3J3	5 KV	LOWELL	0.061	2007
05_14_3J4	14	PERRY STREET 3	3J4	5 KV	LOWELL	1.358	2008
05_14_3J40	14	ANDOVER 3	3J40	5 KV	ANDOVER	1.135	2009
05_14_3J41	14	ANDOVER 3	3J41	5 KV	ANDOVER	2.979	2009
05_14_3J42	14	ANDOVER 3	3J42	5 KV	ANDOVER	1.568	2004
05_14_3J43	14	ANDOVER 3	3J43	5 KV	ANDOVER	0.504	2009
05_14_3J44	14	ANDOVER 3	3J44	5 KV	ANDOVER	2.552	2009
05_14_3J45	14	ANDOVER 3	3J45	5 KV	ANDOVER	3.886	2004
05_14_3J6	14	PERRY STREET 3	3J6	5 KV	LOWELL	1.159	2008
05_14_3J7	14	PERRY STREET 3	3J7	5 KV	LOWELL	2.292	2008
05_14_3L2	14	PERRY STREET 3	3L2	15 KV	LOWELL	12.02	2006
05_14_3L4	14	PERRY STREET 3	3L4	15 KV	LOWELL	14.166	2005
05_14_3L5	14	PERRY STREET 3	3L5	15 KV	LOWELL	11.934	2004
05_14_43L1	14	WARD HILL 43	43L1	15 KV	METHUEN	11.492	2004
05_14_43L2	14	WARD HILL 43	43L2	15 KV	HAVRHILL	12.227	2006
05_14_43L3	14	WARD HILL 43	43L3	15 KV	HAVRHILL	10.093	2004
05_14_43L4	14	WARD HILL 43	43L4	15 KV	HAVRHILL	8.203	2004
05_14_45J1	14	WEST AMESBURY 45	45J1	5 KV	AMESBURY	2.54	2008
05_14_46J1	14	BRADFORD 46	46J1	5 KV	HAVRHILL	2.357	2008
05_14_46J2	14	BRADFORD 46	46J2	5 KV	HAVRHILL	3.394	2008
05_14_47L1	14	WEST NEWBURY 47	47L1	15 KV	WEST NEWBURY	22.966	2006
05_14_47L2	14	WEST NEWBURY 47	47L2	15 KV	WEST NEWBURY	36.376	2007
05_14_48L1	14	NORTH HAVRHILL 48	48L1	15 KV	HAVRHILL	11.796	2006
05_14_48L2	14	NORTH HAVRHILL 48	48L2	15 KV	HAVRHILL	7.273	2005
05_14_48L3	14	NORTH HAVRHILL 48	48L3	15 KV	HAVRHILL	11.957	2005
05_14_50L1	14	BALLARDVALE 50	50L1	15 KV	ANDOVER	14.066	2006
05_14_50L2	14	BALLARDVALE 50	50L2	15 KV	ANDOVER	1.096	2004
05_14_50L3	14	BALLARDVALE 50	50L3	15 KV	ANDOVER	4.245	2004
05_14_53J1	14	LAWRENCE STREET 53	53J1	5 KV	LAWRENCE	1.924	2008
05_14_53J2	14	LAWRENCE STREET 53	53J2	5 KV	LAWRENCE	2.016	2008
05_14_53J3	14	LAWRENCE STREET 53	53J3	5 KV	LAWRENCE	1.495	2008
05_14_53J4	14	LAWRENCE STREET 53	53J4	5 KV	LAWRENCE	2.552	2008
05_14_53J5	14	LAWRENCE STREET 53	53J5	5 KV	LAWRENCE	0.758	2008
05_14_54L1	14	BURTT ROAD 54	54L1	15 KV	ANDOVER	1.674	2008
05_14_54L2	14	BURTT ROAD 54	54L2	Unknown	ANDOVER	0.206	2007

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05_14_54L3	14	BURTT ROAD 54	54L3	15 KV ANDOVER	29,325	2008
05_14_55L1	14	DALE STREET 55	55L1	15 KV NORTH ANDOVER	13,117	2006
05_14_55L2	14	DALE STREET 55	55L2	15 KV NORTH ANDOVER	1,776	2004
05_14_56L1	14	WOODCHUCK HILL	56L1	15 KV NORTH ANDOVER	14,65	2007
05_14_56L2	14	WOODCHUCK HILL	56L2	15 KV NORTH ANDOVER	25,268	2006
05_14_56L3	14	WOODCHUCK HILL	56L3	15 KV BOXFORD	32,815	2007
05_14_57L1	14	WESTFORD 57	57L1	15 KV WESTFORD	6,933	2009
05_14_57L2	14	WESTFORD 57	57L2	15 KV WESTFORD	24,473	2007
05_14_57L3	14	WESTFORD 57	57L3	15 KV WESTFORD	28,96	2006
05_14_58L1	14	BOSTON ROAD 58	58L1	15 KV WESTFORD	11,668	2008
05_14_58L2	14	BOSTON ROAD 58	58L2	15 KV CHELMSFORD	9,863	2007
05_14_58L3	14	BOSTON ROAD 58	58L3	15 KV WESTFORD	9,646	2008
05_14_59L1	14	EAST TEWKSBURY 59	59L1	15 KV ANDOVER	18,534	2008
05_14_59L2	14	EAST TEWKSBURY 59	59L2	15 KV TEWKSBURY	2,566	2008
05_14_59L3	14	EAST TEWKSBURY 59	59L3	15 KV TEWKSBURY	29,93	2006
05_14_59L4	14	EAST TEWKSBURY 59	59L4	15 KV TEWKSBURY	2,402	2008
05_14_59L5	14	EAST TEWKSBURY 59	59L5	15 KV TEWKSBURY	4,99	2008
05_14_59L6	14	EAST TEWKSBURY 59	59L6	15 KV ANDOVER	19,534	2006
05_14_5J1	14	BLOSSOM STREET 5	5J1	5 KV LOWELL	2,576	2004
05_14_5J11	14	AMESBURY 5	5J11	5 KV AMESBURY	5,716	2008
05_14_5J12	14	AMESBURY 5	5J12	5 KV AMESBURY	3,882	2009
05_14_5J13	14	AMESBURY 5	5J13	5 KV AMESBURY	4,303	2004
05_14_5J14	14	AMESBURY 5	5J14	5 KV AMESBURY	4,825	2004
05_14_5J15	14	AMESBURY 5	5J15	5 KV AMESBURY	2,612	2009
05_14_5J16	14	AMESBURY 5	5J16	5 KV AMESBURY	1,184	2009
05_14_5J2	14	BLOSSOM STREET 5	5J2	5 KV LOWELL	2,494	2008
05_14_5J3	14	BLOSSOM STREET 5	5J3	5 KV LOWELL	2,37	2009
05_14_5J4	14	BLOSSOM STREET 5	5J4	5 KV LOWELL	3,52	2009
05_14_5J40	14	METHUEN 5	5J40	5 KV METHUEN	2,897	2004
05_14_5J41	14	METHUEN 5	5J41	5 KV METHUEN	3,95	2008
05_14_5J42	14	METHUEN 5	5J42	5 KV METHUEN	2,141	2009
05_14_5J43	14	METHUEN 5	5J43	5 KV METHUEN	2,042	2008
05_14_5J44	14	METHUEN 5	5J44	5 KV METHUEN	1,325	2009
05_14_5J45	14	METHUEN 5	5J45	5 KV METHUEN	1,478	2009
05_14_5J5	14	BLOSSOM STREET 5	5J5	5 KV LOWELL	2,283	2008
05_14_60L1	14	NEWBURY 60	60L1	15 KV NEWBURY	25,795	2005
05_14_60L2	14	NEWBURY 60	60L2	15 KV NEWBURY	22,586	2006
05_14_60L3	14	NEWBURY 60	60L3	15 KV NEWBURYPORT	13,359	2009
05_14_60L4	14	NEWBURY 60	60L4	15 KV NEWBURYPORT	10,218	2008
05_14_61L1	14	SOUTH UNION ST 61	61L1	15 KV LAWRENCE	5,409	2008
05_14_61L2	14	SOUTH UNION ST 61	61L2	15 KV LAWRENCE	3,238	2008
05_14_61L3	14	SOUTH UNION ST 61	61L3	15 KV LAWRENCE	16,231	2005
05_14_62L2	14	RIVER ROAD 62	62L2	15 KV ANDOVER	12,614	2005
05_14_63L1	14	WEST METHUEN 63	63L1	15 KV METHUEN	14,867	2007
05_14_63L2	14	WEST METHUEN 63	63L2	15 KV METHUEN	11,755	2007
05_14_65L1	14	EAST BRADFORD 65	65L1	5 KV HAVERHILL	3,717	2005

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05_14_65L3	14	EAST BRADFORD 65	65L3	15 KV	HAVERHILL	11,858	2005	2007
05_14_66L1	14	HILLSIDE 66	66L1	15 KV	AMESBURY	21.96	2004	
05_14_66L2	14	HILLSIDE 66	66L2	15 KV	AMESBURY	17.22	2008	2009
05_14_69J1	14	IRON HORSE PARK	69J1	5 KV	BILLERICA	1.065	2009	
05_14_6J1	14	NORTH LAWRENCE 6	6J1	5 KV	LAWRENCE	1.133	2008	
05_14_6J2	14	NORTH LAWRENCE 6	6J2	5 KV	LAWRENCE	2.376	2008	
05_14_6J3	14	NORTH LAWRENCE 6	6J3	5 KV	LAWRENCE	1.277	2008	
05_14_6J4	14	NORTH LAWRENCE 6	6J4	5 KV	LAWRENCE	1.363	2008	
05_14_6J5	14	NORTH LAWRENCE 6	6J5	5 KV	LAWRENCE	2.213	2008	
05_14_6J6	14	NORTH LAWRENCE 6	6J6	5 KV	LAWRENCE	1.808	2008	
05_14_6J8	14	NORTH LAWRENCE 6	6J8	5 KV	LAWRENCE	1.498	2008	
05_14_70L1	14	BILLERICA 70	70L1	15 KV	BILLERICA	15.394	2005	
05_14_70L2	14	BILLERICA 70	70L2	15 KV	BILLERICA	7.432	2005	
05_14_70L3	14	BILLERICA 70	70L3	15 KV	BILLERICA	9.915	2007	
05_14_70L4	14	BILLERICA 70	70L4	15 KV	BILLERICA	8.748	2007	
05_14_70L5	14	BILLERICA 70	70L5	15 KV	BILLERICA	20.813	2008	
05_14_70L6	14	BILLERICA 70	70L6	15 KV	BILLERICA	27.141	2006	
05_14_70L8	14	BILLERICA 70	70L8	15 KV	TEWKSBURY	21.268	2007	2007
05_14_71L1	14	NORTH ANDOVER JCT:71	71L1	15 KV	NORTH ANDOVER	11.135	2004	
05_14_71L3	14	NORTH ANDOVER JCT:71	71L3	15 KV	NORTH ANDOVER	13.555	2006	
05_14_73L1	14	WEST CHELMSFORD 73	73L1	15 KV	CHELMSFORD	17.894	2006	2007
05_14_74L1	14	EAST METHUEN 74	74L1	15 KV	METHUEN	20.052	2006	
05_14_74L2	14	EAST METHUEN 74	74L2	15 KV	METHUEN	8.747	2007	
05_14_74L3	14	EAST METHUEN 74	74L3	15 KV	METHUEN	11.557	2008	
05_14_74L4	14	EAST METHUEN 74	74L4	15 KV	LAWRENCE	7.848	2008	
05_14_74L5	14	EAST METHUEN 74	74L5	15 KV	HAVERHILL	11.305	2005	
05_14_74L6	14	EAST METHUEN 74	74L6	15 KV	METHUEN	3.958	2008	
05_14_75L1	14	EAST DRACUT 75	75L1	15 KV	LOWELL	9.834	2007	
05_14_75L2	14	EAST DRACUT 75	75L2	15 KV	TEWKSBURY	9.767	2007	2008
05_14_75L3	14	EAST DRACUT 75	75L3	15 KV	DRACUT	22.897	2006	2008
05_14_75L6	14	EAST DRACUT 75	75L6	15 KV	METHUEN	11.502	2008	
05_14_76L1	14	WHITTIER 76	76L1	15 KV	HAVERHILL	21.286	2004	
05_14_76L3	14	WHITTIER 76	76L3	15 KV	HAVERHILL	10.445	2008	
05_14_77L1	14	BOULEVARD 77	77L1	15 KV	LOWELL	5.778	2008	
05_14_77L2	14	BOULEVARD 77	77L2	15 KV	LOWELL	3.508	2008	
05_14_77L3	14	BOULEVARD 77	77L3	15 KV	LOWELL	10.97	2008	2008
05_14_78L1	14	NORTH DRACUT 78	78L1	15 KV	DRACUT	23.53	2005	
05_14_78L3	14	NORTH DRACUT 78	78L3	15 KV	DRACUT	13.347	2006	
05_14_78L9	14	NORTH DRACUT 78	78L9	15 KV	DRACUT	13.981	2007	2008
05_14_7J1	14	NORTH ANDOVER 7	7J1	5 KV	NORTH ANDOVER	1.797	2008	
05_14_7J2	14	NORTH ANDOVER 7	7J2	5 KV	NORTH ANDOVER	1.682	2008	
05_14_7J3	14	NORTH ANDOVER 7	7J3	5 KV	NORTH ANDOVER	3.711	2008	
05_14_7L1	14	BEACH ROAD 7	7L1	15 KV	SALISBURY	10.526	2008	2008
05_14_7L2	14	BEACH ROAD 7	7L2	15 KV	SALISBURY	10.952	2008	
05_14_7L3	14	BEACH ROAD 7	7L3	15 KV	SALISBURY	18.554	2009	
05_14_8J1	14	CENTRALVILLE 8	8J1	5 KV	LOWELL	3.299	2008	

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05_14_8J2	14	CENTRALVILLE 8	8J2	5 KV	LOWELL	0.774	2008
05_14_8J3	14	CENTRALVILLE 8	8J3	5 KV	DRACUT	2.787	2008
05_14_8J4	14	CENTRALVILLE 8	8J4	5 KV	LOWELL	0.026	2008
05_14_8L1	14	WEST ANDOVER 8	8L1	15 KV	ANDOVER	8.453	2005
05_14_8L2	14	WEST ANDOVER 8	8L2	15 KV	LAWRENCE	9.463	2005
05_14_8L3	14	WEST ANDOVER 8	8L3	15 KV	LAWRENCE	2.198	2007
05_14_8T1	14	WEST ANDOVER 8	8T1	Unknown	ANDOVER	2.56	2008
05_14_8T2	14	WEST ANDOVER 8	8T2	Unknown	ANDOVER	1.609	2008
05_14_92L1	14	PINEHURST 92	92L1	15 KV	BILLERICA	11.724	2005
05_14_92L2	14	PINEHURST 92	92L2	15 KV	BILLERICA	13.027	2006
05_14_92L3	14	PINEHURST 92	92L3	15 KV	BILLERICA	8.936	2007
05_14_92L4	14	PINEHURST 92	92L4	15 KV	BILLERICA	6.003	2007
05_14_92L6	14	PINEHURST 92	92L6	15 KV	BILLERICA	17.471	2006
05_14_9J1	14	CHELMSFORD 9	9J1	5 KV	CHELMSFORD	5.98	2008
05_14_9J2	14	CHELMSFORD 9	9J2	5 KV	CHELMSFORD	1.147	2008
05_14_9J3	14	CHELMSFORD 9	9J3	5 KV	CHELMSFORD	3.273	2008



NE DISTRIBUTION LINE CLEARANCE SPECIFICATIONS

Updated 12/18/07

I. Scope/Intent

1.1 These specifications cover the cutting, clearing, pruning, tree removal and herbicide treatment of vegetation along overhead electric distribution lines and the corresponding substations. The intent is to define the minimum clearances to be obtained between the overhead conductors and vegetation that will be acceptable to National Grid. These specifications are strictly for use on overhead line maintenance pruning projects. This is not a specification to be used for enhanced hazard tree removal, new construction clearing or rebuild construction clearing.

II. Program Objectives:

2.1 The goals and objectives of the NGRID Distribution Line Clearance program are to provide safe, reliable, electric service through a cost effective, integrated vegetation management program. NGRID acknowledges differences in the manner in which various landowners respond to the need for routine line clearance activities, together with occasional differences in easement rights. Therefore, these specifications are designed to address:

- the minimum clearance requirements necessary to sustain safe, reliable electric service while striving to satisfy the concerns of sensitive customers,
- and the optimum clearance requirements necessary to sustain an appropriate level of safety and reliability.

III. Definitions:

Maintained Area: Generally defined as an area where the landowner or occupant is mowing the lawn and/or caring for gardens, ornamental shrubs or trees in the area under and immediately adjacent to the distribution poles. It includes commercial land uses such as business areas, parking lot edges and the tree lawn areas along urban and suburban streets. Un-maintained areas, of course, hold the opposite of these characteristics. It should be noted that within residential (maintained) areas there may be small sections of un-maintained property between yards or along the roadside of residential front lawns, etc. These small sections shall be treated as maintained areas for the purposes of this specification.

Mature Tree Line: A generally straight and contiguous line of trees nine (9) inches d.b.h. or greater, that mark the boundary between the forested edge and the maintenance corridor. In the case of an existing mature tree line, there may be individual mature trees that are rooted closer to the pole centerline than the common mature tree line. In these instances the mature tree line continues behind those individual trees.

Maintenance Corridor: The area physically located under and alongside the overhead distribution feeder bounded by the mature tree line when one exists. In the absence of a mature tree line the maintenance corridor is defined as the area that is at least ten (10)

feet either side of the pole centerline or equal to the previously maintained dimensions if greater than ten (10) feet.

Service Drop or Service Line: The last span of triplex or open three wire extending to the building or meter pole or a multi-span run of either triplex or open three wire that serves a single customer. This does not include street light services.

Secondary: The conductor, either triplex or open wire, which extends from the transformer to the Service Drop. Secondary spans may run along under primary spans or separately.

Street Light Secondary: The conductor, either triplex or open wire, which leaves the primary pole to pole configuration and extends out to service a street light or lights.

IV. Scope of Work:

- 4.1 Pruning Standards: All pruning shall be performed in accordance with ANSI A300 standards as well as the Best Management Practices – Tree Pruning publication. All cuts shall be made at a parent branch or limb, so that no stub shall remain. In cutting back a branch, the cut shall be made at a crotch or node where the branch being removed is at least one-third the diameter of the parent limb. All pruning cuts shall be made in accordance with proper collar cutting methods, utilizing drop crotch principles to minimize the number of pruning cuts, promote natural growth patterns, and maintain tree health and vigor (ANSI A300). Climbing irons or spurs shall not be used in pruning a shade/ornamental tree to be saved. Tree wound dressings shall not be applied.
- 4.2 Line Clearance within Maintained Areas: All overhead primary lines shall be pruned to provide a minimum of ten (10) feet of overhead clearance, a minimum of six (6) feet of side clearance from the outermost phase ~~or ten (10) feet from the pole centerline (whichever is greater)~~, and a minimum of ten (10) feet of clearance below the wires. The contractor shall recognize that the use of ANSI A300 standards and techniques will result in clearances beyond the dimensions noted above.
 - 4.2.1 The main trunk of the tree or major leads which are structurally sound and healthy may be left growing within these distances as long as none of the smaller diameter end branches are within the clearance dimensions. In that case the lead must be removed.
 - 4.2.2 Where greater clearances have been achieved in previous cycles, the pruning shall be completed so as to re-establish the clearances in a manner that equals or exceeds the previous clearance conditions.
 - 4.2.3 The contractor shall ground cut any new volunteer growth capable of growing into the wires from around poles, guys, fences, etc. within the maintained yard areas after notifying the property owner.
 - 4.2.4 It is an objective of National Grid's program to continually strive to reduce the number of under-wire tree and branch growth that will continually require pruning, by removing as many stems and growth as possible on each cycle. The Contractor is expected to emphasize this type of removal through the landowner contacts made by their customer contact personnel.

- 4.2.5 All slash from pruning in maintained areas shall be disposed of through chipping. Large diameter wood may remain on site provided it is cut into manageable lengths and piled neatly. Smaller debris shall be raked up and removed so as to leave the property in a condition equal to the start of work.
- 4.3 Line Clearance Outside of Maintained Areas: All overhead lines shall be pruned to provide a minimum of fifteen (15) feet of overhead clearance and six (6) feet of side clearance from the outermost phase. ~~or ten (10) feet from the centerline (whichever is greater).~~
- 4.3.1 Where greater clearances have been achieved in previous cycles, the pruning shall be completed so as to re-establish the clearances in a manner that equals or exceeds the previous clearance conditions.
- 4.3.2 The contractor shall ground cut all trees and shrubs which have the ability to interfere with the conductor out to the limits of the existing maintenance corridor. Where a maintenance corridor does not already exist, ground cutting shall be performed for a minimum distance of ten (10) feet either side of centerline. Ground cutting shall include stems of eight (8) inches d.b.h. or less, all as part of the fixed price bid. Along individual spans that have been previously maintained using National Grid's past eight (8) foot targeted ground cutting specification (trimming and removal) the same approach shall be utilized.
- 4.3.3 Along off-road sections the contractor shall completely remove all side branches that extend into the maintenance corridor from below and beside the lines in order to "box out" the maintenance corridor. This practice will minimize future pruning efforts as well as improve storm restoration and line inspection efficiencies.
- 4.3.4 Where trees beyond the limits of the maintenance corridor are extending into the corridor, the contractor shall either prune those limbs back or have the option to remove the tree as part of the fixed price bid. For trees, eight (8) inches d.b.h. or less, where the top of the tree is leaning out into the corridor so that topping would be the only possible correction, the contractor shall ground cut that tree as part of the fixed price bid.
- 4.3.5 Stumps shall be cut flat and as close to grade as possible.
- 4.3.6 All slash along the roadway or near residences shall be disposed of by chipping or mowing/mulching. Where practical, chips may be blown back onto the site without creating large chip piles. On off-road, unmaintained sites, slash shall be mowed/mulched or neatly windrowed to the edge of the maintenance corridor and cut to lie close to the ground, away from sensitive locations. No debris shall be left anywhere that will potentially block access, significantly alter any drainage or water resource, or create any unsafe conditions for the public. Alternatives to these practices must be approved by National Grid's Forestry representative and by the current landowner.
- 4.4 All dead or damaged overhead limbs, branches or leads that are capable of falling onto overhead primary wires from above or along side the right-of-way and potentially causing a tree outage, shall be removed at the time of pruning, and included in the fixed price bid.

- 4.5 For all pine species growing above the overhead clearance limits with boughs overhanging primary conductor - the contractor shall shorten all overhanging boughs so to reduce the length of the branch by approximately 1/3 without removing all needle growth from the entire branch. This shall be done in a progressive manner beginning at the upper clearance dimension (10 or 15 feet) and working upwards generally two (2) whorls in the tree as necessary to reduce the likelihood of a long pine bough loaded with ice or wet snow, drooping down or breaking onto the conductors.
- 4.6 Pruning Clearance for Secondary and Service Lines:
- 4.6.1 All secondary wire (triplex and open wire), other than that serving street lights only, shall be pruned to provide a minimum of eighteen inches of clearance from wire to vegetation.
- 4.6.2 All service wires (triplex or open wire) and street light secondary on the circuit shall be inspected during the pruning process. For branches that are either making hard contact with the service wire, pushing on or creating tension enough to force the wire out of a natural arc, or redirecting the wire out of a straight line run, the vendor shall do whatever pruning is necessary to correct that situation. The entire service drop need not be pruned, only the point of conflict.
- 4.6.3 For open wire services, pruning is required for all the situations noted in 4.6.2 as well as anytime vegetative growth is forcing the three wires out of their normal configuration. The vendor must take extra care when pruning around open wire services so not to cause a service interruption to our customers.
- 4.7 Multiple Circuits and Under-builds: The contractor shall prune all distribution circuits on a pole unless otherwise called out on the bid documents. Where a distribution circuit is under-built below either a sub-transmission or transmission line the contractor is not responsible for the pruning of that portion of the circuit unless otherwise directed in the bid documents. However, the contractor is responsible for work on any primary, secondary or service tap running off the sub-transmission or transmission pole line as long as the bid circuit is under-built. Any exceptions to the above will be explained at the time of bidding.
- 4.8 Circuits along Transmission Rights-of-Way: The contractor shall employ this specification on all sections of distribution circuits that run along segments of transmission rights-of-way except for areas where the distribution circuit is actually under-built on the same pole. In those cases the above section will apply. Any exceptions to the above will be explained at the time of bidding.
- 4.9 Substation Clearances: All vegetation within 10' of the substation fence shall be pruned, from ground to sky, removed and chipped and no overhanging branches shall be allowed to remain. Where shrubs and trees have been planted for screening purposes and are rooted within the 10' distance, only the fence side branches shall be removed. Any volunteer growth (natural regeneration) rooted within the 10' distance shall be removed.
- 4.10 Vine Control: All vines growing on poles, guy wires, stub poles or towers shall be cut so as to create a "growth gap" of 2 feet and treated (where appropriate) with a

herbicide approved by the company.. Contactors should not attempt to remove vines from any structure.

- 4.11 Hazard Tree Inspection and Removal: Other than work required in previous sections, the removal of any tree over 8 inches d.b.h. within the maintenance corridor or outside the maintenance corridor shall be considered a hazard tree removal and is outside the fixed price bid.
- 4.11.1 While pruning the circuit, the contractor's personnel shall perform a visual inspection of each tree along the circuit in order to identify potential defects and determine the potential risk for the tree to cause an interruption over the length of the pruning cycle. The crew shall work closely with National Grid Forestry representative to determine potential hazard trees, preparing a list of trees in accordance with National Grid's Hazard Tree Reporting Form. The completed lists of potential hazard trees shall be regularly provided to the Forestry representative for review and approval prior to removing any of those specific trees. Exceptions to this procedure may be approved to enable removals of trees that have been pre-identified as hazard trees by National Grid representatives, trees that pose an imminent risk, or to authorize hazard tree removals in off-road areas where a skidder bucket is already on site.
- 4.11.2 Once a crew completes the removals on an approved list they shall note the completion details on the Hazard Tree Reporting Form. This form shall be submitted to the Forestry representative on a timely basis. Once the list is audited the contractor may submit an invoice for that specific work.

V. Contractor Requirements

- 5.1 The Contractor shall do all work and furnish all labor including supervision, tools, machinery and transportation necessary for the pruning, removal and herbicide treatment of trees to provide acceptable vegetation clearance for overhead lines of National Grid. Work at the fixed price rates will be designated on the distribution circuit maps, and identified in the pre-bid documents. Work at the fixed price is based on overhead primary miles of line, and includes pruning, tree and lead removal and herbicide treatment to all primary, secondary, service drops, and substation fence areas as clarified in the Work Scope section of this specification. Work at unit prices and/or hourly rates as also defined in the Work Scope section will be designated at the pre-bid meeting or by a National Grid Forestry representative as required.

VI. Contractor's Responsibility

- 6.1 The Contractor shall provide all necessary supervision, labor, material, tools and equipment for the safe execution of all work covered by these specifications.
- 6.2 The Contractor shall employ a competent field supervisor and customer contact person(s) acceptable to the Corporation, in addition to the crew Foreman and senior Company management. The supervisor shall be available to the

Corporation at all reasonable times during the entire extent of the project and/or contract. In addition, at least one member of each stand-alone crew or unit of crews shall be fluent in the English language.

- 6.3 The Contractor shall comply with all building and sanitary laws and all Federal, State, County, Town and Municipal laws, ordinances and regulations pertaining to the work. The contractor shall be responsible for obtaining all permits necessary to perform the work unless otherwise provided by National Grid
- 6.4 The Contractor shall notify each landowner and inform them of the clearing, removal, pruning and herbicide work to be done, and where appropriate, agree on access point(s), before crossing the property and then abide by the same. The Contractor shall designate a Customer Contact Person(s) for each project they are awarded and communicate that name and phone contact information for that person to the National Grid forestry representative for that project.
- 6.5 In the event that the Contractor cannot locate the landowner after using all reasonable measures, or upon locating them is aware of an objection to the work to be performed, the Contractor shall document the landowners concern and then notify the National Grid's forestry representative in a timely fashion in order to obtain specific instructions and/or their permission prior to commencing work on that property.
- 6.6 In addition to the above notifications, where herbicide applications will be made, the Contractor must follow any and all current notification requirements of any applicable regulations.
- 6.7 The Contractor shall be held solely liable and indemnify National Grid fully for any and all claims and legal expenses for damage to crops, land, trees or otherwise resulting from such violations, failure or damages arising out of the Contractor's negligence. The Contractor shall not be liable for claims or suits for damage to property if the work causing such damage is done under specific direction from NGRID.
- 6.8 The Contractor shall replace or make necessary repairs to all property destroyed or damaged in the course of the work and exercise due care and diligence in adequately protecting all properties, both real and personal, from damage of whatsoever nature whenever crossed over, on, or in the vicinity of the work. If the contractor neglects or fails to promptly make said repairs or make good of said destruction, the Corporation may make any and all necessary repairs to the satisfaction of the property owner and the Contractor agrees to promptly reimburse the Corporation the amount of its incurred cost and expenses.
- 6.9 The contractor shall inform the National Grid Forestry representative of their intent to start work at least two weeks prior to the start of any action on a feeder.
- 6.10 The Contractor shall implement and provide the required training and certification programs necessary to provide fully qualified Line Clearance Tree Trimmers or Line Clearance Tree Trimmer Trainees. A single Foreman may supervise multiple bucket trucks on the same project. In that case however, the minimum qualifications for the "lead" person on each of the other trucks shall be a certified

qualified Line Clearance Tree Trimmer. At least one other employee on the truck shall be at least a qualifying Line Clearance Tree Trimmer Trainee, in accordance with all applicable OSHA requirements.

- 6.11 The Contractor shall submit a weekly time report to the National Grid Forestry representative, indicating the labor and equipment assigned to the project, amount of work accomplished, quantities and location of herbicide applications and location of the work.
- 6.14 The Contractor shall provide a monthly summary report to Distribution Forestry, identifying crew staffing and equipment by area as of the first of each month, to be submitted by the 5th of each month or the following Monday should the 5th fall on the weekend. The report shall also identify work type (e.g., such as hourly, new construction, danger trees, mowing; lump sum or unit price) by project, percentage complete for all fixed price projects, and anticipated completion dates.
- 6.15 The Contractor shall provide a monthly OSHA injury summary report in a format supplied by National Grid for the previous month, no later than the 10th of the month or the following Monday should the 10th fall on the weekend. The data in the report shall be separated by state as well as reported for the overall Contractor Company for any and all United States operations.
- 6.16 By April 10th of each year, the contractor shall provide a list of employees that could reasonably be expected to work on National Grid's property to Distribution Forestry. This listing shall include:
- identify the current pay classification of each employee, together with their union certification level,
 - the date of their progression to their current pay level,
 - the dates each employee completed their required OSHA safety and other training, or retraining, including any annual refreshers,
 - the date each employee last demonstrated their tree rescue and climbing proficiency
 - the date each employee completed first aid and CPR training,
 - identify each certified pesticide applicator and their certification number.
- 6.17 The contractor shall provide a unit cost per tree for the removal of potential hazard trees from the three phase portions of the circuit, as well as "high risk target" hazard trees from the single-phase portions. See the attached Addendum # 1, Hazard Tree Tree Removal, Unit Price Schedule to be bid separately from the fixed price project. National Grid reserves the right to award, in whole or in part, the removal of hazard trees for each bid package on the basis of these unit price costs, or to do the work at the contractor's current hourly rates.

VII. Acceptance of Work

- 7.1 At appropriate intervals, the Contractor shall report and review the work completed to date with National Grid's Forestry representative. The Contractor may then invoice for the percentage of the work completed and approved by National Grid.

- 7.2 Near completion of the work, the Contractor shall notify the National Grid Forestry representative that the entire project has been reviewed by the contractor's supervision and is now ready for inspection. Upon review and acceptance of all required work including the resolution of any and all required corrective actions as well as any outstanding damage claims, the NGRID Forestry representative will give the Contractor permission to submit a final invoice for payment.
- 7.3 The contractor shall understand, per their signed Master Purchase order with NGRID that time is of the essence with respect to the performance of this work. The contractor shall take all appropriate actions necessary to complete the work on schedule. Those actions shall include among other things, the use of overtime, the use of supplemental labor crew resources from outside areas, and the use of subcontractors, notwithstanding the NGRID requirement for advanced approval of all subcontractors. All actions employed by the contractor to meet schedules are at their cost and shall not affect the lump sum contract amount. In the event of extenuating circumstances defined by NGRID, the company reserves the right to extend project completion dates.

Addendum #1
Hazard Tree Removal

Unit Price Category Definitions:

Removal-Maintained Area: Normally within city town or village settings in areas where lawn and ornamental tree and shrub care is evident. The contractor will safely fell the tree, limb and chip all brush and flush the stump as low as is practical. The wood will be cut to manageable lengths and yard cleanup performed.

Removal-Roadside Area: Normally, outside of any maintained areas as described above. The contractor will safely fell the tree, limb and chip all brush, flush the stump as low as is practical, and leave the wood to lie where it is felled. Minimal cutting should be required other than to allow the wood to lie flat against the ground.

Removal-Unmaintained Area: Outside of any maintained area along a wooded roadside or off-road section of line. The contractor will safely fell the tree and make the necessary cuts on the tree to have the wood and brush lie relatively flat against the ground (drop and lop).

Unit Price Schedule

<u>Diameter Class</u>	Removal-Maintained	Removal-Roadside	Removal-Unmaintained
8 inches or less	<u>Lump Sum</u>	<u>Lump Sum</u>	<u>Lump Sum</u>
>9 – 12 inches	_____	_____	_____
>13 – 18 inches	_____	_____	_____
>19 – 24 inches	_____	_____	_____
>25 and up inches	<u>T&M</u>	<u>T&M</u>	<u>T&M</u>

Note: For hazard trees that have been removed and the D.B.H. cannot be determined, NGRID will deduct 2 inches from the average stump diameter to determine payable size.

Complete removal of wood will be performed on a T&M basis.

Removals above 24 inches D.B.H. shall be performed on a T&M basis.

Unit prices will be bid separately from the lump sum bids. National Grid reserves the right, when awarding fixed price pruning projects, to add an estimated price for hazard trees removals based on the prices submitted on this form for removal, and award the total project based on the sum of both prices.

Revision Date: 12/18/07

Addendum #2
**National Grid Distribution Forestry
Herbicide Application Procedure**

In order to ensure consistent herbicide applications the following procedure and expectations will apply to all tree crews working on distribution line clearance work **at National Grid-Rhode Island**

The ability to control brush growth on our distribution system is a critical part of achieving our overall line clearance cyclic program objectives. It is important to understand that appropriate herbicide application will benefit National Grid's service reliability by significantly reducing the amount of re-sprouting that occurs after ground cutting is performed. As professional pesticide applicators, the contractor has an obligation to be educated, prepared and conduct themselves in a professional manner to achieve successful applications on line clearance projects.

- All crews and/or notification personnel will have clean copies of all appropriate notification materials such as labels, MSDS sheets.
- Application logs are to be maintained and available for field review. Copies must accompany the weekly time sheets submitted to the Company. If a customer rejects the use of herbicide it should be noted on the customer log.
- All crews engaging in ground cutting must apply a stump treatment application at the time of cutting. Cutters should carry an applicator bottle on them to ensure a thorough and timely application.
- The primary stump treat product will be Pathway. During periods of frozen ground the vendor shall switch to a Garlon 4/Stalker mix. Finally, the vendor shall also have a glyphosate stump treatment product available on the project for usage in wet areas or other sensitive sites. Equivalent substitutes are acceptable with the approval of the National Grid Forestry Representative.
- Mowed areas are exempt from a stump treatment application; however, these areas will receive an aggressive follow-up foliar application. Stems cut by hand as part of the mowing process shall be stump treated. Cut stubble treatments are also acceptable.
- Herbicide notifications should be incorporated into the general customer notification for pruning and ground cutting. Notification personnel must be knowledgeable of the products being used and present the use of herbicide in a positive, professional and proactive manner. Taking time to fully explain the application technique and product will produce results.
- If a customer refuses an application and there is a significant amount of brush to control you must notify the National Grid Forestry representative prior to proceeding with the work.
- If an inspection or audit occurs you must notify the National Grid Forestry representative immediately.
- Any operations found to be out of compliance will be shut down and payment held until issues are corrected.

Stump treatment is a low profile, customer compatible, target specific technique that ensures effective brush control. A thorough stump treatment also makes the follow-up foliar job easier and more effective.

Revision Date: 12/18/07

Prepared and Submitted by National Grid

Five Year Right-of-Way Vegetation Management Plan 2004-2008



The core functions of National Grid's U.S. transmission business have achieved ISO 14001 registration of their Environmental Management System.

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I. Introduction

The purpose of this Vegetation Management Plan is to outline the National Grid USA companies (hereafter referred to as National Grid) five year plan for managing vegetation in compliance with 333 CMR 11.00 (Appendix 1). National Grid manages approximately 18,000 acres and 15,000 miles of rights-of-way within the Commonwealth of Massachusetts. National Grid USA companies owning rights-of-way in Massachusetts include Massachusetts Electric Company, New England Power Company and New England Hydro Transmission Electric Company. Included with this VMP are the former Eastern Utilities Associates companies rights-of-way. National Grid owns and maintains rights-of-way in municipalities listed in Appendix 5.

Vegetation management is necessary to insure reliable delivery of electric service through transmission and distribution lines located on rights-of-way. Tall growing tree species must be prevented from growing into or falling onto the lines. National Grid is required by the New England Power Pool (NEPOOL) to comply with the NEPOOL Vegetation Management Standard see Appendix 2. Woody vegetation must also be controlled where it may inhibit access along the right-of-way or around line structures or equipment. Physical and visual access is important to provide for inspection, maintenance and repair of the lines.

National Grid rights-of-way extend from the western border of the Commonwealth through Worcester County, the Merrimack Valley, the North Shore, the South Shore area, the Brockton area, the Fall River area and down through the Attleboro area to Somerset. These rights-of-way traverse all types of the diverse terrain found throughout Massachusetts. This terrain ranges from steep mountainous topography to rolling hills to level lowlands. In terms of population

centers, rights-of-way are also located in a wide range of sites from remote, relatively inaccessible locations right through to high density population centers.

II. General Statement of Goals and Objectives of the VMP

The goal of this document is to set forth the five year vegetation management plan for Massachusetts Electric Company, New England Power Company and New England Hydro Transmission Electric Company, which are operating companies of National Grid within the Commonwealth of Massachusetts. This plan will outline the standard operating procedures for all vegetation management operations within National Grid rights-of-way.

The purpose of this plan is to document National Grid's Integrated Pest Management Programs' standards, practices and procedures, which are designed to control undesirable vegetation on rights-of-way. Our experience with the VMP process has seen a decrease in amount of material used thus minimizing the risk to human health and the environment. This document is intended to provide a basic source of information for state and municipal officials and any interested parties regarding National Grid's vegetation management program. This document is further designed to provide overall guidance for the applicators contracted by National Grid to physically accomplish the vegetation management program. National Grid's vegetation management goals and objectives are as follows:

- To utilize an integrated pest management program designed to maximize control of undesirable vegetation while minimizing the use of herbicides through their judicious use.

- Judicious use of herbicides may include no use of herbicides through exclusion or the encouragement of alternate land uses, use of only certain herbicides, and/or the use of only certain application techniques;
- To maintain an optimum maintenance cycle for all rights-of-way of three to five years. (One treatment cycle includes several treatment methods.);
 - To insure that all vegetation management operations are conducted in a safe, effective manner and in conformity with Federal and State laws, regulations, and permit conditions;
 - That rights-of-way shall be maintained to their full cleared width, including the removal of trees or limbs adjacent to the right-of-way which endanger the line;
 - Wherever practical, to cooperate with owners of land, which the rights-of-way cross, to facilitate alternative land uses by the landowner that may negate the need for vegetation management by National Grid;
 - To remove or control all undesirable woody vegetation within the cleared width of the right-of-way and around the perimeter of substations;
 - To maintain visual buffers at visually sensitive sites;
 - To maintain protective buffers at environmentally sensitive sites;
 - At a minimum, to treat all public or private drinking water supplies, surface waters, wetlands, inhabited areas, and agricultural areas as sensitive sites that require special consideration during vegetation management operations;
 - To use selective herbicide treatments as the preferred method of vegetation management, which will encourage biological control through competition from desirable plant species;

- To hand cut or mow in order to protect environmentally sensitive sites and otherwise where herbicide use is not permitted;
- To retain appropriately certified and qualified contractors to implement National Grid's vegetation management programs.
- To use professional Arborists and Foresters to coordinate contractor treatment crews and enforce National Grid's vegetation management policy and practices;
- To have National Grid's representative respond quickly to any questions or complaints from the public and/or governmental agencies that relate to right-of-way vegetation management; and
- To perform an annual review of National Grid's vegetation management program to assess treatment and cost effectiveness, environmental effects, public safety and compliance with regulations.

III. Identification of Target Vegetation

All tree species within the cleared width of the right-of-way that are capable of growing tall enough to interfere with the operation of the electric lines will be removed or controlled during the treatment operation. Generally, tree species are defined as woody plants that mature at heights exceeding fifteen feet. These trees must be removed because they are capable of growing tall enough to grow into or fall onto the lines causing electric service outages. In rare isolated instances, the electric lines are high enough off the ground so that mature trees will not interfere with the operation of the line. In these instances, trees will be left. Tree species include, but are not limited to, maples, oaks, ash, cherries, birches, pines and poplar.

All woody vegetation (trees, shrubs and vines) on or encroaching upon existing roads or pathways or immediately adjacent to line structures or equipment will be controlled to provide adequate access along the right-of-way and to structures and equipment. If no access along the right-of-way exists, a pathway may be created and maintained in a suitable location by treating all woody vegetation within the selected route. Woody vegetation must be removed in these areas to insure access to and along the right-of-way and line structures for safe, efficient inspection, maintenance and repair operations. Woody plant species to be controlled include all tree species previously identified plus shrub and vine species that include, but are not limited to, viburnums, mountain laurel, bush honeysuckle, grape vines, Virginia creeper, bittersweet, etc.

Certain woody plant species that pose a safety problem will be removed whenever practical. These are plants that have heavy thorn growth or dermal toxicity and may create a hazardous environment to people working on or traversing the right-of-way. Examples of these plant species include, but are not limited to, poison ivy, multiflora rose, greenbriar, and hawthorne.

All target vegetation will be identified visually, by experienced contractor treatment crews.

IV. Methods Of Vegetation Management And Rationale For Their Use

National Grid utilizes six methods of vegetation management on their rights-of-way: hand cutting, mowing, foliar treatments, low volume basal treatments, cut stump treatments and selective pruning.

Treatment methods are selected based on target vegetation height and density, site sensitivity, site access and topography.

A. Hand Cutting

Hand cutting consists of the mechanical cutting of target species using chain saws. Target species are cut as close to the ground as practical. Slash from the operation is cut and scattered so as to lay as close to the ground as practical, but not exceeding two feet in height. In certain instances the slash is piled or chipped, at the discretion of National Grid, if it may create an obstruction on the right-of-way or an objectionable visual impact.

Hand cutting is used in order to protect environmentally sensitive sites or on target vegetation greater than four feet tall where herbicide use is prohibited by regulation or easement restriction and on non sprouting conifer species greater than two feet in height. Hand cutting is used on those restricted sites where terrain, site size or sensitivity render mowing impossible or impractical.

Hand cutting may be used at any time of the year.

Hand cutting will be used only as necessary because when hardwood species are cut, and no herbicides are used, they resprout profusely, eventually forming dense, almost impenetrable thickets. This growth is so vigorous that extensive use of this technique will dramatically increase costs, may reduce electric service reliability and will reduce worker safety and required access on the right-of-way.

B. Mowing

Mowing consists of the mechanical cutting of target species using large cutting machines. Rubber-tired tractors or tracked vehicles are used for mowing. Selection of specific equipment is based on terrain, target vegetation size and equipment availability. Rubber-tired tractors are preferred on all sites, however, exceptionally wet sites require a tracked vehicle to permit site access.

Large stem diameter target vegetation requires the use of larger mowing machines mounted on rubber-tired tractors.

Mowing is used on sites where herbicide use is prohibited by regulation or easement restriction, or where a large number of target species stems have exceeded maximum control heights, or where access is inhibited by high woody vegetation density and that access is required in the short term, and where terrain, site size and sensitivity permit the efficient use of the equipment.

The use of mowing as a treatment method is restricted by steep slopes, rocky terrain, wet sites with deep soft soils and debris on the right-of-way.

Mowing may be used at any time of the year except when deep snow precludes operations. Mowing will be used only as necessary for the same reasons outlined above in section A. Hand Cutting.

C. Foliar Treatments

Foliar treatments involve the selective application of a herbicide, diluted in water, to the foliage and stems of the target vegetation. Two types of equipment for foliar treatments are used: hand-pump backpack sprayer and motorized backpack sprayer. Both treatments use low pressure, below 60 psi at the nozzle, for application.

Low volume foliar treatments with hand-pump backpack sprayers are used in low density target vegetation. The herbicide solution, commonly diluted to a 0.25 to 8 percent component of the total solution, is applied to wet the target plant. Motorized backpack application equipment is used in high density target vegetation. Using a column of air generated by the motorized backpack, the herbicide solution, diluted as above, is applied to lightly wet the target plant.

Foliar treatments are used within the cleared width of the right-of-way on hardwood tree and shrub target species below ten feet in height. Foliar treatments are generally not applied to conifer species. (Exceptions to this general guideline will be identified in Yearly Operational Plans [YOP]) Foliar treatments are not used within visual buffers on targets greater than six feet in height within 400 feet of groundwater, within one hundred feet of a public surface water supply, within fifty feet of a private water supply, within ten feet of standing surface water, or within twenty-five feet of active croplands, gardens or pastures. Foliar treatments are allowed in wetland areas where no standing water is present, as per the Department of Food and Agriculture Decision, dated October, 1995, concerning the wetland impact study conducted pursuant to 333 CMR 11.04 (4)(C)(2) (Appendix 3).

Application of foliar treatments is limited to the season when leaves are fully developed in the spring until early fall when leaves begin dropping off the trees approximately June 10 to September 20.

Foliar treatments are used because, when used according to National Grid's application program, they are an effective and efficient method to control the whole target plant. Controlling the whole target plant reduces competition from sprout growth and encourages shrub and herbaceous growth that further inhibits and slows the invasion of these undesirable trees. This creates and maintains a diverse vegetation cover that minimizes vegetation management needs while providing an attractive site for wildlife and multiple uses of the right-of-way. By minimizing the density of target species this also minimizes impacts of periodic vegetation management operations that are required to maintain this vegetation community.

D. Low Volume Basal Treatment

Low volume basal treatments involve the selective application of a herbicide, diluted in mineral oil to wet the entire lower twelve to eighteen inches of the main stem of the target plants. Low volume basal treatments are applied using hand-pump backpack units.

This treatment method can be used any time of year except in deep snow. The optimum treatment time frame is in the dormant season when application is easier due to the lack of foliage. Optimum target vegetation density for this treatment is low with average heights greater than four feet.

Low volume basal treatments are used with the same rationale as outlined in Section C. Foliar Treatments. Basal treatments have the added advantage of extending the treatment season into the dormant season thus facilitating the retention of experienced applicators. Extending the season also provides a larger time frame to spread the work load. These treatments also have the advantage of being very low profile in that no noisy motorized equipment is used and, since the treatment is generally done in the dormant season, target vegetation is controlled without creating brownout.

E. Cut Stump Treatment

Cut stump treatments consist of the mechanical cutting of target species using chain saws immediately followed by a herbicide treatment applied with squirt bottles or painted on the freshly cut surface of the stump. The herbicide is limited to the freshly cut surface of the remaining stump. The cutting procedure is identical to that outlined in section A. Hand Cutting.

Cut stump treatments are applied to the stump of hand cut target hardwood vegetation: 1) greater than ten feet in height that is capable of sprouting;

2) sprouting conifer species (Pitch Pine), taller than two feet tall; 3) around visually sensitive sites, such as road crossings and residential areas; and 4) in buffer zones adjacent to environmentally sensitive sites, such as active croplands or gardens, swamps or marshes and active pastures.

Cut stump treatment may be used at any time of the year provided snow depth is not such that it prevents cutting the stumps below three inches in height.

Cut stump treatments are a part of National Grid's integrated pest management program for the same reasons outlined in section C. Foliar Treatments. This method is used within the right-of-way where maximum herbicide control is desirable and/or reduction of visual impacts of vegetation management treatments is preferred.

F. Tree Growth Regulators

Tree growth regulators (TGRs) are herbicides that slow or regulate the growth of a tree to minimize clearance pruning or removal. These materials are applied to the soil at the root collar (site where the tree meets the soil) or soil injection. In certain situations TGRs eliminate the need for removal of target vegetation or repetitive pruning. This tool provides a viable alternative to otherwise mandatory removal of tree species undesirable for electrical line maintenance and integrity, but aesthetically desirable.

G. Selective Pruning

Selective pruning consists of the mechanical pruning of the tops or encroaching limbs of tall growing tree species to prevent them from growing into or falling onto the lines. This pruning will be accomplished using aerial lifts

mounted on trucks or tractors or, if terrain or obstructions prevent equipment access, by climbing crews.

Selective pruning is limited to sites where visual buffers are desired to screen substations or Company defined objectionable views and existing shrub growth does not provide adequate screening. Owners of land which rights-of-way cross may also be permitted to selectively prune trees that they desire to leave within the right-of-way at the discretion of National Grid.

Selective pruning may be done at any time of the year.

This method is beneficial in providing visual buffers on the limited areas where tree buffers are desired and selective removals are not practical. Selective pruning may be required or more practical on certain State or Town regulated road crossings. Selective Pruning also provides landowners a viable alternative to otherwise mandatory removal of tree species undesirable for electric line maintenance and integrity, but aesthetically desirable to the property owner.

H. Summary

Historically, selective low volume foliar treatments have been the most commonly used management technique in terms of total acres treated. Low volume foliar applications account for approximately ninety percent of the total acres treated. Low volume basal treatments are generally utilized on rights-of-way with low density target vegetation and are less than one hundred feet in width and traverse more populated areas. Basal applications account for approximately 1-2 percent of the total treatments. Hand cutting, mowing and cut stump treatments are generally utilized on isolated sites, as appropriate, throughout any given right-of-way in conjunction with the foliar and

basal treatments. These treatments account for approximately five to ten percent of the total right-of-way acres treated. Tree Growth Regulators (TGR) will be applied in selected locations for experimental purposes.

V. Justification of Herbicide Applications

National Grid uses an Integrated Pest Management program emphasizing selective herbicide use to control undesirable vegetation on its' rights-of-way. This program integrates the use of various methods of selective herbicide applications and non herbicide mechanical cutting. National Grid has analyzed all aspects of the various vegetation management methods currently available and have chosen a selective herbicide treatment program which it believes is the safest, most environmentally sound and cost effective program currently available.

Utility industry researchers have determined that herbicides, as used in National Grid's program, have been demonstrated safe (USDA Forest Service, 1984 and USEPA, 1996). This is due to the small amount of herbicide applied selectively and the fact that the herbicide formulations used are low in acute toxicity (Harrison, 1985), do not bioaccumulate (USDA Forest Service, 1984) and, as applied, have a short life-span in the environment with very low soil mobility (Deubert, 1985). Selective and judicious use of herbicides does not adversely affect wetland plant composition or function; see DAR Decision, Appendix 3. In fact, mechanical vegetation control techniques used on rights-of-way result in significantly greater impact on wetland composition and function, E.C.I., 1989 and Nickerson et. al., 1993. Further, public exposure could be considered virtually negligible due to the high degree of control of the herbicide solutions inherent in the treatment methods and the behavior of the selected herbicides. National Grid's

vegetation management program eliminates significant drift from foliar treatments by requiring the use of low drift agents, prohibiting treatments in high wind situations and setting maximum target height limits.

Mechanical cutting is relatively hazardous since it exposes both the workers and the public to safety risks from objects thrown by the mower. A relatively high incidence of injuries from hand cutting operations compared to herbicide treatments have been documented by Vegetation Control Service, Inc., in evidence submitted to the GEIR Task Force in 1984 (Appendix 6). Chain saws kick-back and cause numerous injuries despite safety features and protective leg guards. Mowing machines will throw rocks, pieces of wood or other objects great distances. This endangers both workers and the public. Small diameter cut stumps left by cutting operations create a potentially dangerous situation for workers and the public who may trip and fall onto them or puncture tires. Further, the target species density promoted by regular cutting operations creates unsafe working conditions for both vegetation management crews and electric line crews by obstructing access, hindering work on the site and facilitating the spread of injurious thorny or poisonous plants. Due to their growth habits, specifically vigorous resprouting, these injurious plants can only be practically controlled by herbicide applications.

Herbicides, as used selectively in National Grid's program, have been demonstrated the most ecologically sound vegetation management method especially when compared to mechanical methods, which result in a much less selectively maintained right-of-way.

Selective herbicide use promotes a diverse plant community of low growing woody vegetation and herbaceous plants. This diversity can only be achieved by periodically, selectively weeding out vigorously competitive tree species. When

deciduous tree species are mechanically cut the root system survives and resprouts profusely. These trees will multiply so quickly and vigorously that they eventually dominate a site, creating a dense community of tall growing tree species. Periodic, selective herbicide use eliminates the entire tree, including the root system, and prevents it from competing.

The resultant diverse, low growing plant community provides a biological control. This biological control is active by facilitating the spread of a dense cover of low growing vegetation that competes for sunlight, moisture and nutrients. This competition inhibits the germination and growth of tree seedlings. Competition for space and nutrients may be further enhanced by allelopathic plants that inhibit tree invasion by releasing their own natural toxins into the soil. These toxins make it difficult for other plants to get established and grow. See review of allelopathic affects in Check and Keilbaso, 1998.

The net environmental benefits of maintaining a diverse low growing plant community maintained through the selective use of herbicides are multiple. By reducing the density and inhibiting the growth of undesirable tree species the amount of herbicide needed for vegetation control is decreased. Treatment cycles are lengthened and there are fewer undesirable species on the right-of-way that require control. This reduction in target species and lengthening of the treatment cycle results in less site disruption and so reduces ecological and environmental impacts both long and short term. Diverse vegetation provides wildlife habitat for more species and so generally increases total wildlife populations.

Maintenance of this dense plant cover prevents the soil exposure and erosion that may result from rutting from mechanical treatments.

Promoting a relatively stable plant community and minimizing site disruption provides more than reduced environmental impacts. This program has the added social benefits of creating a positive public perception of rights-of-way. Since the use of herbicides is reduced and the density and height of undesirable target species is very low, vegetation management operations have a low impact on the existing plant community. Nearby residents are not significantly impacted by extensive foliar brownouts or drastic changes in the right-of-way plant community that would occur with less selective herbicide or mechanical treatments. Further, the low growing vegetation provides a more open right-of-way increasing the diversity of wildlife species, attractive flowering plants and berries.

Finally, a selective herbicide program is more cost effective than a mechanical cutting program. The comparatively increased density and height of undesirable tree species promoted by mechanical cutting requires the expenditure of more time and resources to control that vegetation. Estimates, based on actual costs for the limited cutting currently done, have indicated that average expenditures for a mechanical cutting program would be two to over five times the cost of the current integrated pest management program. Hidden, indirect costs that could result, such as lost income from reduced electric service reliability, increased time and costs for line inspection, maintenance and repair, higher right-of-way accident rates resulting in increased insurance costs, and the increased labor costs that would be required to attract workers to perform this type of work are not factored into that estimate.

It is important to reemphasize that the use of herbicides is not appropriate or necessary in all cases. Herbicides will not be used if site sensitivity, regulatory or easement restrictions, or target species composition or height recommend

otherwise. Herbicide treatments will not be used on target vegetation in standing water or within designated buffer zones around drinking water supplies. Owners of property which rights-of-way cross may enter into agreements to restrict herbicide use if they maintain the undesirable vegetation within National Grid's established limitations (Section XI). Regulatory or right-of-way easement restrictions prohibiting or restricting herbicide use will be honored.

Target species, such as non sprouting conifers, are generally not treated since herbicide treatment is not necessary for total control. Exceptions to this general guideline are made where White Pine regeneration has seeded in large thick carpets and mowing would be more destructive than herbicide application. In cases where large areas of high density target species have exceeded maximum herbicide treatment heights, it may be more practical to do a mechanical treatment followed in one or two growing seasons by a herbicide treatment to obtain effective control.

Specific herbicides and treatment methods to be used on any given right-of-way are selected based on site sensitivity and target species composition and density. Individual herbicides have different levels of effectiveness on target vegetation species. No one herbicide is equally effective on all target species and certain herbicides are more effective on certain target species than other herbicides. Further, most herbicides are formulated specifically for certain application methods and so treatments with those herbicides are limited to those methods. Similarly, individual treatment methods are not as effective or practical for control of certain target vegetation heights or densities. It is necessary to select the herbicide or combination of herbicides conjunctively with the appropriate treatment method to obtain the most effective control of the specific target species

composition and density on each right-of-way. Individual herbicides and treatment methods also have distinctive physical effects and environmental behaviors. For example, certain herbicides or treatment methods cause foliar brownout while others do not and certain herbicides have been formulated for use in wet environments while others have not. The selection of specific herbicides or combinations of herbicides coupled with the appropriate treatment methods is made with equal consideration given to the visual or environmental sensitivity of a right-of-way or site within a right-of-way.

In conclusion, there is no practical alternative to a properly planned and implemented integrated pest management program emphasizing the selective use of herbicides. Used properly, herbicides are relatively safe, efficient and effective in providing the necessary control of target vegetation.

VI. Sensitive Area Identification and Vegetation Control Strategies

Within Those Areas.

A. Sensitive Area Identification

Sensitive areas are identified as public ground water supplies, public surface water supplies, private drinking water supplies, surface waters, wetlands, inhabited areas, and agricultural areas.

Each sensitive area has a defined limit for special protection to further minimize environmental and public health risks. The limit of each sensitive area is shown in the illustration on pages 20 and 21. Within most sensitive areas there is an area in which herbicide use is prohibited (black zones as shown on chart pages 20 and 21) and a larger area where herbicide use is permitted under certain conditions (referred to as a conditional herbicide use zone). These conditions, defined in 333

CMR 11.04, require the use of herbicides and application methods recommended jointly by the Department of Agricultural Resources (DAR) and the Department of Environmental Protection (DEP). The Memorandum of Understanding issued by DAR and DEP can be found in Appendix 4. Herbicides to be used will be noted in the Annual YOP. The general characteristics of the sensitive area herbicides are: low toxicity to humans and other animal species; short term soil persistence; biodegradation of active ingredients; and low soil mobility. Details on these characteristics are discussed in the DAR Herbicide Fact Sheets included in the annual YOP.

National Grid's policy is to use only herbicides and application methods recommended for use in sensitive areas, as per 333 CMR 11.04:1(d), on the full length and width of all rights-of-way to be treated. The operational effect of this policy is that outer limits of sensitive areas - the conditional use zone - need not be identified in the field by treatment crews.

Sensitive areas: methods to identify them, and no-herbicide and conditional-herbicide use zones are illustrated on page 21.

For the purpose of identification, sensitive areas can be separated into two categories: areas not readily identifiable in the field; and areas that are readily identifiable in the field.

Sensitive areas not readily identifiable in the field include public ground water supplies, public surface water supplies and private wells. The method utilized to identify these sensitive areas will be as follows:

- 1) Consult the appropriate reference materials and sources [Data Sheets and FORGIS (Forestry Geographic Information System defined on page 46)] (Section VI.B.) to determine the precise location of these areas.

- 2) Place the boundaries of these sensitive areas on United States Geological Survey (USGS) topographic maps (YOP maps)[FORGIS].
- 3) Within the required municipal right-of-way treatment notification letter, mail copies of the appropriate sections of these marked up YOP maps to each municipality and solicit confirmation and input regarding the accuracy of these public and private water supply locations.
- 4) The treatment crew will deploy a cutting crew or point person in advance of the main herbicide application operation to locate and flag the boundaries of these sensitive areas and the appropriate buffer zones. These crews will also identify any private wells that are not shown on these maps and add new private wells to the list and survey forms for inclusion in FORGIS.

Sensitive areas readily identifiable in the field include surface waters, wetlands, inhabited areas, and agricultural areas. The method utilized to identify these sensitive areas will be as follows:

- 1) Consult USGS topographic (YOP) maps, FORGIS and company Data Sheets and FORGIS to locate any of these sensitive areas.
- 2) The treatment crew will deploy a cutting crew or point person in advance of the main herbicide application operation to locate and flag boundaries of these sensitive areas or the appropriate buffer zone. These crews or persons will additionally identify any new sensitive areas that are not shown on these maps. New sensitive areas will be incorporated into Data Sheets and FORGIS.

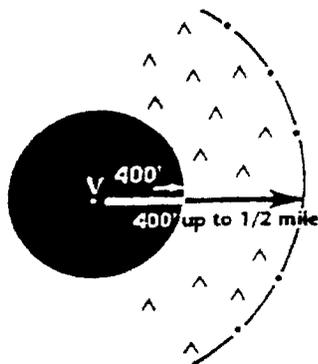
VEGETATION CONTROL STRATEGIES IN SENSITIVE AREAS

As required by 333 CMR 11.00 and/or approved VMP and YOP

SENSITIVE AREAS NOT READILY IDENTIFIED IN THE FIELD

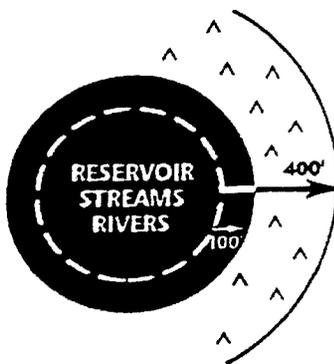
- ◆ Forester maps on USGS Topographic Maps
- ◆ Private wells identified in the field will be mapped on FORGIS USGS topographic maps.
- ◆ Contractor will be provided maps with which to flag the boundaries of no-herbicide zones within the R.O.W. prior to herbicide application.

Public Ground Water Supply Well

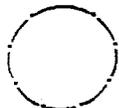


V Public Ground Water Supply Well

Public Surface Water Supply



Public Surface Water Supply

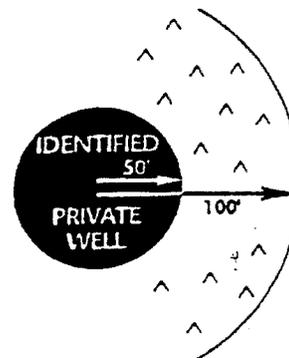


Primary Recharge Area
(may not be known or mapped)



Private Well

Identified Private Drinking Water Well

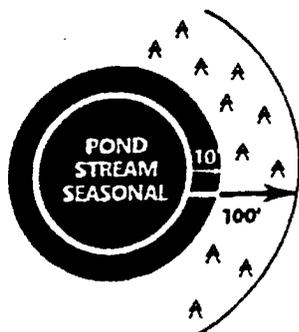


SENSITIVE AREAS READILY IDENTIFIABLE IN THE FIELD

- ◆ Consult FORGIS USGS Topographic Maps.
- ◆ Contractor will be provided maps with which to flag the boundaries of the no-herbicide zones prior to herbicide application.
- ◆ Contractor will mark additional areas not found on maps

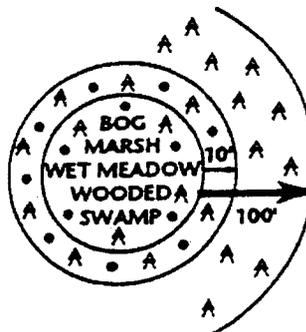
SURFACE WATERS

Non Water Supply



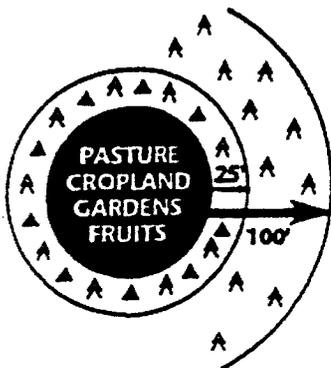
WETLANDS

Defined by C. 131 S. 40
(Except in areas subject to flooding)

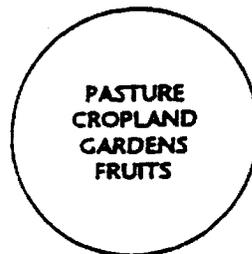


AGRICULTURAL AREAS

Active - Growing Season



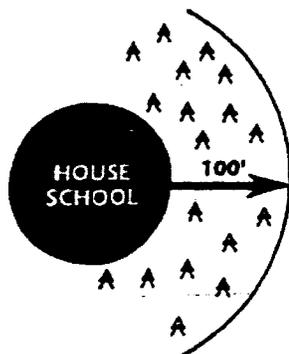
Inactive



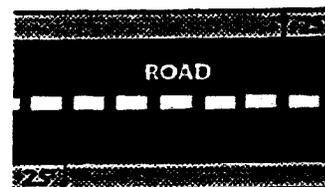
NO RESTRICTIONS

INHABITED AREAS

(People live, work, or gather)



ROAD CROSSINGS



NATIONAL GRID POLICY

KEY

-  No Herbicides
-  Conditional Herbicide Use
 - 1) Herbicide recommended for use in sensitive area (333 CMR 11.04(1)(d)).
 - 2) Cut stump, basal and low pressure foliar.
 - 3) ^ 24 months elapsed since previous treatment.
 ▲ 12 months elapsed since previous treatment.
 - 4) ● No herbicides applied to conifer species and carriers reviewed by DFA and DEP.
 - 5) ▲ Cut stump only.
-  Cut stump and basal treatments. No other conditions.

B. Reference Materials and Sources of Information

Reference materials and sources to be utilized to identify sensitive areas include, but are not limited to the following:

- U. S. Geological Survey Topographic maps (FORGIS);
- Company Data Sheets;
- Massachusetts Department of Agricultural Resources;
- Massachusetts Dept. of Environmental Protection Water Supply Maps;
- Massachusetts GIS Office
- Wetlands Conservancy Program Maps
- UMass Cartographic Institute
- Department of Conservation and Recreation;
- Division of Fisheries and Wildlife, Natural Heritage Program
- Municipal maps or records, including information provided in response to the required municipal notification letters;
- Meetings with municipal officials or right-of-way abutters prior to or during treatment operations; and
- Information provided to the Company during the public review of the YOP;
- Miscellaneous Company and vegetation management contractor records and local knowledge.

These materials and sources shall be compiled and referenced, when available, prior to the commencement of the treatment operation on a right-of-way. National Grid will solicit information from sources, as required in the regulations, for information on sensitive areas not readily identifiable in the field.

C. Control Strategies

Control strategies to be utilized within and adjacent to Sensitive Areas are detailed in the illustrations on pages 20 and 21. In areas where herbicides are prohibited (Black Zones), Hand Cut and/or Mow methods are used.

VII. Massachusetts Endangered Species Act

The Massachusetts Endangered Species Act, M.G.L. c. 131A, and regulations promulgated hereunder, 321 CMR 10.00, sets forth procedures for the listing of Endangered, Threatened, and Special Concern species native to Massachusetts, the designation of Significant Habitats for such species, and establishes rules and prohibitions regarding the activities which take species or alter their Significant Habitats.

National Grid, throughout the five states in which it owns facilities, has historically cooperated with various chapters of the Nature Conservancy and state Natural Heritage Programs to protect known sites where Endangered, Threatened, and Special Concern species (state listed species) are known to occur. To comply with the General Provisions, 321 CMR 10.00 Part I, National Grid will submit this VMP for review by the Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (NHESP). National Grid's YOP will be submitted to the NHESP for review upon request of the NHESP. National Grid shall take all practicable means and measures to modify right-of-way vegetation management procedures to avoid damage to state listed species and their habitats as per guidance and information provided by the NHESP.

Provisions of 321 CMR 10.00, Part II, allow NHESP to designate Significant Habitat on any land in the Commonwealth. National Grid would be notified as an owner of interest in any Significant Habitat that incorporates right-of-way. No such designations have been made to date. Vegetation management activities within Significant Habitats require an Alteration Permit from the Director of the Division of Fisheries and Wildlife, 321 CMR 10.00, Part III. When it becomes necessary, National Grid will seek such a permit under the Coordinated Permit Review process of the Regulations, Section 10.38.

VIII. Operational Guidelines for Applicators Relative to Herbicide Use

National Grid retains independent contractors for all vegetation management applications and requires these contractors to comply with all applicable state and federal laws and regulations. Contractor performance and compliance with this Plan will be evaluated by National Grid Foresters and Arborists.

A. Safety

As a contractual term, National Grid USA requires all contractors to comply with all appropriate state and federal safety laws and regulations. This includes applicable sections of the Occupational Safety and Health Act (OSHA) and all worker safety related statements and instructions on the herbicide label.

B. Weather

Herbicide application will be restricted during certain adverse weather conditions, such as rain, wind or deep snow.

1. Rain

Herbicide applications will not be made during periods of moderate or heavy rain fall.

Foliar applications are effective in light mist situations, however, any measurable rainfall that creates leaf runoff will wash the herbicide off the target. If foliar applications are interrupted by unexpected rainfall, the treatment will not resume until the rain ends and active leaf runoff has ceased.

Basal applications are ineffective during measurable rainfall. Basal applications that are interrupted by rainfall will not be resumed until at least fifty percent of the application zone of the target species is dry.

2. Wind

Excessive wind can create drift during foliar applications. Significant herbicide drift can cause damage to desirable vegetation on or off the right-of-way. Basal or cut stump treatments are much less affected by wind because they are applied in such close proximity to the ground.

To prevent any significant off-target drift of herbicides, the applicator will comply with the following restrictions:

- a. During periods of wind, which are strong enough to bend the tops of the main stems of tree species on the right-of-way, the contractor crew supervisor will periodically observe the application of the foliar treatment to insure that there is no significant movement of the herbicide solution. If the supervisor can see the solution moving off the target, applications will immediately stop until the wind has subsided enough to permit further applications.

- b. All herbicide solutions to be used for a foliar application will contain low-drift agents. Low-drift agents will be added to the foliar herbicide solution as per the low-drift agent label. In moderate wind conditions, as per label recommendations, more low-drift may be added, at the discretion of the contractor supervisor, to control significant drift.
- c. Foliar treatments will not be applied to target vegetation that exceeds approximately ten feet in height.

3. Deep Snow

Herbicides will not be applied when the snow exceeds an average depth of six inches on the right-of-way. Deep snow creates logistical impediments for basal and cut stump treatments. Deep snow renders it impractical to basally apply herbicides to the lower six inches of the stem of the target species or to cut target species so that the stumps are below the acceptable maximum height limit because the application zones are buried in snow.

C. Equipment Calibration

Equipment calibration for selective herbicide applications utilized by National Grid is based on attaining the proper coverage of target species with the herbicide solution.

1. Foliar Treatments

Low volume foliar application equipment will be adjusted to apply a coarse spray pattern. Pressure at the nozzle of hand-pump backpack sprayers, and air speed and throttles on motorized backpack sprayers will be kept to the

minimum setting required to transport the herbicide solution to the tops of each target and penetrate the foliage to the main stem of each target.

2. Basal Treatments

Basal treatment application equipment will be calibrated through the use of the Y-2 nozzle orifice. Hand pumped pressures will be maintained at the minimum pressure required to adequately cover the lower twelve to eighteen inches of the main stem of the target plant when applying the herbicide solution.

3. Cut Stump Treatments

Cut stump treatment squirt bottle applicators will be adjusted to deliver the herbicide solution in a thin stream to the target zone.

D. Right-of-Way Treatment Area

All target tree species within the cleared width of the right-of-way will be removed or controlled during a treatment operation. This includes all woody vegetation and vines growing on or encroaching upon roadways or trails or, on or within ten feet of structures within the cleared width of the right-of-way. Treatments will also extend around the perimeter of any substations. The only exceptions are as noted in Section E. Trees in Yards or Trees Buffering Yards and Section F. Visual Buffers.

E. Trees in Yards or Trees Buffering Yards

Trees growing within the cleared width of the right-of-way that are located in yards or trees buffering yards will be removed unless the landowner maintains tree height such that the tree will not invade the conductor security zone (defined on page 45) within five years.

The contractor shall contact the landowner in order to determine whether the landowner is willing to maintain the tree at the specified height.

If the landowner is willing to maintain the tree at the specified height, the contractor will note the species and specified maximum height permitted in Data Sheets for the line and Survey Sheet for inclusion in FORGIS. The contractor will verify the completion of any Pruning that was immediately required prior to the completion of right-of-way treatments on that right-of-way. Deficiencies will be reported to the Forester.

If the landowner refuses to maintain the tree at the specified height, the contractor will remove the tree, treat the stump and dispose of the slash appropriately.

F. Visual Buffers

Visual Buffers, consisting of trees and/or shrubs, screen the general public from potentially objectionable views of structures and substations. They are maintained at sites where, in the opinion of the company, people may find the view of structures or substations objectionable. These sites include, but are not limited to, locations where rights-of-way cross roads, recreational areas and inhabited areas.

Two types of visual buffers are used: shrub and tree/shrub.

Shrub buffers are left at most road crossings. All tree species will be removed. Shrubs species that may grow into the conductor security zone within five years will also be removed.

Tree/shrub buffers are used only where sites are extremely sensitive visually and shrub growth is inadequate for screening. Tree or shrub species that can be expected to invade the conductor security zone within five years

will be removed. Selective Pruning will be used where removal is prohibited or where an adequate buffer could not be maintained because too many trees would need to be removed to maintain the required five year conductor security zone clearance.

Cut stump treatment will be used on all woody vegetation (except non-sprouting conifers) removed from visual buffers unless the buffer is within an environmentally sensitive area. In that case, restrictions on treatments within the environmentally sensitive area will take precedence.

Slash will be disposed of by dicing, chipping or piling as per the approval of the company.

G. Protective Buffers

Protective buffers consisting of specially treated zones, protect environmentally sensitive sites such as surface water (rivers, streams, brooks, lakes and ponds), public water supplies, private drinking water supplies, agricultural areas and inhabited areas. Vegetation management operations on such sites are designed to prevent any unreasonable adverse environmental effects.

Specific dimensions for minimum protective buffers are set by State regulations, see illustration on page 20.

These buffer zones will be maintained as per methods discussed in Section VI.C., page 23.

Remove all slash and debris of cherry species immediately after treatment in active pastures to prevent any harm to livestock.

H. Slash Disposal

Slash will be disposed of by dicing, piling, or chipping. Slash will not be left in waterways, trails or roads, or in such a manner that would permit it to wash into these areas. Slash from yards or recreational sites will be chipped or removed to adjacent areas and disposed of there.

Dicing will be accomplished by cutting the slash in pieces where it falls so that it lies as close to the ground as practical. The diced slash should not exceed two feet in height. This method is the preferred slash disposal practice.

Piling slash will be accomplished by grouping slash in isolated areas within a site. Piles should not exceed two feet in height. Slash may be piled whenever other disposal methods could limit access to a site or when it has been removed from other sites.

Chipping is used on sites designated by the company when dicing or piling are prohibited or impractical. Wood chips will be removed or scattered uniformly over the site at depths not exceeding four inches.

I. Right-of-Way Access

Access to a right-of-way will be through the use of established roadways whenever possible. Permission to enter a right-of-way by any other means must be obtained from the landowner by the contractor.

J. Sites Under Alternate Land Uses

Sites will not be treated that are designated in FORGIS by the company as landowner treatment sites, that are croplands or Christmas tree farms or that are under any alternate land use such as fields, pasture, pavement, etc. that makes vegetation management treatment by the company unnecessary. The contractor

must inform the company whenever encountering alternate land use sites that have not been included in Data Sheets or FORGIS.

K. Right-of-Way Vegetation Management Width

National Grid's integrated pest management program must be applied to remove or control all undesirable vegetation within the full cleared width of the right-of-way.

L. Vegetation Management Program Effectiveness Standard

The vegetation management program applied to each right-of-way must result in 100% control or removal of all target species greater than or equal to six feet in height and a minimum 95% control or removal of all target species less than six feet in height.

M. Identification of Sensitive Areas

Visually and environmentally sensitive sites must be buffered and treated according to procedures and specifications set forth in Section VI. A person or crew who, in the opinion of the company, is qualified through training and performance in the field identification of these sensitive areas will be deployed in front of the treatment crew to identify sensitive sites and to designate the appropriate buffers. This person or crew will stay far enough in advance of the treatment crew so that adequate time is allowed to mark these boundaries before the treatment crew reaches the area. The point person will make a reasonable effort to identify private wells within 100 feet of the right-of-way even if they have not been marked by the property owner.

N. Site Damage

Unreasonable site damage or destruction during any phase of the vegetation management operation by the contractor, his agents or employees, must be

repaired immediately to the satisfaction of the company. The company will determine what constitutes unreasonable site damage.

O. Contractor Duties and Responsibilities

Vegetation management operations must be conducted according to this management plan and according to the written instructions of the company. Failure to do so is grounds for removal of the crew from the treatment site and termination of the contractor's contract at the discretion of the company.

1. Labor, Supervision, Equipment and Materials

The contractor is responsible for providing the following:

- Experienced and/or trained workers, who are appropriately licensed or certified. Workers must conduct themselves professionally at all times.
- Appropriately licensed or certified supervisors who are knowledgeable with regard to all aspects of the contracted treatment and who are responsive to the guidance of the company. Supervisors must be able to effectively communicate with the public. They must also effectively supervise contractor crews in order to insure the satisfactory completion of the treatment operation and compliance with all appropriate standards and regulations.
- Compliance with all applicable Federal and State laws and regulations.
- Equipment, including backup equipment, which is sufficient to maintain the highest practical level of efficiency and effectiveness. Equipment must be maintained in good visual and working condition.
- Herbicides, adjuvants, carriers and additives (hereinafter collectively referred to as "materials"). Materials and mixture rates will be specified by the Forester on a right-of-way by right-of-way basis. These

specifications will not be deviated from without the approval of the Forester. The contractor is responsible for the proper disposal of all excess materials and solutions in accordance with all applicable Federal and State laws, regulations and guidelines.

P. Right-of-Way Specifications

The Forester will inform the contractor which rights-of-way will be treated, the range of dates of treatment and the methods, materials and mixing rates to be used.

The company will supply Data Sheets and maps from FORGIS and written instructions outlining any special treatment considerations or instructions for each right-of-way.

No work will be done until the contractor has the appropriate permits, restriction list and mixing rate instructions unless otherwise authorized by the Company.

All treatment crews must carry copies of this vegetation management plan and the yearly operational plan, a one hundred foot measuring tape and a 1:20 measuring scale.

IX. Identification and Qualifications of Individuals Developing and Submitting this Plan

National Grid feels strongly that it is necessary to have qualified professionals to conceive, design, implement and supervise all phases of vegetation management operations. Vegetation management, especially herbicide application operations, require an elevated level of technical expertise and experience in order to design the best integrated management approach and to

adequately prescribe the proper treatments to control undesirable vegetation while minimizing site impacts.

National Grid has nine professional foresters and arborists on its staff in Massachusetts. All nine have professional degrees in Arboriculture or Forestry and extensive experience in utility vegetation management operations.

The professional responsible for developing and submitting this plan is:

Thomas E. Sullivan
Manager, Transmission Forestry
National Grid USA
25 Research Drive
Westborough, MA 01582
Telephone (508) 389-9086

Mr. Sullivan has developed and written this plan and is often referred to as the Forester in this VMP. He is responsible for system-wide design, planning, coordination and supervision of all right-of-way vegetation management operations. This includes, but is not limited to, preparing and implementing this vegetation management plan, scheduling work, estimating budgets, prescribing herbicides and application methods for each right-of-way, obtaining necessary permits, preparing required notifications, selecting contractors, spot checking treatment crews, and providing technical expertise and liaison between National Grid and landowners, local and state officials, or other interested parties. Mr. Sullivan received B.S. Degrees in Physiology and Forest Resource Management and a M.A. Degree in Biology/Biochemistry. He has been at National Grid USA since 1990. Prior to that he was employed at Bay State Forestry Service, a division of Vegetation Control Service, Inc. Bay State Forestry Service provided forest management consulting services to private and public owners of forest land and Christmas tree growers. He has a Pesticide Commercial Certification license - right-of-way category - and is a Certified Arborist and Licensed Forester.

Mr. Sullivan has served as a member of the Princeton Conservation Commission and the Wachusett Mountain Advisory Council and Environmental Monitoring Board. He is also a member of the Department of Environmental Management (DEM) Board of Environmental Management, International Society of Arboriculture, Utility Arborist Association, and the Society of American Foresters.

X. A Description of National Grid's Integrated Pest Management Program

Integrated Pest Management (IPM), as applied to electric utilities is a means of controlling pests below economically damaging levels while reducing reliance on chemical pesticides by using selective pesticides, timing applications to maximize control while minimizing pesticide use, using biological control measures, and avoiding fixed application schedules while protecting non-target organisms and environmentally sensitive sites.

National Grid's IPM program recognizes and considers all of the concepts identified in the IPM definition:

- reducing reliance on chemical pesticides;
- using selective pesticides/application procedures;
- timing applications;
- using biological control measures;
- avoiding fixed application schedules;
- protecting non-target organisms; and
- protecting environmentally sensitive sites.

National Grid is reducing reliance on chemical pesticides by applying the concepts listed in the IPM definition and described later in this section. This reduction has been demonstrated by observing herbicide use rates for comparable

herbicides through the history of National Grid's vegetation management program. In the early stages of implementation of the program, when the cutting program was being replaced by herbicide application and the rights-of-way were dominated by undesirable tree species, an average rate of approximately three gallons of herbicide formulation was reported applied per acre. Twenty years ago, as the IPM program had further evolved and the rights-of-way were beginning to develop a more diverse vegetation cover from the selective herbicide treatments, an average rate of approximately one to one and one-half gallons of herbicide formulation was recorded applied per acre. Currently, as we have further fine-tuned the IPM program, an average rate of approximately one pint to two quarts of herbicide formulation is being applied per acre. Similar reductions in herbicide use through stable plant community management has been documented in New York state, Nowak 1993, see Appendix 11.

National Grid is using selective pesticides and/or highly selective application procedures. The key factor within National Grid's program that minimizes herbicide use and provides selective results is the utilization of very selective application methods. Therefore, even nonselective herbicides, such as glyphosate formulations, can result in very selective results.

Timing applications is important to maximize control while minimizing pesticide use. National Grid schedules herbicide applications during a time frame in which the particular herbicide or application method is most efficient and effective. For example, the herbicide fosamine, applied as a foliar treatment, is not totally effective on many target species when applied prior to late June. Therefore, no foliar treatments with fosamine would be scheduled in early to mid-June. Further, long term timing is critical in minimizing herbicide use and ensuring maximum

control. National Grid utilizes a treatment cycle of three to five years, which results in optimum treatment conditions. Optimum treatment conditions for right-of-way target vegetation are average heights of six to ten feet and average densities not yet reaching high levels. Experience has shown that extending cycles permits average target tree heights to exceed ten feet. This requires the use of more herbicide to get proper coverage of the larger tree crown area. Coverage is also more difficult on these taller trees and this increases the likelihood of improper coverage and the resultant lack of satisfactory treatment effectiveness. Target tree densities also increase dramatically and so more herbicide is required to control the higher number of target species. For example, according to Company calculations, deferring rights-of-way even one year beyond their optimum treatment cycle can result in increased herbicide use of over sixty percent.

Biological control measures are utilized by National Grid through the encouragement of low growing vegetation on the right-of-way. This encouragement is done through the intentional avoidance of treating this desirable vegetation. Low growing vegetation, by competing for sunlight, moisture and nutrients and, for some species, by exuding natural allelopathic toxins, inhibits the invasion and growth of undesirable tree species. Support for the concept of biological control can be found in numerous research papers including Bramble 1990, Niering 1974, and Putz 1992, see Appendix 11. Target tree densities on rights-of-way treated selectively with herbicides that have developed diverse low growing vegetation communities can average five hundred to one thousand stems per acre while densities on non-selective, mechanically treated rights-of-way with very little low-growing vegetation can average over twenty thousand stems per acre.

Avoiding fixed application schedules is accomplished by not treating a right-of-way until target vegetation height and density reaches optimum levels. National Grid inspects rights-of-way the first year after a treatment and the year prior to the next treatment to observe target vegetation density and heights. When target vegetation height averages six to ten feet or densities reach moderate to high levels, a right-of-way is scheduled for treatment. When vegetation communities stabilize on a right-of-way, treatment cycles should remain relatively consistent. However, short term changes in growth conditions, site disturbances or differences in previous treatment effectiveness may affect the schedule of any given cycle.

Protecting nontarget organisms is accomplished through the utilization of very selective treatment methods with restrictions placed on those methods to further control applications, through selection of herbicides that are low in toxicity, and by using those herbicides at such low rates that the risk of unreasonable adverse impacts through herbicide mobility or persistence is expected to be virtually eliminated. The lack of damage to non-target organisms by herbicide treatments is evidenced by the thriving desirable vegetation communities currently present on these treated rights-of-way. This includes the diversity and numbers of wildlife species observed. There are several research projects that demonstrate the positive impacts of selective right-of-way vegetation management treatments to non-target organisms. A bibliography of some of these wildlife projects is listed in Appendix 11. Further, there has been much investigation of the fate and mobility of the herbicides used by National Grid. Some of these references are listed in Appendix 11. Research has indicated a very short persistence and very low mobility when these herbicides are applied at the low rates used on Company

rights-of-way. Deubert in "Studies on the Fate of Garlon 3A and Tordon 101 Used in Selective Foliar Application in the Maintenance of Utility Rights-of-Way in Eastern Massachusetts" March, 1985, examined this relationship. More recently, Nickerson, in "Study of the Environmental Fates of Herbicides in Wetlands on Electric Utility Rights-of-Way in Massachusetts in the Short Term" December 1994, investigated the fate of herbicides in the soil following application of herbicides in the field.

Protecting environmentally sensitive sites is accomplished by limiting herbicide treatments on and near sensitive sites. This includes the use of non herbicide mechanical treatment methods where appropriate. To protect these sites, buffer zones are established and treatments are restricted to those outlined in Section VI.C., page 23. The prescribed treatments are based on the regulations, which consider the degree of sensitivity of each site and the requirement to minimize any unreasonable adverse impacts to that area. For example, a highly sensitive site, such as a private well, has a buffer zone in which no herbicide use is permitted while in less sensitive areas, such as an active agricultural area permits herbicide use in a buffer zone but limits it to cut stump treatments. The effectiveness of this program is evidenced by the lack of herbicide damage complaints received in the past twenty years by National Grid and the lack of enforcement actions by the Massachusetts Pesticide Bureau. Technical support for the effectiveness of buffer zones is provided in studies in New York state, E.C.I., 1991, see Appendix 11.

Annually, the Forester will review this Plan and National Grid's integrated pest management program to insure that they reflect the most current, practical industry standards. References and resources to be used for this review include, but are not limited to, operations experience, industry publications, new research,

comments from municipalities, state agency input, contractors and regulatory changes. Amendments will be made to the program or this Plan according to 333 CMR 11.05 if National Grid determines changes are appropriate.

National Grid has implemented the largest and possibly oldest integrated pest management program in Massachusetts. National Grid currently maintains approximately eighteen thousand acres of rights-of-way within the Commonwealth. This IPM program was initiated in the late 1960's and has been the program of choice since then. All National Grid's rights-of-way are managed according to the IPM program.

XI. Alternate Land Use of Rights-of-Way

Alternative land uses that are compatible with the operation of electric utility lines are encouraged on National Grid rights-of-way. However, it may be necessary, before an alternate land use is initiated, for National Grid to review the proposed use to determine whether it will interfere with the lines or otherwise violate the terms of the easement. Currently, land uses on rights-of-way include such things as parking lots, golf courses, parks, driveways, roadways, crops, pastures, gardens, lawns and Christmas tree farms.

Most right-of-way acreage, estimated at over eighty percent, is owned by easement rights. This in general permits National Grid to construct and operate the electric line, control the vegetation and access the line. The property owner retains all other ownership rights and may use or restrict the use of the property on the right-of-way in any manner that conforms with the easement. The easement usually prohibits the landowner from erecting structures, inhibiting Company access, growing trees or otherwise interfering with the operation of the electric line.

It is important to consider that, in terms of reducing herbicide use on rights-of-way through alternative land use, some alternatives, notably crops, gardens and lawns, will probably increase the use of herbicides and pesticides on that property.

Landowners sometimes desire to convert brush covered land on the rights-of-way to active agricultural uses such as cropland or pastures. In order to facilitate conversion of these brush acres on rights-of-way to agricultural uses that preclude National Grid's vegetation management operations, National Grid may enter a formal agreement with the landowner. This agreement (Appendix 7) is designed to outline landowner responsibilities and may provide for a cost share by National Grid.

National Grid may pay part of the cost of the land use conversion on the premise that National Grid will realize a cost savings by not having to maintain the vegetation on that portion of the right-of-way. This program also benefits the property owner by providing financial assistance that may encourage land use conversion and enable more efficient use of the property.

Landowners sometimes request that herbicides not be used on their property. Through the easement, National Grid has purchased the right to maintain vegetation on the right-of-way and feels strongly that it utilizes the safest, most effective management program available. Generally, when the program is described to the property owner and/or the property owner observes the treatment application, they do not have the concerns they held previously. If the property owner still requests that National Grid refrain from using herbicides on that property, National Grid may enter a formal agreement (Appendix 8) with that property owner to refrain from using herbicides. Before executing an agreement,

the property owner must agree to maintain the vegetation on the right-of-way, at their expense, within National Grid's specifications. Specifications vary with each individual property, but basically require that woody vegetation be kept below a certain height and clear of access roads, paths and structures. National Grid has maintained a policy setting the maximum height criteria as the smaller of ten feet or at a height such that five years of growth will not put the tree into the conductor security zone.

XII. Remedial Plan to Address Spills and Related Accidents

National Grid retains independent contractors to accomplish all aspects of herbicide applications including the containment, cleanup and reporting of any herbicide spills or related accidents. For this reason National Grid must decline to enforce any specific plan to address these incidents. However, as a contractual term, contractors are required to comply with all applicable laws, regulations and rules including conformance with the following minimum standards.

A. Equipment

Applicator crews should carry with them at all times a shovel, a broom, heavy duty plastic bags or other leakproof container, adsorptive clay and activated charcoal.

B. Spill Control and Cleanup

As soon as any spill is observed, immediate action must be taken to contain the spill and protect the spill area. The cause of the spill must be identified and secured. Spill containment may be accomplished by covering the spill with adsorptive clay or other adsorptive material or, for large spills, building clay or soil dikes to impede spill progress. Protection of the spill area until proper cleanup can be accomplished, by placing barriers, flagging or crew members at strategic

locations. If a fire is involved, care must be taken to avoid breathing fumes from any burning chemicals.

In the event of the occurrence of any spill, information on safety precautions and cleanup procedures may be gathered from the following sources:

- Herbicide label;
- Herbicide Material Safety Data Sheets;
- Herbicide manufacturer
 - Dow AgroSciences (800) 992-5994
 - Dupont (800) 441-3637 (Medical Emergencies)
 - Monsanto (314) 694-4000
 - BASF (973) 683-3100
- Massachusetts Pesticide Bureau - (617) 626-1700
- Massachusetts Department of Public Health (617) 624-5757
- Massachusetts Dept. of Environmental Protection
 - to report spills (617) 556-1133
 - Framingham State Police (508) 820-2121 after hours
- Chem Trec - (800) 424-9300
- EPA Pesticide Hotline - (800) 858-7378

1. Minor Spills

Cleanup of minor spills may be accomplished by soaking up the spill with adsorptive clay or other adsorptive material and placing it in leakproof containers for proper disposal. Dry herbicides, such as granulars, may be swept or shoveled up directly and placed in leakproof containers for proper disposal. All contaminated soil should be placed in leakproof containers, removed from the site and disposed of properly. Activated charcoal should be

incorporated into the soil at the spill location at a rate of seven pounds per thousand square feet to inactivate any residual herbicide.

2. Major Spills

Major spills are defined by DEP as reportable quantities of a hazardous material. Major spills should be handled in the same fashion as minor spills however, more equipment and materials may be required for cleanup and certain notifications are mandatory. If the spill is too large for the treatment crew to cleanup then, after containment and site protection is accomplished, a hazardous waste cleanup company should be contacted immediately and directed to the site. The Forester, DAR, as per 333 CMR 10.15(4) Record Keeping Requirements, DEP and any other persons or agencies stipulated in applicable Federal, State or municipal laws, regulations or rules must be notified as soon as practical.

XIII. Glossary

Allelopathic -- Plants that produce and exude chemicals that inhibit the growth of other plants.

Applicator(s) -- The person or piece of equipment that physically applies the herbicide solution to the target vegetation.

Application Zone -- Location on the target plant where the herbicide solution is applied.

Conductor Security Zone -- Specified area surrounding an electrical conductor into which encroachment of vegetation by growth or movement by wind or felling must be prevented. The radius of a zone is proportional to the voltage of the line.

<u>Voltage</u>	<u>Radius (Feet)</u>	
	<u>Vertical</u>	<u>Horizontal</u>
2.4 to 46 kV ac	8	8
69 kV ac	11	14
115 kV ac	11	14
230 kV ac	13	18
345 kV ac	15	22
450 kV dc	18	24

Croplands--Actively cultivated agricultural sites including, but not limited to, cultivated crops, orchards, Christmas tree plantations and tree nurseries.

Cut Surface Treatment--Herbicide application method in which the herbicide is applied only to the freshly cut surface of the stump of the target tree.

Danger Tree--Sideline trees that due to their species, location and physical condition pose a significant risk to a conductor or structure.

Data Sheet -- Report of essential information on the right-of-way such as road crossings, sensitive area descriptions, landowner considerations, etc.

Drip line--Area directly under the crown of a tree where precipitation that strikes foliage or branches would land.

Foliar Application--Herbicide application method in which the herbicide solution is

applied to the leaves and stems of the target trees.

FORGIS – Transmission Forestry Geographic Information System—Geographic mapping and tabular database system. The following abbreviations are employed:

ACC	Access:	Off right-of-way access road
CRP	Crop:	Cropland in active cultivation
FLD	Field:	Open mowed lawns, hay fields, etc
NOV	No Vegetation:	Gravel pit, parking lot, etc.
NUR	Nursery:	Maintained nursery stock
ORC	Orchard:	Fruit tree orchard
OWG	Owner General:	General information about certain landowners
OWN	Owner No Herbicide:	Area where herbicide is not used, per Landowner agreement
PAS	Pasture:	Animal pasture
PTN	Point Note:	Notes about certain off right-of-way conditions
PRW	Private well:	Private water supplies, encased or open spring
RDX	Road Crossing:	Special road crossing buffer where trees are maintained
RVX	River Crossing:	Certain river crossings where full sized trees are maintained
SCH	School:	Public or private school land where herbicide use is prohibited
SWS	Surface Water Supply:	Public surface water supply reservoirs and tributaries
XTR	Christmas Trees:	Maintained Christmas Tree farms
WWS	Well Water Supply:	Public well water supplies
YRD	Yard:	Residential or commercial yards with Maintained trees

Hand Cutting--Vegetation management method in which woody vegetation is felled through the use of hand tools, including chainsaws and brush saws.

Herbicide--Chemical used to control, suppress or kill plants or severely interrupt their normal growth processes.

Integrated Vegetation Management (IVM)--An adaptation of Integrated Pest Management (IPM) where the pest is vegetation. IPM is a system of controlling pests in which pests are identified, action thresholds are considered, all possible control options are evaluated and selected mechanical, biological and chemical controls are implemented.

Line -- Conductor, structures and related equipment located on a right-of-way in order to transmit electricity.

Removal -- Felling or killing of undesirable vegetation, or the movement of slash and debris from one site to another.

Slash -- All branches, tops, small diameter main stems and debris resulting from any cutting operation.

"T" Sheet -- Strip map of a right-of-way showing line features.

Target Vegetation -- Undesirable plants that will be removed or controlled during a treatment operation.

Undesirable Vegetation -- Woody plants that have the ability to grow tall enough to enter the conductor security zone, that hinder access on roads or pathways along the right-of-way or immediately around line structures or that are toxic or thorny and create a safety hazard to workers.

Appendix 1

333 CMR 11.00

Right-of-Way Management Regulations

333 CMR 11.00: RIGHTS OF WAY MANAGEMENT

Section

- 11.01: Purpose
- 11.02: Definitions
- 11.03: General Provisions
- 11.04: Sensitive Area Restrictions
- 11.05: Vegetation Management Plan (VMP)
- 11.06: Yearly Operational Plan (YOP)
- 11.07: Public Notification
- 11.08: Notice of Modification and Revocation
- 11.09: Right-of-Appeal
- 11.10: Penalties

11.01: Purpose

The purpose of 333 CMR 11.00 is to promote the implementation of Integrated Pest Management (IPM) Techniques and to establish those standards, requirements and procedures necessary to minimize the risk of unreasonable adverse effects on human health and the environment associated with the use of herbicides to maintain rights-of-way and to establish a statewide and uniform regulatory process. 333 CMR 11.00 establishes procedures which guarantee ample opportunity for public and municipal agency review and input on right-of-way maintenance plans.

11.02: Definitions

For the purpose of 333 CMR 11.00, the following definitions shall apply.

Agricultural Area, shall refer to, but not be limited to, actively cultivated gardens, greenhouses, orchards, fields, pastures, and other areas where herbicides might impact adversely on the vegetation under cultivation or agricultural management.

Applicant, shall refer to any person representing federal, state or local governments or agencies, utilities, railroads, pipelines, that intend to maintain a right-of-way by the application of herbicide.

Ballast, shall refer to the coarse gravel or crushed rock onto which the ties, tracks and any switching, signaling and communication devices of a railroad are laid.

Broadcast, shall refer to any non-selective herbicide application technique which results in application to all vegetation within a target area.

Department, shall refer to the Department of Food and Agriculture.

Foliar Treatment, shall refer to any technique which applies herbicide to leaves of the target vegetation.

Inhabited Area, shall refer to, but not be limited to residences, schools, hospitals, parks and recreational facilities or other areas in which humans generally live, work or gather.

Low Pressure, shall refer to pressure under 60 psi.

Maps, shall refer to maps which are of such accuracy and scale, as determined by the Department, to provide sufficient detail so that sensitive areas can be delineated, or which show bench marks or other permanent structures located on the right-of-way which allow the delineation of sensitive areas.

11.02: continued

Person, shall refer to, but is not limited to, an individual, association, partnership, corporation, company, business organization, trust, estate, the Commonwealth or its political subdivision, administrative agencies, public or quasi-public corporation or body, or any other legal entity or its legal representatives, agent or assignee, or a group of persons.

Person aggrieved, shall refer to any person who, because of an act or failure to act by the Department may suffer an injury in fact which is different either in kind or magnitude from that suffered by the general public and which is within the scope of the interests identified in these Regulations. Such person must specify in writing sufficient facts to allow the Department to determine whether or not the person is in fact aggrieved.

Primary Recharge Area, that land area delineated by Zone II as defined in 310 CMR 24.06 or in such cases as when the primary recharge area has not been designated it shall be, in the interim, be defined as a one half mile radius from the public drinking water supply well unless otherwise determined by the Department of Environmental Protection.

Right(s)-of-Way (ROW), for the purpose of 333 CMR 11.00 shall refer to any roadway, or thoroughfare on which public passage is made and any corridor of land over which facilities such as railroads, powerlines, pipelines, conduits, channels or communication lines are located.

Selective Application, shall refer to the application of herbicide, in such a manner that the delivery to the target vegetation is optimized and delivery to non-target vegetation and the environment is minimized.

Sensitive Areas, shall refer to any areas, within rights-of-way, including but not limited to the following, in which public health, environmental or agricultural concerns warrant special protection to further minimize risks of unreasonable adverse effects:

- (a) within the primary recharge area of a public drinking water supply well;
- (b) within 400 feet of any surface water used as a public water supply;
- (c) within 100 feet of any identified private drinking water supply well;
- (d) within 100 feet of any standing or flowing water;
- (e) within 100 feet of any wetland;
- (f) within 100 feet of any agricultural or inhabited area.

Stem Treatment, shall refer to any technique including stump, basal, stem, injection, banding, frill, girdle and any other treatment which delivers herbicide at low pressure to the stump, base or stem of the target vegetation.

Target Vegetation, shall refer to any plant species which has the potential to interfere with the operation of the rights-of-way.

Touch-up Application, shall refer to limited application of herbicides following an initial treatment, which is necessary to achieve the desired vegetation control.

Vegetation Management Plan (VMP), shall refer to a long term management plan for the applicant's right-of-way system which describes the intended program for vegetation control over a five year period.

VMP Advisory Panel, shall refer to the Vegetation Management Plan Advisory Panel as set forth in 333 CMR 11.05(4).

Yearly Operational Plan (YOP), shall refer to the yearly operational plan which describes the detailed vegetation management operation for the calendar year consistent with the terms of the long term Vegetation Management Plan.

11.02: continued

Water Supply, shall refer to any raw or finished water source that is presently used, reserved for future use, or under investigation for future use by a public water system as defined in 310 CMR 22.02, or used as a source of private drinking water by one or more persons. This shall include all land and waters used as, or tributary to, a public water system except those exempted under 310 CMR 22.20.

Wetlands, with the exception of land subject to flooding shall refer to areas subject to protection under M.G.L. c. 131, § 40 which include the following areas as defined in 310 CMR 10.02(1)(a) - (c):

- | | | |
|---|-----------|-------------|
| (a) Any bank, | | the ocean |
| any freshwater wetland, | | any estuary |
| any coastal wetland, | | any creek |
| any beach, | bordering | any river |
| any dune, | on | any stream |
| any flat, | | any pond |
| any marsh, | | or any lake |
| or any swamp | | |
| (b) Land under any of the water bodies listed above | | |
| (c) Land subject to tidal action | | |

11.03: General Provisions

- (1) No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way unless appropriately certified by the Department or unless appropriately licensed by the Department and working under the on-site supervision of an appropriately certified applicator.
- (2) No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way except in accordance with a Vegetation Management Plan (VMP) and a Yearly Operational Plan (YOP) as approved by the Department. Such documents shall be available at the work site at all times during herbicide applications and be made available to the Department and municipal officials including the Conservation Commission and Board of Health upon reasonable request.
- (3) No person shall handle, mix or load an herbicide concentrate on a right-of-way within 100 ft. of a sensitive area.
- (4) The perimeter of any sensitive areas which are not readily identifiable on the ROW shall be appropriately marked prior to any herbicide applications. The precise method used in marking these areas shall be identified in the VMP.
- (5) No foliar application of herbicides shall be used to control vegetation greater than 12 ft. in height except for side trimming.
- (6) No herbicide shall be applied when the wind velocity is such that there is a high propensity to drift off target and/or during measurable precipitation.
- (7) No person shall apply herbicides by aircraft for the purpose of clearing or maintaining a right-of-way.
- (8) No touch-up applications shall be carried out except under the following conditions:
 - (a) Touch-up applications must occur within 12 months of the date of approval of the YOP.
 - (b) The Department, the Conservation Commission, the Board of Health, and Chief elected official of the municipality shall be notified by certified mail at least 21 days prior to any application.

11.03: continued

- (c) No more than 10% of the initially identified target vegetation on the applicant's right-of-way in any municipality may be treated and the total amount of herbicide applied in any one year shall not exceed the limits specified by the label or Yearly Operational Plan.
- (d) The Department may impose such additional restrictions or conditions on the use of herbicides as it deems necessary to protect public health and the environment.
- (9) The Department will maintain mailing lists of individuals and groups desiring to obtain notices on various aspects of the Program.

11.04: Sensitive Area Restrictions(1) General

- (a) No more than the minimum labelled rate of the pesticide product for the appropriate site, pest, and application method shall be applied.
- (b) Herbicides applied in sensitive areas shall be applied selectively by low pressure foliar techniques or stem application.
- (c) No person shall apply herbicides for the purpose of clearing or maintaining a right-of-way in such a manner that results in drift to any area within ten feet of standing or flowing water in a wetland or area within 400 feet of a public drinking water supply well; or area within 100 feet of any surface water used as a public water supply; or area within 50 feet of a private drinking water supply identified in accordance with 333 CMR 11.04(2)(c)(3).
- (d) The Department, in cooperation with the Department of Environmental Protection, and subject to a Memorandum of Understanding will evaluate herbicides currently registered for use on rights-of-way and will distribute a list of herbicides recommended for use in sensitive areas and guidelines for their use. The Memorandum of Understanding will set forth a procedure for this evaluation based on all available data relative to environmental fate and toxicity. Such list, guidelines and procedures will be subject to review and comment by the Department of Public Health provided that such comments are provided to the Department within a reasonable time. The Department, on August 15 of the calendar year, will make available the list and guidelines to applicants and to the VMP Advisory Committee. Applicants proposing to use an herbicide which has been registered for use on rights-of-way but has not yet been evaluated pursuant to the provisions of the Memorandum of Understanding may request that such herbicides be evaluated pursuant to said provisions. For an herbicide which has been evaluated pursuant to the provisions of the Memorandum of Understanding, applicants proposing to use such herbicide in a manner inconsistent with the terms and conditions of use imposed in the guidelines may request a modification or waiver of such terms or conditions. A request for such modification or waiver shall provide a detailed rationale for use, including all relevant data including but not limited to environmental fate, efficacy and human health effects of the proposed herbicide. Such herbicides and/or uses shall be subject to the evaluation standards adopted by the Departments of Food and Agriculture and Environmental Protection in the Memorandum of Understanding.

Commentary

Applicants subject to the provisions of the Wetlands Protection Act, who wish to apply pesticides registered for use in Massachusetts to rights-of-way, may choose to apply herbicides determined to be suitable for use in sensitive areas in accordance with the provisions of the Memorandum of Understanding mentioned above or, alternatively, applicants may proceed pursuant to the provisions of 310 CMR 10.00 as authorized by M.G.L. c. 131, § 40.

11.04: continued

(e) The Department may impose such additional restrictions or conditions on the use of herbicides within or adjacent to sensitive areas as it determines necessary to protect human health or the environment. Such changes may be proposed by a municipal agency or individual during the public comment period.

(2) Water Supplies(a) Public Ground Water Supplies

1. No herbicides shall be applied within 400 feet of any public ground water supply well.
2. No herbicides shall be applied within the primary recharge area of a public ground water supply well except under the following conditions:
 - a. A minimum of 24 months shall elapse between applications; and
 - b. Herbicides shall be applied selectively by stem application or low pressure foliar techniques.

(b) Public Surface Water Supplies

1. No herbicide shall be applied within 100 feet of any surface water used as a public water supply.
2. No herbicide shall be applied between 100 feet and 400 feet of any surface water used as a public water supply except under the following conditions:
 - a. A minimum of 24 months shall elapse between applications; and
 - b. Herbicides shall be applied selectively by low pressure foliar techniques or stem application.

(c) Private Drinking Water Supplies

1. No herbicide shall be applied on or within 50 feet of any private drinking water supply identified in accordance with 333 CMR 11.04(2)(c)(3).
2. No herbicide shall be applied between 50 feet and 100 feet of any private drinking water supply identified in accordance with 333 CMR 11.04(2)(c)(3) except under the following conditions:
 - a. A minimum of 24 months shall elapse between applications; and
 - b. Herbicides shall be applied selectively by low pressure foliar techniques or stem application.
3. It shall be the responsibility of the applicant to adhere to the sensitive area restrictions around identified private wells. The applicant shall consult with the Department to identify private wells that are located within 100 feet of the rights-of-way. The Department shall request the location of private wells along the right-of-way from the Department of Environmental Management and local Boards of Health. Wells identified to be within 100 feet shall be kept on file by the applicant for delineation on the maps in the YOP and be listed in the YOP. The VMP must include the method of locating identified private wells in the field prior to the application of herbicides.

(3) Surface Waters

- (a) No herbicide shall be applied on or within ten feet of any standing or flowing surface water which is not a public water supply. No herbicides shall be applied between ten feet and 100 feet of any standing or flowing surface water which is not a public water supply except under the following conditions:
1. A minimum of 12 months shall elapse between application; and
 2. Herbicides shall be applied selectively by low pressure foliar techniques or stem application.

(4) Wetlands

- (a) No herbicide shall be applied on or within ten feet of a wetland.
- (b) No herbicide shall be applied between ten feet and 100 feet of a wetland except under the following conditions:
1. A minimum of 12 months shall elapse between applications; and
 2. Herbicides shall be applied selectively by low pressure foliar techniques or stem application.

11.04: continued

(c) Notwithstanding 333 CMR 11.04(4)(a), public utilities providing electric, gas, water, telephone, telegraph and other telecommunication services may apply herbicides on or within ten feet of a wetland in accordance with the following conditions:

1. Submission of a study, the design of which is subject to prior approval by the Departments of Food and Agriculture and Environmental Protection, evaluating impacts of proposed vegetation management programs on wetlands; and
2. A finding by the Department, after consultation with the Advisory Committee, that the proposed vegetation management program will result in less impacts to the wetland than mechanical control.
3. Notwithstanding the above, no herbicides shall be applied on or within ten feet of any standing or flowing water in a wetland.

(5) Inhabited and Agricultural Areas

- (a) No high pressure foliar herbicide applications shall be carried out within 100 feet of any inhabited area or any agricultural area during the growing season.
- (b) No foliar herbicide shall be applied within 100 feet of any inhabited area or any agricultural area during the growing season except under the following conditions:
 1. A minimum of 12 months shall elapse between applications; and
 2. Herbicides shall be applied selectively by low pressure foliar techniques or stem application.

11.05: Vegetation Management Plan (VMP)

(1) General.

- (a) Unless otherwise specified by the Department, all VMPs should be submitted by the applicant no later than September 1 prior to the calendar year of the proposed first year of maintenance. All approved VMPs shall take effect on January 1 unless otherwise specified by the Department, and shall be effective for a five year period unless otherwise modified, or revoked by the Department.
- (b) The VMP shall be presented on forms and/or format approved by the Department.

(2) Requirements. The VMP shall include but not be limited to the following:

- (a) General statement of goals and objectives of the VMP.
- (b) Identification of target vegetation.
- (c) Intended methods of vegetation management and rationale for use, including vegetation control techniques, equipment proposed for use and timing of applications and alternative control procedures.
- (d) Justification of herbicide applications proposed.
- (e) Methods, references and sources for identifying sensitive areas and control strategies proposed for sensitive areas.
- (f) Operational guidelines for applicators relative to herbicide use.
- (g) Identification and qualifications of individuals developing and submitting a plan.
- (h) A description of Integrated Pest Management Programs or other techniques/programs to minimize the amount and frequency of herbicide application.
- (i) Description of alternative land use provisions or agreements that may be established with individuals, state, federal or municipal agencies that would minimize the need for herbicide, including the rationale for accepting or denying any reasonable request made by any individual.
- (j) Remedial plan to address spills and related accidents.

(3) Public Notice, Review and Comment.

- (a) Upon receipt of the proposed VMP, the Department shall schedule and hold appropriate regional public hearings affording all interested parties the opportunity to comment on the proposed plan.
- (b) At least 21 days prior to the public hearings, the Department shall publish notice of the hearings in the Environmental Monitor and regionally located newspapers, and send notice to municipalities covered by the plan and to the appropriate mailing list. The notice will include locations where copies of the VMP can be reviewed.

11.05: continued

(c) The public shall have no less than 45 days, starting from publication of the Environmental Monitor notice, to comment upon proposed VMPs, unless the Department extends the comment period for good cause.

(d) At least 21 days prior to the end of the public comment period, the applicant shall send a copy of the proposed VMP to the chief elected official, the Board of Health and the Conservation Commission in affected communities upon their request.

(4) VMP Advisory Panel.

(a) There shall be a VMP Advisory Panel charged with the responsibility of reviewing Vegetation Management Plans and the accompanying public comments. The Panel shall recommend approval, denial or modification to the Department.

(b) The Panel shall consist of the Commissioner(s) or designees of the following Departments:

Department of Food and Agriculture, non-voting

Department of Environmental Protection

Department of Public Health

Department of Public Works and

Division of Fisheries and Wildlife, Natural Heritage Program

a representative appointed by the Commissioner of

DFA from each of the following groups:

Massachusetts Association of Conservation
Commissions;

Massachusetts Association of Health Boards;

University of Massachusetts/Extension Service;

railroads;

utilities;

applicator; and an

environmentalist

A member shall be appointed for a term of one, two or three years. Appointed members shall serve at the discretion of the Commissioner. No member shall serve more than six consecutive years. Appointed panel members shall serve without compensation and shall not be reimbursed for any expenses incurred by them in the performance of their duties. The Commissioner of the Department or designee shall serve as an ex officio non-voting member to the VMP Advisory Panel.

(c) The Department of Food and Agriculture's Representative shall chair the VMP Advisory Panel. This chairperson shall coordinate efforts of the Department and the Panel to process the VMPs.

(d) The VMP Advisory Panel shall conduct business in accordance with the time, place and procedures agreed upon.

(e) The VMP Advisory Panel shall review all complete VMPs including all written and public hearing comments. The Advisory Panel may, if necessary, request from the applicant additional information. Within 30 days of the end of the comment and review period, unless extended for good cause, the VMP Advisory Panel shall recommend to the Department in writing approval, denial or modification of each VMP.

(5) Disposition of VMP.

(a) 30 copies of the proposed VMP shall be submitted to the Department. The Department shall distribute copies of the proposed VMP to each member of the Advisory Panel.

(b) Within 30 days of the end of the public comment period unless extended for good cause, the VMP Advisory Panel shall review the VMPs and recommend in writing to the Department approval, denial or modification of each VMP; if necessary, the Panel may request from the applicant additional information.

(c) Within 21 days of the end of the VMP Advisory Panel review period, unless extended by the Department for good cause, the Department will notify the applicant and the Advisory Panel in writing one of the following:

1. request for additional information or modification; or
2. denial of VMP; or
3. approval of VMP.

11.05: continued

- (d) The VMP may be modified, withdrawn or amended by the applicant through a written request sent by certified mail to the Department.
 - (e) Resubmission of a denied VMP, updating of a VMP, or a significant amendment to an approved VMP shall be processed according to 333 CMR 11.05.
 - (f) The applicant must send a copy of the approved VMP to the chief elected official, Board of Health, and Conservation Commission in each municipality covered by the plan.
- (6) Time for Action. Non action on a Vegetation Management Plan within time specified herein does not constitute approval of the submitted plan. In the event that the Department fails to notify the applicant of a decision within the time specified above and upon written request from the applicant, the Commissioner must issue a finding within ten days of receipt stating the reason for the delay and providing an estimated completion date.

11.06: Yearly Operational Plan (YOP)

- (1) General.
 - (a) The applicant is responsible for the accuracy and completeness of all information submitted with the YOP. The YOP shall be consistent with the objectives of the VMP and shall describe the intended operational program for that calendar year.
 - (b) The YOP shall be presented on forms and/or format approved by the Department.
- (2) Requirements. The YOP shall include but not be limited to the following:
 - (a) Maps locating the ROW and Sensitive areas not readily identifiable in the field.
 - (b) Herbicides proposed including application rates, carriers, adjuvants.
 - (c) Herbicide application techniques and alternative control procedures proposed.
 - (d) The company which will perform any herbicide treatment.
 - (e) Identification of target vegetation.
 - (f) Individual representing applicant supervising YOP.
 - (g) Flagging methods to designate sensitive areas on the ROW.
 - (h) Herbicide Fact Sheets as approved by the Department.
 - (i) Procedures and locations for handling, mixing and loading of herbicide concentrates.
- (3) Public Notice, Review and Comment.
 - (a) Upon submittal of the YOP for approval, the Department will publish a notice in the Environmental Monitor. Said notice shall be provided by the applicant and shall include the information on the municipalities through which the rights-of-way pass, a brief description of the intended program, and the procedure for public review and comment. The Department will distribute copies of the Environmental Monitor notice to the appropriate mailing list and the applicant.
 - (b) The applicant shall provide by certified mail under separate cover to the Board of Health, Conservation Commission and chief elected municipal official a copy of the proposed YOP and the Environmental Monitor notice for the city or town in which the herbicide treatment is proposed. The applicant shall maintain copies of the packet sent to municipalities and certified mail receipts as part of the recordkeeping requirements, 333 CMR 10.15.
 - (c) The Department shall allow a 45 day comment period on proposed YOPs, unless extended for good cause, commencing with the publication of the notice in the Environmental Monitor and receipt of the proposed YOP and Environmental Monitor notice by each municipality.
 - (d) The Department may approve, deny or modify YOPs after the 45 day comment period has expired.
- (4) Disposition of YOP.
 - (a) The YOP shall be submitted by the applicant to the Department at least 90 days prior to the proposed commencement of application to allow completion of the comment period and review.
 - (b) The Department shall review the YOP to ensure that the YOP is consistent with the approved VMP. Any inconsistencies or deficiencies will be noted by the Department and returned to the applicant.

11.06: continued

(c) Where practical, the Department shall approve or deny the YOP within 90 days of receipt. The Department will provide notice of the decision to the applicant, municipal agencies and commentators in writing.

(d) The approved YOP in conjunction with the VMP shall govern the application of herbicide for a period not to exceed 12 months in accordance with other laws and regulations of the State and Federal governments and impose such conditions as necessary to minimize the risk of adverse effects on human health and the environment.

(5) Time for Action. Non action on a Yearly Operational Plan within the time specified herein does not constitute constructive approval of the submitted plan. In the event that the Department fails to notify the applicant of a decision within the time specified above and upon a written request from the applicant the Commissioner must issue a finding within ten days of receipt stating the reason for the delay and providing an estimated completion date.

11.07: Public Notification

The applicant shall provide by certified mail under separate cover, at least 21 days in advance of the application of herbicide to the right-of-way, a notice to the Department and to the Mayor, City Manager or Chairman of the Board of Selectman, the Board of Health, and the Conservation Commission in the municipality where the right-of-way lies. The notice shall include but not be limited to the approximate date on which such spraying shall occur, provided however, that said spraying shall not conclude more than ten days after said approximate date; a copy of a DFA approved Herbicide Fact Sheet on the active ingredient(s) of the herbicide(s) used; the name and address of contractor who will make the application or the name of the certified employee who will make the application.

This notice may run concurrently with the public notice and comment period in 333 CMR 11.06(3) provided the application is made after the close of the public notice and comment period and all modifications to the YOP are made before the application takes place and approval is granted by the Department.

11.08: Notice of Modification and Revocation

(1) The Department may suspend approval of any VMP or YOP, by written notice to the applicant and applicator, halting the application of herbicide to that right-of-way of the above mentioned YOP. After 21 days if the applicant does not request a hearing, the Department may revoke or modify the VMP and YOP, if it finds:

- (a) that the terms, conditions of restrictions thereof, are being violated or are inadequate to avoid unreasonable adverse effects on the environment or on human health; or
- (b) that the applicant has made a false or misleading statement in the VMP or YOP; or
- (c) that the applicant has violated any provision of the Massachusetts Pesticide Control Act or FIFRA, or any regulations, standards, orders or license issued under either.

(2) Upon notice of revocation or modification, the applicant may modify the YOP by written request to the Department. Applications to modify the YOP shall be submitted in the manner set forth in 333 CMR 11.06 and disposed of in the manner set forth in 333 CMR 11.06. The Department may waive all or part of the requirement if it determines that the proposed changes do not significantly change the terms of the approved YOP.

11.09: Rights of Appeal

Any person aggrieved by the decision of the Department to approve, deny, modify or revoke a Vegetation Management Plan or a Yearly Operational Plan may request an adjudicatory hearing. The request for a hearing must be sent to the Department by Certified mail or hand delivered within 21 days after the date of decision or notice by the Department. At the same time the request for a hearing must be sent by Certified mail or hand delivered to the applicant and the Pesticide Board. The request should state clearly and concisely the facts of the proceeding, the reasons the decision is alleged to be inconsistent with 333 CMR 11.00 and the relief sought by the adjudicatory hearing. The adjudicatory hearing before the Pesticide Board shall be conducted as set forth in M.G.L. c. 30A and M.G.L. c. 132B, § 13.

11.10: Penalties

Any person who violates any provision of 333 CMR 11.00 shall be subject to the criminal and civil penalties set forth in M.G.L. c. 132B, § 14.

REGULATORY AUTHORITY

333 CMR 11.00: M.G.L. c. 132B.

Appendix 2
NEPOOL Right-of-Way
Vegetation Management Standard

NEPOOL RIGHT-OF-WAY VEGETATION MANAGEMENT STANDARD

February 8, 1999

I. OBJECTIVE

In order to achieve and maintain a high degree of reliability for the New England interconnected transmission system, the NEPOOL Transmission Operations Committee adopts the following standard for vegetation management of rights-of-way.

II. GENERAL

One of the factors affecting reliability is the control of vegetation in and near the transmission rights-of-way. The Vegetation Management Standards Task Group has established right-of-way clearing standards for transmission lines that are important to the New England bulk power supply system. These standards apply to original clearing for line construction and ongoing preventive maintenance.

It is recognized that individual company rights-of-way vegetation management practices vary for a number of valid reasons. Initially, rights-of-way are generally clear-cut to facilitate construction. Thereafter, ongoing preventive maintenance is necessary to maintain a low growing plant community. The general practice in most areas is to maintain as much growth of non-interfering species as necessary for visual screens at road crossings, residential yards adjacent to sensitive areas, or at locations such as ravines or river crossings where conductors are higher than normal above ground, with clear-cutting restricted to structure locations and along access roads.

Due to regulatory, economic and environmental considerations, transmission lines within New England are presented with a variety of vegetation control issues. Many areas require "buffers" or "screens" at highway crossings and other sensitive locations such as residential yards and agricultural areas. These areas will require special attention. Despite these compromises, vine, shrub and tree growth in selectively cut locations must not be allowed to develop to the point that they seriously hamper access to structures.

This standard establishes clearances, patrol cycles and best management practices to limit tree caused risk to the transmission lines. This standard does not suggest that all tree caused outages will be eliminated. The political, social and environmental expectations placed on utilities in New England prevent the clearing required to guarantee total system protection from falling trees. In severe weather events (hurricanes, micro-bursts, tornados and ice storms) trees may fail and fall into the lines.

III. CLEARANCE BETWEEN CONDUCTORS AND VEGETATION

The clearances established herein between conductor and vegetation are not intended to change the practices of individual Transmission Providers. These are the standard clearances that all companies will seek to maintain. Any company policy or practice which establishes clearances equal to or greater than specified herein is acceptable. It is also recognized that in certain situations, rights may not be obtainable from property owners to remove trees adjacent to the right-of-way. In these situations, other solutions should be explored. Transmission Providers will have one full maintenance cycle to become fully compliant with any changes adopted to this standard. One full maintenance cycle is usually 4-6 years for vegetation growing within the right-of-way and 10 years for vegetation growing from outside the edge of the right-of-way.

The standard clearances between conductors and vegetation are diagramed on the attached sketch: Standard Clearance Between Conductors and Vegetation.

In addition to establishing and maintaining clearance from vegetation growing into conductors, danger trees can develop along the edges of rights-of-way. Danger trees are defined as sideline trees that due to their species, location and physical condition pose a significant risk to a conductor or structure. Best management practices will utilize contemporary forestry and arboricultural practices to mitigate the risk from danger trees.

IV. RIGHT-OF-WAY INSPECTION STANDARDS

Growth rates of vegetation vary due to species, soil, site and climatic conditions. It is therefore required that each critical line be periodically patrolled for the specific purpose of detecting locations where minimum clearances are approached.

A. Frequency

1. Scheduled patrols shall be the responsibility of each Transmission Provider.
2. An aerial or foot patrol shall be performed at least once a year to determine where vegetation is not in compliance with the standard clearances. If an aerial patrol is utilized, it shall be followed, where necessary, by a foot patrol.

B. Nature of Vegetation Patrol

1. Observe and record all vegetation conditions which might immediately affect the operation or maintenance of the lines.

2. The following list is representative of observations to make:
 - a. Heights of vegetation in the transmission corridor.
 - b. Clearance of road crossing screens/buffers.
 - c. Vegetation which is not in compliance with standard clearances.
 - d. Any evidence of vegetation-conductor contact or burning caused by contact.
 - e. Trees which because of their condition are an immediate threat to the lines.

C. Action Following Patrols

When vegetation is not in compliance with the standard, action shall be initiated within a reasonable time frame to obtain the conductor to vegetation clearance described in this Appendix.

V. EXCEPTIONS TO THE STANDARDS

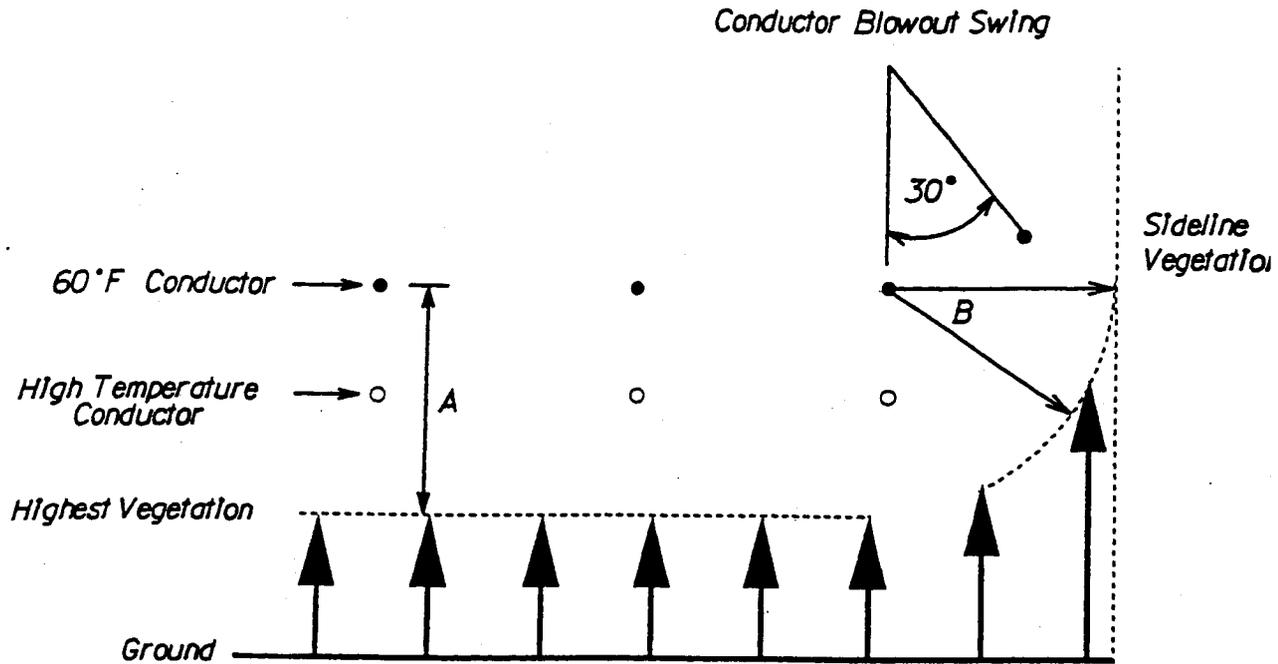
The NEPOOL Regional Transmission Operations Committee recognizes that unusual local circumstances may occasionally justify deviations from these standards. The Transmission Provider is expected to bring such conditions to the attention of the committee. The reported deviations will be limited to cases where conditions exist over the entire length or significant length of a line, not individual spans.

VI. SUMMARY

It is commonly recognized that vegetation can contribute to electrical disturbances on transmission lines. Vegetation Management practices on rights-of-way vary throughout New England for many reasons. This standard establishes clearances, patrol cycles and best management practices as the criteria necessary to contribute to overall system reliability. Historically, similar NEPOOL guidelines have proven to be effective in achieving a high degree of system reliability.

PREPARED BY: VEGETATION MANAGEMENT STANDARDS TASK GROUP

RECOMMENDED CLEARANCE BETWEEN CONDUCTOR AND VEGETATION



Line Voltage	A (feet)	B (feet)		
		500 ft.span	750 ft.span	1000 ft.span
69/115kV	11	14	20	29
230kV	13	18	26	36
345kV	15	22	30	43

Footnotes:

- A Vertical clearance of 6, 8 and 10 feet for 69/115, 230 and 345kV, respectively, plus sag of 5 feet during high temperature operations.
- B Horizontal clearance of 6, 8 and 10 feet for 69/115, 230 and 345kV, respectively, plus 30 degree blowout at span lengths shown, 6 pounds per square foot wind at 60 degree F.
- A & B In certain circumstances where above assumptions do not apply, more or less clearance may be required to meet the clearance of 6, 8 and 10 feet for 69/115, 230 and 345kV, respectively.

Appendix 3

Department of Food and Agriculture
Wetland Decision



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF FOOD AND AGRICULTURE
100 CAMBRIDGE ST., BOSTON, MA 02202 617-727-3000 FAX 727-7235

WILLIAM F. WELD
Governor

ARGEO PAUL CELLUCCI
Lt. Governor

TRUDY COXE
Secretary

JONATHAN L. HEALY
Commissioner

**Decision Concerning
The Wetland Impact Study Conducted
Pursuant to 333 CMR 11.04(4)(c)(2)**

**PUBLIC UTILITY VEGETATION
MANAGEMENT PROGRAM FINDING**

Background

The Rights of Way Management (ROW) Regulations (333 CMR 11:00) promulgated in 1987 prohibit the use of herbicides to control vegetation along utility right of ways on or within ten (10) feet of a wetland unless the following conditions are met:

1. Submission of a study, the design of which is subject to prior review and approval of the Departments of Food and Agriculture and Environmental Protection, evaluating impacts of proposed vegetation management programs on wetlands; and
2. A finding by the Department, after consultation with the Advisory Committee, that the proposed vegetation management program will result in less impacts to the wetland than mechanical control.
3. Notwithstanding the above, no herbicides shall be applied on or within ten feet of any standing or flowing water in a wetland.

On April 28, 1988, The Departments of Food and Agriculture and Environmental Protection approved the scope of the study. In the fall of 1989, Environmental Consultants, Inc. submitted to the Department of Food and Agriculture the study entitled, "Study of the Impacts of Vegetation Management Techniques on Wetlands for Utility Rights-of Way in the Commonwealth of Massachusetts", dated June 1989. The Department consulted with the Vegetation Management Plan (VMP) Advisory panel at their November 15, 1989, December 7, 1989 and August 1, 1991 meetings.

The study provided some broad information of vegetation control along utility right of ways. The Department based its finding solely upon the narrow scope of whether the "proposed vegetation management program will result in less impacts to the wetland than mechanical control."

The following are the major evaluation points the Department considered in reaching its decision.

What are the Long-term and Short-term Impacts From Herbicide use and Mechanical Control?

Since wetlands are not a static, unchanging resource, there is some difficulty in determining the actual long-term impacts from the various vegetation control practices. The extent of wetland alterations must be the most important factor in determining impacts. With limited or selective removal of unwanted plant species in specific locations, it appears that long-term impacts are negligible. While mowing or foliar application can damage non-target species, neither control practice appears to result in adverse long-term impacts if they are carefully executed. Clear cutting, however, has a greater impact on wetlands since both wanted and nuisance species are removed.

Although there were some reservations about the sites that were chosen to determine the level of chemical residues, the study did show that there was not a buildup of background residues of herbicides applied from previous practices. However, there were some trace amounts of petroleum products - bar oil or hydraulic fluid found. The source of these petroleum products is unclear and may have been the result of public activities not related to vegetation management. Retrospective analyses for herbicide residues in previously treated wetland areas is not generally applicable since the herbicides used today are less persistent than those which were used previously. However, these analyses did indicate that the herbicides used in the past do not persist in the environment.

The study clearly demonstrated that adjacent non-controlled wetland areas did not differ significantly in composition and abundance of plant species from the controlled areas. The control practices did not appear to impact the entire wetland ecosystem, since a long-term comparison of wetland plant species composition between controlled and non-controlled sites did not differ significantly. Therefore, the long-term effects on the entire wetland ecosystem were considered negligible.

The determination of the short-term impacts to the wetland from the control practices was the most noted short-coming of the study. However, this was not part of the original scope. The VMP Advisory Panel felt, and the Department agreed, that a short-term environmental fate study would be needed.

The first study indicated that certain mechanical control practices can impact wetlands and disrupt the ecosystem to a greater extent than the judicious use of herbicides. While cutting may result in re sprouting of some unwanted vegetation in a manner unlikely to be encountered in unaltered wetland areas, unregulated mechanical vegetation control could result in the destruction of other non-target plant species.

What is the Impact to Non-target Wetland Plant Communities?

Basal and cut stump treatment with low mobility, short persistence herbicides that are judiciously applied usually do not impact adjacent plant species. Likewise careful selective mechanical cutting (versus mowing or clear cutting) also usually does not impact non-target wetland plants. The greatest potential risk to non-target wetland plants comes from mowing, clear-cutting, and high volume foliar applications. Low volume foliar applications in wetlands may also cause non-target impacts if application guidelines are not followed (e.g. no applications during high winds, or without using anti-drift agents, etc.).

Is There Enough Information on Which to Base a Finding?

As in most environmental assessments, a complete database is not available to answer all of the questions posed by the Department and the Vegetation Management Advisory Panel. Some of the questions posed were entirely valid, but were beyond the scope of the approved study.

The study did provide some clear evidence that selective mechanical and herbicide use does minimally alter wetlands by removing specific plant species. Mechanical mowing operations, however, can result in far greater short-term and potentially long-term impacts to wetlands since both wanted and un-wanted plant species are indiscriminately removed. Additionally, foliar herbicide applications may cause short-term impacts to non-target species.

The Department did not find any significant difference in wetland impacts between careful mechanical removal (selective hand cutting) of unwanted species

and, cut stump or basal treatment with herbicides.

There is no assurance that prohibiting the use of herbicides in wetlands will result in careful mechanical control. If herbicide use is prohibited in wetland areas, mechanical control in wetlands will be the only practice available to utilities. Financial pressures and other considerations may force Utilities to increase mowing and / or the use of more destructive non-chemical control practices due to a lack of alternative control techniques.

On August 29, 1991, the Department made a finding that the submitted study met the approved scope. However, although the study contained useful information, it was also determined that additional data needed to be gathered and analyzed because the study was inconclusive in a number of instances.

The Department issued a finding that a proposed vegetation program containing the specific elements listed does not pose an unreasonable adverse impact to wetlands. In addition, the Department required a study be conducted to provide important environmental fate data necessary for the long-term implementation of the rights of way program.

AUGUST 1991 FINDING

The Department of Food and Agriculture finds that a proposed vegetation program containing the following elements will not pose an unreasonable adverse impact to wetlands:

- 1. The Integrated pest Management (IPM) system, as described in the Vegetation Management Plan and Yearly Operation Plan, is utilized in wetland areas. The IPM system must, at a minimum, place emphasis on encouraging low growth plant species to discourage unwanted vegetation and, minimizing the frequency and amount of herbicide use by only controlling specific non-conifer tree species which will impact transmission line operation and access to the right of way.*
- 2. Herbicides may be applied by basal, cut stump or low volume foliar methods. Foliar applications must include the use of drift reduction agents. Foliar applications may only be conducted in situations where basal and cut stump treatments are not appropriate based on the size of the vegetation and potential for off-target drift. Foliar applications must not result*

in the off-target drift to non-target species.

3. *Herbicides are not applied to conifer species (pine, spruce, fir, cedar and hemlock).*
4. *Carriers for herbicides do not contain any of the following petroleum based products: jet fuel, kerosene or fuel oil. Carriers will be subjected to review by the Department of Food and Agriculture and DEP through 333 CMR 11.04(1)(d).*
5. *Herbicides must be recommended by the Department of Food and Agriculture and DEP through 333 CMR 11.04(1)(d).*
6. *Herbicides may only be applied by hand operated equipment containing no more than 5 gallons of diluent.*
7. *All other restrictions within sensitive areas remain in effect. In accordance with 333 CMR 11.04(1)(c), no person shall apply herbicides for the purposes of clearing or maintaining a right-of-way in such a manner that results in drift to any areas within 10 feet of standing or flowing water in a wetland or area within 400 feet of a public drinking water supply well; or area within 100 feet of any surface water used as a public water supply; or area within 50 feet of a private drinking water supply identified under 333 CMR 11.04(2)(c)(3).*
8. *Approved Vegetation Management Plans and Yearly Operation Plans must be amended as needed to reflect the conditions of this FINDING.*
9. *The Department further requires that environmental fate data be provided by the utilities that are applying herbicides to rights-of-way, which characterizes the movement of herbicides applied to wetland areas under these conditions. The Department further requires that all study protocols be reviewed by the Vegetation Advisory Panel and be approved by the Department of Food and Agriculture and the Department of Environmental Protection. Failure to submit the required information by the dates outlined in the schedule below will render this finding void.*

An approvable scope of the study developed and

submitted by January 1, 1992.

Field data submitted to DFA by October 1, 1992. Data must be consistent with the requirements of the approved scope.

Draft study report submitted to DFA by October 1, 1993.

Final Report submitted to DFA by March 1, 1994.

10. *The Department reserves the right to amend or withdraw its FINDING at anytime if it determines that the use of herbicides in wetland areas poses a greater impact than mechanical control or may pose an unreasonable adverse effect to humans or the environment.*
11. *This finding expires December 31, 1994.*

Therefore, herbicide use may be allowed to control certain vegetation along utility right of ways if the proposed vegetation program as described in the approved Vegetation Management Plan and Yearly Operational Plans contains the above elements.

On, April 27, 1992, the Departments of Food and Agriculture and Environmental Protection approved the scope of the "*Study of Fates of Herbicides in Wetlands on Electric Utility Rights of Way in the Massachusetts Over the Short Term*". The final report was submitted to the Department of Food and Agriculture December 31, 1993. The Department began reviewing the report in consultation with the VMP Advisory panel.

At the end of 1994, the Department had not completed its review. Therefore, on December 22, 1994 the Department extended the current finding for one year (to December 31, 1995) or until such time it is able to make a final determination, whichever occurs first.

Fates of Herbicides Over the Short Term Study

The objective of this study was to determine the short term environmental fate and assess the impacts of selected herbicides applied by four common Right-of-Way management techniques. Additionally, the study evaluated which of the four Right-of-Way management techniques provides the most effective control of target vegetation and which techniques produced the least impact on the non-target plant community, and consequently the least alteration of wooded wetland community.

The study investigated the environmental fate of two herbicides, which are typically used to control vegetation on ROWs, and are included in the list recommended for use in sensitive areas. These herbicides were chosen, among other reasons, for their use patterns, size of area treated, and application rates. Accord, which contains the active ingredient glyphosate, is the primary herbicide used for cut stump treatment and is also used for foliar application. Garlon 4, which contains the active ingredient triclopyr, is the primary herbicide used for basal applications. Collectively these products represent the typical herbicides used to control vegetation on ROWs.

Results

A summary of the most important findings and conclusions of the study include:

* Based upon the samples collected immediately after application, at 1 week, 1 month, 3 months and 1 year:

- The two herbicides, glyphosate and triclopyr degrade rapidly. Residues reach low quantities quickly, often less than detection limits, within a year.; and
- There is essentially no movement either laterally or vertically from the treated sites by glyphosate. Triclopyr does not move laterally, but was noted to move vertically in small amounts.

* Drift cards indicate that the herbicides are neither splashed nor carried any distance by the wind. Glyphosate drift is not a significant problem resulting in slight effects on neighboring vegetation and are not detectable in the next year's growth. Sphagnum moss next to trunks treated basally with triclopyr were killed within three months in a 15 cm diameter circle immediately around the target tree, but the dead circle did not continue to enlarge.

* Filter paper recovered immediately after application of herbicide showed that all methods of application deposit herbicide on the ground. Treated bare soil samples showed as consistent a drop in herbicide concentrations and as little vertical movement as did samples beneath target trees.

* The use of the herbicides glyphosate and triclopyr at the strengths and application rates used does not pose a risk of accumulation in organically rich soils.

* Herbicide concentrations in soil continue to decline as time advances.

* Rainfall occurring more than a week after application does not appear to spread the herbicide nor does groundwater carry any substantial fraction of what has been applied to a particular site down into the soil or horizontally.

* Based upon the results of the study, an assessment of the environmental fate, and observations of both treatment effectiveness and non-target impacts, an effective and environmentally sensitive ranking from most effective and posing least potential environmental risks to least effective and posing the most environmental risk is suggested:

1. Most effective control and exclusive effect on target:
low-volume foliar (with glyphosate).
2. Most consistent control with lethal effects on bordering vegetation:
high-volume foliar (with glyphosate)
3. Total control with rings of dead vegetation around treated trunks:
low-volume basal (with triclopyr)
4. Incomplete target control and leaving largest soil residues:
cut-stump (with glyphosate)

It is important to note that the results of the second short term study suggest that the most efficacious application techniques and which pose the lowest environmental risk were not those recommended in the interim finding.

DEPARTMENT DETERMINATION

Based upon the results of the two ROW impact studies, the general information in the literature, and after consultations with the Vegetation Management Panel, the Department finds that the following proposed vegetation management program will result in less impacts to wetlands than exclusive use of mechanical control methods. Therefore, the Department finds that any vegetation management program that incorporates the conditions under which the study was conducted as well as taking into account the results of previous studies, will result in the least impacts to wetlands.

These conditions include:

1. An Integrated Pest Management (IPM) system, also known as Integrated Vegetation Management (IVM), as described in the Vegetation Management Plan and Yearly Operation Plan is utilized in wetland areas. The IPM system must, at a minimum, place emphasis on encouraging low growth plant species to discourage unwanted vegetation and, minimizing the frequency and amount of herbicide use by only controlling specific non-conifer tree species which will impact transmission line operation and access to the right of way.
2. Herbicides may be applied by low volume foliar, basal, or cut stump methods. Foliar applications must include the use of appropriate drift reduction agents, and must not result in the off-target drift to non-target species. Basal and cut-stump treatments may be conducted in those situations where the size of the vegetation, potential for off-target drift, or other considerations precludes the use of low-volume foliar applications. Cut stump and basal applications shall be restricted, when practicable, to periods when static ground water levels are low or otherwise when conditions are less susceptible to potential contamination.
3. Herbicides are not applied to conifer species (pine, spruce, fir, cedar and hemlock).
4. Carriers for herbicides do not contain any of the following petroleum based products: jet fuel, kerosene or fuel oil. Carriers will be subjected to review by the Department of Food and Agriculture and DEP through 333 CMR 11.04(1)(d).

5. Only herbicides recommended by the Departments of Food and Agriculture and Environmental Protection through 333 CMR 11.04(1)(d) may be used in sensitive areas.
6. Herbicides may only be applied by hand operated equipment containing no more than 5 gallons of diluent.
7. All other restrictions within sensitive areas remain in effect. In accordance with 333 CMR 11.04(1)(c), no person shall apply herbicides for the purposes of clearing or maintaining a right-of-way in such a manner that results in drift to any areas within 10 feet of standing or flowing water in a wetland or area within 400 feet of a public drinking water supply well; or area within 100 feet of any surface water used as a public water supply; or area within 50 feet of a private drinking water supply identified under 333 CMR 11.04(2)(c)(3).
8. A minimum of twelve months must elapse between herbicide treatments. Only touch-up applications may be performed between twelve and twenty four months.
9. Approved Vegetation Management Plans and Yearly Operation Plans must be amended as needed to reflect the conditions of this determination.

.....

Therefore, herbicide use may be allowed to control certain vegetation along utility right of ways if the proposed vegetation program as described in the approved Vegetation Management Plan and Yearly Operational Plans contains the above elements.


Jonathan Healy, Commissioner

10/12/95
Date

Appendix 4

Memorandum: DAR/DEP Recommended Herbicides in Sensitive Areas

National Grid will adhere to the current list of “approved” herbicides for use in sensitive areas on ROW published by the **Department of Agricultural Resources** and the **Department of Environmental Protection**.

National Grid will adjust its program to meet any changes in the department’s list of approved herbicides for use in sensitive areas.

Appendix 5

Listing of Municipalities through which National Grid Manages Rights-of-Way

Methuen	Quincy	Swansea
Middleton	Randolph	Taunton
Milford	Raynham	Templeton
Millbury	Reading	Tewksbury
Millville	Rehoboth	Topsfield
Monroe	Revere	Tyngsborough
Monson	Richmond	Upton
Montague	Rockland	Uxbridge
Nantucket	Rockport	Wakefield
Newbury	Rowe	Walpole
Newburyport	Rowley	Ware
New Salem	Royalston	Warren
North Adams	Rutland	Warwick
Northampton	Salem	Webster
North Andover	Salisbury	Wendell
North Attleborough	Saugus	Wenham
Northborough	Scituate	Westborough
Northbridge	Seekonk	West Boylston
North Brookfield	Sharon	West Bridgewater
North Reading	Sheffield	West Brookfield
Norton	Shelburne	Westford
Norwell	Shirley	Westminster
Oakham	Shrewsbury	West Newbury
Orange	Shutesbury	Westport
Oxford	Somerset	West Stockbridge
Palmer	Southborough	Weymouth
Paxton	Southbridge	Wilbraham
Peabody	Spencer	Williamstown
Pelham	Sterling	Wilmington
Pembroke	Stockbridge	Winchendon
Pepperell	Stoughton	Whitman
Petersham	Sturbridge	Worcester
Phillipston	Sunderland	Wrentham
Plainville	Sutton	
Princeton	Swampscott	

Abington	Conway	Hanover
Adams	Danvers	Hardwick
Amesbury	Deerfield	Harvard
Andover	Dighton	Harwich
Ashburnham	Douglas	Haverhill
Athol	Dracut	Heath
Attleboro	Dudley	Hingham
Auburn	Dunstable	Holbrook
Avon	East Bridgewater	Holden
Ayer	East Brookfield	Hopedale
Barre	Easthampton	Hubbardston
Belchertown	East Longmeadow	Hull
Bellingham	Easton	Lancaster
Berkley	Egremont	Lanesborough
Berlin	Erving	Lawrence
Bernardston	Everett	Lee
Beverly	Fall River	Leicester
Billerica	Fitchburg	Lenox
Blackstone	Florida	Leominster
Boxford	Foxborough	Leverett
Boylston	Franklin	Leyden
Bridgewater	Gardner	Littleton
Brimfield	Georgetown	Lowell
Brockton	Gill	Ludlow
Brookfield	Gloucester	Lunenburg
Buckland	Grafton	Lynn
Charlémont	Granby	Lynnfield
Charlton	Great Barrington	Malden
Chelmsford	Greenfield	Mansfield
Chelsea	Groton	Marlborough
Cheshire	Groveland	Medford
Clarksburg	Halifax	Medway
Clinton	Hampden	Melrose
Cohasset	Hancock	Mendon
Colrain	Hanson	Merrimac

Appendix 6

Workmen Compensation Claim Injuries Compiled by

Vegetation Control Service, Inc.

Athol, Massachusetts

Workmen's Compensation Claim Injuries
From 1976 thru 1983

Compiled by: Vegetation Management Control Service, Inc.
Athol, Massachusetts

These statistics have been compiled from injuries reported in Workmen's Compensation Claim records on file at Vegetation Control Service, Inc., (VCS). VCS is one of the Companies' major right-of-way vegetation management contractors. These figures represent claims from 1976, when hand cutting first became a significant segment of the total work VCS performed, until 1983, when this data was compiled for submission to the Task Force advising Harrison Biotech, Inc., in the preparation of the "Generic Environmental Impact Report on the Control of Vegetation on Utility and Railroad Rights-of-Way in the Commonwealth of Massachusetts.

I	Herbicide Application Injuries	
A.	Direct Chemical Injuries	
1.	Pneumonia (caused by fuel oil sprayed in nose during a fall)	1
2.	Eye irritation (pure product splashed in eye during mixing)	1
	Total Direct Chemical Injuries	<u>2</u>
B.	Other Herbicide Application Related Injuries	
1.	Falls injuring:	
	back	8
	knee	4
	leg	4
	hand	3
	hip	2
	shoulder	2
	elbow	1
	neck	1
	ankles	1

2.	Muffler burns	5
3.	Eye injuries from brush and briars	4
4.	Rash and itching	1
5.	Rash	3

Total Other Herbicide Application
Related Injuries 39

II Mechanical Cutting Injuries

A. Chair saw cuts:

leg	12
knee	14
hand	9
head	1

Total Chain Saw Cuts 36

B. Other Mechanical Cutting Injuries:

1. Moving brush injuries:

back	5
knee	2
hand	1
shoulder	1

2.	Broken arm	1
3.	Wood chips/branch in eye	15
4.	Stick in ear	1
5.	Branch striking leg	1
6.	Contact with energized conductor	1

Total Other Mechanical Cutting Injuries 28

III Miscellaneous Injuries

A.	Strains, Sprains, Cuts, Bruises, Allergies	17
B.	Cuts from Axes	3
C.	Poisonous Plants/Insects	27
D.	Vehicle Accidents	2

Total Miscellaneous Injuries 49

Appendix 7

Land Use Conversion

RIGHT-OF-WAY MAINTENANCE
LAND USE CONVERSION AGREEMENT

_____ (the "Company") and _____ (the "Owner") hereby agree to the following terms and conditions governing vegetation management on that portion of the Company's _____ right-of-way which crosses Owner's property in _____, _____.

1. The Company agrees to refrain from applying herbicides on that portion of the right-of-way which crosses Owner's property, as shown shaded on sketch "A" attached hereto and made a part hereof.
2. For that portion of the right-of-way on which the Company has agreed to refrain from applying herbicides, as set forth in paragraph 1 of this Agreement, the Owner agrees:
 - a. To initially remove all woody vegetation and all woody vegetation stumps; and
 - b. To thereafter ensure that vegetation does not, in the opinion of the Company, intrude upon, interfere with, or endanger any pole, structure, line, or other Company equipment located in, over, upon, or through the right-of-way, to wit:
 - i. No woody vegetation shall be permitted to extend more than _____ feet in height; and
 - ii. No woody vegetation shall be permitted to grow within a five (5) foot radius of Company poles, Company structures or other Company equipment that is affixed to the ground.
3. The Company agrees to pay the Owner \$_____ per acre of land on the right-of-way once all woody vegetation and all woody vegetation stumps have been initially removed from the right-of-way, as specified in paragraph 2.a. above.
4. The Owner agrees to maintain a pathway on the right-of-way as follows:
 - a. Said pathway shall extend the length of the right-of-way, commencing at _____ and continuing to _____, and shall be uniformly _____ feet in width, all as shown on attached sketch "A";
 - b. All woody vegetation and all woody vegetation stumps shall be removed initially from said pathway; and
 - c. At least once during each calendar year all woody vegetation which is located upon said pathway or which is encroaching upon said pathway shall be removed.
5. The owner agrees to refrain from taking any action which would restrict Company access to the right-of-way, including, but not limited to, the following:
 - a. The Owner agrees to refrain from erecting a fence, unless Company access to the right-of-way is assured by means of a gate of _____ feet in width; and

- b. The Owner agrees to allow the Company to attach a Company lock to any gate now in existence or hereinafter placed on the pathway, as described in paragraph 3 of this Agreement.
- 6. In the event that the Owner fails to comply with the conditions set forth in paragraph 2 or 4 of this Agreement, the Company shall have the right to enter the right-of-way and to clear the right-of-way of vegetation by any appropriate means, including the use of herbicides, at the Owner's expense.
- 7. In fulfilling his obligations under this Agreement, the Owner agrees to comply with all federal, state or local laws, regulations, or ordinances, and the Owner agrees to obtain any and all permits, licenses, orders, and/or any other authorizations that are required in order to do the work specified in this Agreement.
- 8. The Owner agrees to indemnify the Company and forever save harmless the Company, its officers, directors, agents, employees, successors and assigns from any loss, cost, damage, or liability of any kind resulting from or in any way referable to this Agreement or to the exercise thereof. The Owner also releases the Company, its officers, directors, agents, employees, successors and assigns from any and all claims and demands which result from injuries to persons or damage to property while on the right-of-way, including, but not limited to, any and all claims and demands arising from damage to crops being grown upon the right-of-way.
- 9. The Company reserves the right to terminate this Agreement for failure to comply therewith or for any other reason upon thirty (30) days' notice to the Owner.

This agreement is neither assignable nor transferable by Owner, and shall terminate upon the Owner's death.

OWNER

NEW ENGLAND POWER COMPANY

_____ By

Date

Title

Date

Appendix 8

Landowner Maintenance

LANDOWNER RIGHT-OF-WAY MAINTENANCE AGREEMENT

New England Power Company (the "Company") and _____ (the "Owner") hereby agree to the following terms and conditions governing vegetation management on that portion of the Company's right-of-way which crosses Owner's property in _____.

1. The Company agrees to refrain from applying herbicides on that portion of the right-of-way which crosses Owner's property, as shown shaded on sketch "A" attached hereto and made a part hereof.
2. For that portion of the right-of-way on which the Company has agreed to refrain from applying herbicides, as set forth in paragraph 1 of this Agreement, the Owner agrees to ensure that vegetation does not, in the opinion of the Company, intrude upon, interfere with, or endanger any pole, structure, line, or other Company equipment located in, over, upon, or through the right-of-way, to wit:
 - a. No woody vegetation shall be permitted to extend more than twelve feet in height; and
 - b. No woody vegetation shall be permitted to grow within a five (5) foot radius of Company poles, Company structures or other Company equipment that is affixed to the ground.
3. The Owner agrees to maintain a pathway on the right-of-way as follows:
 - a. Said pathway shall extend the length of the right-of-way, commencing at _____ and continuing to _____ and shall be a minimum of twelve feet in width, all as shown on attached sketch "A";
 - b. All woody vegetation shall be removed initially from said pathway and all woody vegetation stumps on said pathway shall be cut initially so that they are no more than three (3) inches in height; and
 - c. At least once during each calendar year all woody vegetation which is located upon said pathway or which is encroaching upon said pathway shall be removed.
4. In the event that the Owner fails to comply with the conditions set forth in paragraph 2 or 3 of this Agreement, the Company shall have the right to enter the right-of-way and to clear the right-of-way of vegetation by any appropriate means, including the use of herbicides, at the Owner's expense.
5. In fulfilling his obligations under this Agreement, the Owner agrees to comply with all federal, state or local laws, regulations, or ordinances, and the Owner agrees to obtain any and all permits, licenses, orders, and/or any other authorizations that are required in order to do the work specified in this Agreement.

- 6. The Owner agrees to indemnify the Company and forever save harmless the Company, its officers, directors, agents, employees, successors and assigns from any loss, cost, damage, or liability of any kind resulting from or in any way referable to this Agreement or to the exercise thereof. The Owner also releases the Company, its officers, directors, agents, employees, successors and assigns from any and all claims and demands which result from injuries to persons or damage to property while on the right-of-way.
- 7. The Company reserves the right to terminate this Agreement for failure to comply therewith or for any other reason upon thirty (30) days' notice to the Owner.

This Agreement is neither assignable nor transferable by Owner, and shall terminate upon the Owner's death.

OWNER

_____ By

Date Title

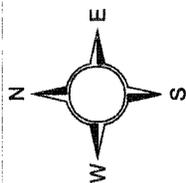
Date

Appendix 9
FORGIS Map

New England Power

Forgis Map Example

	Transmission ROWs
	Private Well
	MA Zone A
	Public Well
	DEP Public Well Buffer
	DEP Public Well
	Features
	Christmas Trees
	Cropland
	Field
	No Vegetation
	Nursery
	Orchard
	Owner General
	Owner No Herbicide
	Pasture
	Public Surface Water
	River Crossing
	Road Crossing
	School
	Yard
	Landowners
	Access
	MA Endangered Species
	HVDCSubs.shp



1:24000



Appendix 10

Data Sheet

National Grid USA Right of Way Data Sheet



Friday, September 12, 2003

ROW#: 001243 **Line#:** 339 **Forester:** JPC **Division:** TLS **Shortdsc:** STR #102 to Golden Hills Sub.
Miles: 7.90 **KV:** 345 **COMPANY:** NEP **State:** MA **Corridor:** Tewksbury North Shore
Gross Acres: 180.30 **Net Acres:** -32.37 **Partial Treat Acres:** 0.00 **No Treat Acres:** 3.61 **Mech Treat Acres:** 209.06
TSheets: T-4538;T-4539;T-4540;T-4541;T-4542;T-4543;T-4544;T-4545

Road Buffers

Town	Location	Road	Type
Lynnfield	109+500	Old Town Rd	
Lynnfield	112+440	Main St	
Wakefield	122+450	Audubon Rd	
Wakefield	123+330	Lyons Lane Private	
Wakefield	124+520	Teal Rd	
Wakefield	127	Route 128	
Wakefield	128+230	Salem St	
Wakefield	130+230	Montrose Ave	
Wakefield	134+310	Brianwood Ave	
Saugus	138+260	Water St	
Saugus	144+240	Main St	

Special Treatment Areas

Location	Type	Last Name	First Name	Address	Town, Zip	Phone Home	Phone Work	Off-Cycle	Description/Prescription/Comments
086+580	OWN	TOWN OF N. READING		HAVERHILL RD/PERKINS RD	NORTH READING,			Y	Conifer/Hardwood Mix;086+530-102+00. CONSERVATION AREA / /
089+00	ACC			HAVERHILL RD	NORTH READING,				;STR 89-91.ACCESS WHITE GATE.NEXT TO FARM / /

Friday, September 12, 2003

110+255	PRW			17 NEW MEADOW RD	LYNNFIELD, 01940				Within ROW;BACK YARD.LEFT SIDE / /
111+00	YRD			11 NEW MEADOW RD	LYNNFIELD, 01940				Conifer/Hardwood Mix;111+00-111+130.CEDARS.WHITE PINE.APPLE / /
112+500	OWN	TOWN OF LYNNFIELD	REEDY MEADOW AREA	S. MAIN ST/AUDUBUN RD	LYNNFIELD, 01940				Conifer/Hardwood Mix;112+500-122+00. CONSERVATION AREA / /
125+255	INF	BRIGHT HORIZON CHILD		TEAL ST	WAKEFIELD, 01880				SCH+Grounds 0-200ft;EDGE OF SCHOOL AT EDGE OF R.O.W. / /
128+240	YRD			435 SALEM ST	WAKEFIELD, 01880				Individual Tree;128+240-128+300.LAWN & BOXELDER / /
129+20	PRW	CZARNIAWSKI	CHESTER	416 SALEM ST	WAKEFIELD, 01880				Right of ROW;BACK YARD.LEFT SIDE / /
134+320	ACC			BRIARWOOD ST	WAKEFIELD, 01880				;STR 134-135.ACCESS AT END OF ROA.OFF MCKENZIE RDD / /
140+00	RDX	BREAKHEART RESERVATI		ELM RD	SAUGUS, 01906				Conifer/Hardwood Mix;140+00-140+50.TRAIL BUFFER / /
140+640	RDX	BREAKHEART RESERVATI		HEMLOCK RD	SAUGUS, 01906				Conifer/Hardwood Mix;140+640-140+660.TRAIL BUFFER / /
140+645	RDX	BREAKHEART RESERVATI		HEMLOCK RD	SAUGUS, 01906		Y		Conifer/Hardwood Mix;140+645-140+675.TRAIL BUFFER / /
140+75	INF	NORTHEAST METRO VOCA	WAKEFIELD MEMORIAL H	ELM RD	SAUGUS, 01906				SCH+Grounds 0-200ft;SCHOOL NEIGHBORS RESERVATION / /
140+80	RDX	BREAKHEART RESERVATI		ELM RD	SAUGUS, 01906				Conifer/Hardwood Mix;140+80-140+110.TRAIL BUFFER / /
152+00	PRW			40 JUNIPER ST	SAUGUS, 01906				Left of ROW;BACK YARD.NOT COVERED / /

Appendix 11

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National Grid USA

Environmental Policy

National Grid USA is committed to the protection and enhancement of the environment, always seeking new ways to minimize the environmental impacts of our past, present and future activities. We believe that everyone is responsible for good environmental performance as we incorporate environmental considerations into all our business activities. The following principles provide the framework to help us set goals to promote continual improvements in environmental performance and to deliver and maintain a culture that achieves the performance to which we aspire.

We:

- ◆ Expect management to provide visible leadership that promotes good environmental performance and to commit the appropriate resources to achieve our environmental goals;
- ◆ Meet, and where appropriate, exceed the requirements of environmental legislation, policies, charters and other commitments to which we subscribe;
- ◆ Prevent pollution, including the releases of oil and hazardous materials, wherever we can, but if an incident occurs respond effectively to minimize impact on human health and the environment;
- ◆ Minimize and properly manage the waste we generate, and reuse or recycle waste materials whenever economically feasible;
- ◆ Help protect the environment for future generations by making our contribution to minimizing climate change;
- ◆ Monitor electric and magnetic fields (EMF) research developments and assess continually the implications for the way in which we operate;
- ◆ Manage the risks associated with sites that have been contaminated from our past operations and improve these sites where appropriate;
- ◆ Protect and improve, where we can, the environmental status of the land on which we operate;
- ◆ Require our contractors to demonstrate the same level of commitment as National Grid USA in the management of the environment;
- ◆ Ensure that our employees have the skills, knowledge, and resources necessary to contribute to our environmental commitments;
- ◆ Encourage open and constructive dialogue with employees, members of the public and other stakeholders to continually challenge our performance;
- ◆ Identify and manage risks associated with our activities and deliver any improvements through effective environmental management systems;
- ◆ Monitor our environmental performance, audit the effectiveness of our management systems, and report our performance to employees, shareholders, the public and other stakeholders.



National Grid