EVERSOURCE

EVERSOURCE MAINTENANCE PM

ELECTRIC OPERATIONS ORG

Vegetation Management

Document Number:	Issued Date:	Revised Date:	Revision:	Applicability:
EMP 5.60	2-Jan-2015	21-July-2021	3	All

Scope:

This document outlines the vegetation acceptable maintenance practices within distribution and transmission Eversource systems performed in compliance with Eversource Roadside Specification for Local Distribution Line Clearance Tree Work and Brush Control and with Eversource Specification for Right-of-Way Distribution Line Clearance Tree Work and Brush Control.

Reviewed by: Signature on File Date: 07/21/2021
William Van Dam
Director, Station Operations, State

Rev No.	Description	Date
3	Reformat and correct Typos.	
2	Changed Approver names on the Signature page, as required. Incorporated the following global replacements: • NU Maintenance Manual replaced by Eversource Maintenance Program. • CL&P replaced by Eversource Connecticut. • WMECO replaced by Eversource Western Massachusetts. • PSNH replaced by Eversource New Hampshire. • NSTAR replaced by Eversource Eastern Massachusetts. • NUMM replaced by EMP. Incorporated the following global replacements: • NU Safety Manual replaced by Eversource Employee Safety Manual.	July 1, 2015
1	• Added Engineering Standard DSEM 06.59 to the Research/Background section. • Changed Approver Names on the Signature page, as required. • Added NSTAR pole miles to chart on page 1. • Rewrote first sentence of second paragraph under section 5.60.2.5 on page 4. • Added NSTAR notes to basis table on page 6. • Added NSTAR DPU document to list under 5.60.4 Research/Background heading on page 7.	January 2, 2015
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1.0 Vegetation Management (VM) - Distribution

1.1 General Description

1.1.1 Management of trees along distribution lines and at substation facilities is required to provide a safe work environment for line workers, to allow visual and physical access to the Company's electric facilities, to prevent damage to electric equipment and to improve reliability, shorten restoration times and improve customer satisfaction.

1.1.2 Vegetation management activities are based on routine tree pruning cycles and the cutting of vines and removal of hazardous trees and limbs.

1.1.3 Work is budgeted and scheduled on a calendar year basis for tree and brush work along and off roads.

.3.1. All work is performed by tree contractors that are qualified in line clearance tree trimming.

.3.2. Eversource personnel with expertise in arboriculture, forestry and natural resources manage the line clearance contracts and monitor contractor performance for safety, quality, cost, schedule, and customer satisfaction.

1.1.4 Work is performed in compliance with OSHA 1910.269 and ANSI Z133.1 safety standards, ANSI A300 Pruning Standards, International Society of Arboriculture Best Management Practices for Utility Pruning and Eversource's Specification for Distribution Line Clearance Tree and Brush Work. Application of herbicides is performed in compliance with individual state regulations in Connecticut and Massachusetts.

.4.1. In Massachusetts, work is performed in compliance with regulations for right-of-way management (333 CMR 11:00) and endangered species regulations (321 CMR 10:00).

1.1.5 Property owner consent for tree pruning or removal is required along public roads and on private property.

1.2 Facilities/Equipment

1.2.1 Overhead distribution lines, substations, and customer-owned facilities as allowed by jurisdictional Tariff, regulation or customer permission.

Work Scope	Connecticut	Eastern Massachusetts	New Hampshire	Western Massachusetts	Eversource Total
Pole Miles	16,850	7,800	12,500	3,300	40,450

2.0 Reference Documents

Publications and other reference materials from these organizations were used in the development of this program.

2.1 Eversource:

- **Connecticut** – Docket NO. 07-07-01, Application of the Connecticut Light and Power Company to Amend Rate Schedules, DECISION, January 28, 2008, DECISION
- **New Hampshire** – DE-06-028, Order NO. 24,750, May 25, 2007
- **Western Massachusetts** – DTE 06-55, Settlement Agreement, October 19, 2006
- **Eastern Massachusetts** – D.P.U. 11-85-B/11-119-B, NSTAR Electric Company Distribution Vegetation Management Plan, July 31, 2013.

2.2 Environmental Consultants Incorporated Workforce Management Program for Distribution Line Clearance 1986.

2.3 Eversource Specification for Local Distribution Line Clearance Tree Work and Brush Control (2008).

2.4 Engineering Standard DSEM 06.59.

3.0 Inspection and Maintenance Schedules

3.1 Table 1 – Preferred Vegetation Management Maintenance Intervals

Distribution Line Clearance Maintenance Schedule	
Maintenance Type	**Maintenance Interval**
Time-Directed Maintenance	
Perform roadside tree and brush work on 25% of pole miles per year (Scheduled Maintenance Trimming).	4Y to 5Y (**Note 1**)
Perform right-of-way herbicide and/or manual brush control, side trimming and hazard tree removal on 25% of right-of-way pole miles per year.	4Y to 5Y (**Note 1**)
Perform substation VM trimming.	4Y to 5Y (**Note 1**)
Condition-Based Maintenance	
Address hazard trees and reliability risk trees identified by customers, tree wardens, DOT personnel and VM and Operations personnel.	A/R
Perform interim hazard tree inspection, pruning and removal on roadside circuit backbones that were maintained prior to the current maintenance year.	A/R

M: stand for month

Y: stand for year

C: stand for Continuous

A/R: stand for as required

NOTE 1: The 4Y to 5Y frequency is recommended in order to maintain clearance specifications based on average; species, growth conditions, specified clearances achieved, etc. Actual cycle may be more or less due to actual field conditions, regulatory agreements, and surety of funding for multiple cycles.

4.0 Vegetation Maintenance Categories

4.1 TIME-DIRECTED

4.1.1 Roadside Tree Inspection/Maintenance

.1.1. Routine maintenance shall be performed in compliance with Eversource Specification for Local Distribution Line Clearance Tree Work and Brush Control (2008).

4.1.2 Transformer Enclosures

NOTE: Eversource provides maintenance to low voltage equipment located on customer-owned property only by contract agreement with that customer.

.2.1. Division Operations will (as appropriate for each region):

.2.1a. Provide the list and location of transformer enclosures that require vegetation maintenance.

.2.1b. Obtain the property owner's consent to perform maintenance on customer-owned facilities, if necessary.

.2.1c. Provide substation access and escort to Vegetation Management contractors.

.2.2. Vegetation Management will (as appropriate for each region):

.2.2a. Obtain necessary pesticide permits.

.2.2b. Cut and remove brush stems greater than 12 feet tall and herbicide- treat the stumps.

.2.2c. Herbicide-treat brush stems less than 12 feet tall and all weeds with a non-selective herbicide.

.2.2d. Ensure that gates open and close freely and that all electrical equipment is accessible.

NOTE: Customer-owned fenced or gated transformer enclosures may be subject to Vegetation Management as allowed by jurisdictional tariff, regulations and customer permission.

4.1.3 Substation Vegetation Maintenance

.3.1. Perform VM trimming starting at the substation, extending to a perimeter around the substation as appropriate to your region.

.3.2. Continue VM trimming to the primary circuit.

4.1.4 Right-of-Way Maintenance

.4.1. Routine maintenance shall be performed in compliance with Eversource Specification for Right-of-Way Distribution Line Clearance Tree Work and Brush Control (2008).

4.2 CONDITION-BASED MAINTANCE

4.2.1 Hazard Trees:

.1.1. Operations personnel, customers, and public employees routinely find and report hazard trees and limbs that threaten the distribution system.

.1.1a. This work is inspected and prioritized along with the work that Vegetation Management personnel discover during the performance of their normal duties.

.1.2. New England is heavily forested with the states in Eversource's service area having an average tree canopy cover ranging from 61.8% to 75.3%, per the 2008 US Forest Service General technical Report, NRS-38. While nearly every tree poses a level of risk, Vegetation Management's tree removal program focuses on trees that have a higher probability of impacting service and reliability.

.1.3. Work is prioritized and completed based on an evaluation of the tree's condition and the damage that would result if the tree failed. Bulk supply lines have a higher priority than single phase lines.

.1.4. Hot spot trimming is performed in areas where reliability concerns justify trimming out of cycle.

.1.4a. Address hazard trees and reliability risk trees identified by customers, tree wardens, DOT personnel, and VM and Operations personnel.

5.0 Vegetation Maintenance Basis Documentation

5.1 Vegetation maintenance activities and schedules are based on established Eversource best management practices, subject matter experts experience, industry bench marking, industry consultant recommendations and regulatory agency orders and recommendations.

Requirement	Basis
Tree and Brush Work, Right of Way Maintenance, and Substation Maintenance at a 4Y Interval (**Note 2**)	• New Hampshire recommends that Eversource New Hampshire should reduce vegetation management trimming cycles to an average of 6 years on a mileage basis for the 5 kV system, maintain the current average 5-year cycle on a mileage basis for the 15 kV system, and reduce the cycle to an average of 4 to 5 years on a mileage basis for the 35 kV system. • Eversource Western Massachusetts agrees through DTE 06-55, Settlement Agreement, October 19, 2006 that it shall employ a four- year, or more frequent, tree trimming cycle. • Docket NO. 07-07-01, Application of the Connecticut Light and Power Company to Amend Rate Schedules, DECISION, January 28, 2008, DECISION requires that Eversource Connecticut maintains a minimum budget amount until it reduces its VM cycle down to 5Y. • Eversource Eastern Massachusetts agrees through D.P.U. Order 11- 85-B/11-119-B, Distribution Vegetation Management Plan dated July 31, 2013 to add a cyclical four- to five-year cycle for distribution circuits. • Eversource has selected a 4Y to 5Y interval that meets or exceeds the requirements for all three Operating Companies.

Requirement	Basis
Interim Tree Maintenance as required (**Note3**)	• New Hampshire recommends Eversource New Hampshire should perform interim trimming inspections on all circuits to identify areas where vegetation problems have developed (that is not to be a full mid-cycle vegetation maintenance program). • Massachusetts recommends a 4-year to 5-year or more frequent program.

NOTE 2: The 4Y to 5Y frequency is recommended in order to maintain clearance specifications based on average; species, growth conditions, specified clearances achieved, etc..,. Actual cycle may be more or less due to actual field conditions, regulatory agreements, and surety of funding for multiple cycles.

NOTE 3: Interim trimming may be performed on an as-required basis, to be determined by each region.