



Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

FREEDOM OF INFORMATION ACT PROGRAM

April 3, 2019

In reply refer to: FOIA #BPA-2019-00674-F

Jerome Berryhill

(b) (6)

Email: (b) (6)

Dear Mr. Berryhill,

Thank you for your interest in the Bonneville Power Administration (BPA). We have received your request for records under the Freedom of Information Act (5 U.S.C. § 552). Your request was received on March 15, 2019, and has been assigned Department of Energy (DOE) control number BPA-2019-00674-F. Please use this number in any correspondence with the agency about your request.

Request

“The WECC document FAC-003-4 Transmission Vegetation Management says on page 6;

‘R3. Each applicable Transmission Owner and applicable Generator Owner shall have documented maintenance strategies or procedures or processes or specifications it uses to prevent the encroachment of vegetation into the MVCD of its applicable lines that accounts for the following: [Violation Risk Factor: Lower] [Time Horizon: Long Term Planning]: 3.1. Movement of applicable line conductors under their Rating and all Rated Electrical Operating Conditions; 3.2. Inter-relationships between vegetation growth rates, vegetation control methods, and inspection frequency.’

My request is for all documents BPA has created to comply with this requirement.”

Acknowledgement

BPA has reviewed your request and has determined that it fulfills all of the criteria of a proper request under the FOIA and DOE FOIA regulations at Title 10, Code of Federal Regulations, Part 1004.

Response

BPA’s Transmission Services Vegetation Management program manager provided the following agency records, which are being released to you in full and with no redactions applied:

- Bonneville Power Administration Vegetation Program Document, FY2018.

- Transmission Services, Transmission Line Maintenance Standard: Danger Tree and Brush Selection Criteria, TLM-STD-7-2-1 – Right of Way.
- Transmission Services, Transmission Line Maintenance Standard: Vegetation Clearance Standard, TLM-STD-7-2-13 – Right of Way.

Fees

There are no fees associated with the response to your request.

Certification

Pursuant to 10 C.F.R. § 1004.7(b)(2), I am the individual responsible for the information release described above. Your FOIA request BPA-2019-00674-F is now closed with all available agency records and information provided.

Appeal

The adequacy of the search may be appealed within 90 calendar days from your receipt of this letter pursuant to 10 C.F.R. § 1004.8. Appeals should be addressed to:

Director, Office of Hearings and Appeals
HG-1, L'Enfant Plaza
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585-1615

The written appeal, including the envelope, must clearly indicate that a FOIA appeal is being made. You may also submit your appeal by e-mail to OHA.filings@hq.doe.gov, including the phrase "Freedom of Information Appeal" in the subject line. (The Office of Hearings and Appeals prefers to receive appeals by email.) The appeal must contain all the elements required by 10 C.F.R. § 1004.8, including a copy of the determination letter. Thereafter, judicial review will be available to you in the Federal District Court either (1) in the district where you reside, (2) where you have your principal place of business, (3) where DOE's records are situated, or (4) in the District of Columbia.

You may contact BPA's FOIA Public Liaison, Jason Taylor, at 503.230.3537, jetaylor@bpa.gov, or the address on this letter header for any further assistance and to discuss any aspect of your request. Additionally, you may contact the Office of Government Information Services (OGIS) at the National Archives and Records Administration to inquire about the FOIA mediation services they offer. The contact information for OGIS is as follows:

Office of Government Information Services
National Archives and Records Administration
8601 Adelphi Road-OGIS
College Park, Maryland 20740-6001
E-mail: ogis@nara.gov
Phone: 202-741-5770
Toll-free: 1-877-684-6448
Fax: 202-741-5769

Thank you again for your interest in the Bonneville Power Administration.

Sincerely,

A handwritten signature in cursive script that reads "Laura J. McCarthy". The signature is written in black ink and is positioned below the word "Sincerely,".

Laura J. McCarthy
Freedom of Information/Privacy Act Officer

BONNEVILLE POWER ADMINISTRATION
Vegetation Program Document
FY 2018

Section 1 – Introduction

1.1 Scope

This vegetation management document (VMD) applies to all transmission lines operated at 200kV and above and to any lower voltage lines designated by a WECC as critical to the reliability of the electric system in the region.

This document provides a roadmap describing how Bonneville Power Administration (BPA) meets the Current NERC Vegetation Standard FAC-003-3. The Vegetation Program Manager will maintain the processes, standards and documentation to ensure that the vegetation in the transmission system is properly maintained. This VMD shall be reviewed and updated as necessary based on adopted revisions to FAC-003-3 requirements or as changing field conditions and circumstances warrant.

This document replaces BPA's prior Transmission Vegetation Management Plans (TVMP).

BPA's O&M vegetation maintenance program (TFBV) is responsible for system-wide compliance with FAC-003-3.

1.2 Objectives

The objective of the vegetation management program is to establish an integrated vegetation management program (IVM) under the auspices of ANSI A300 (Part 7) on transmission rights-of-ways (ROW) in the BPA System to ensure the reliability of the electric transmission systems by preventing outages from vegetation located on transmission ROW and minimizing outages from vegetation located adjacent to ROW, maintaining clearances between transmission lines and vegetation on and along transmission ROW.

The intent of the program is to manage BPA's ROWs consistent with rights acquired and treat only that vegetation that is incompatible with BPA's use of the land with the following objectives:

- Transmission Reliability – the reliability of electrical service through vegetation control regardless of accessibility or workability.
- Elevate safety as a system wide core value in all aspects of operations.
- Compliance - ensuring that BPA is compliant with all governmental vegetation related regulations and restrictions. Adherence to NERC Standard FAC-003-3 Vegetation Management and related state statutes is paramount.
- Manage system wide with commitment to environmental stewardship.
- Resource Management - the ability to manage resources by identifying work load. Treatments will be applied only on an as needed basis, thus allowing allocated resources to be utilized efficiently. As a result, work load and resources will be balanced.
- Improving/Maintaining Accessibility - promoting accessibility to structures and right-of-way by controlling vegetation on and around structure pads and patrol roads where practical.
- Response to vegetation clearance issues identified can be found in BPA's Transmission Line Maintenance Standards & Guide (TLMSG) STD 7-2-1.
- Minimizing Fire Hazards - through first identifying potential problems and then by reducing fuel levels to acceptable limits.

1.3 Terms, Definitions and Acronyms:

The majority of related terms, definitions, and acronyms commonly used by BPA in the management of vegetation along their ROW's can be found within the BPA Transmission Line Maintenance Standards and Guides (TLMSG) STD 7-2-1 (2015 version).

- **Right-of-Way (ROW):** The corridor of land under a transmission line(s) needed to operate the line(s). The width of the corridor is established by engineering or construction standards as documented in either construction documents, pre-2007 vegetation maintenance records, or by the blowout standard in effect when the line was built. The ROW width in no case exceeds the Transmission Owner's legal rights but may be less based on the aforementioned criteria. Inspector: Individual assigned with the responsibility of evaluating clearances in the Transmission ROW.
- **System-of-record:** That database and software used by TFBV to store ROW vegetation management related information.
- **Vegetation Inspection / Patrol:** The systematic examination of vegetation conditions on a Right-of-Way and those vegetation conditions under the applicable Transmission Owner's or applicable Generator Owner's control that are likely to pose a hazard to the line(s) prior to the next planned maintenance or inspection. This may be combined with a general line inspection.

2 Section 2 –FAC-003-3 Requirements

2.1 Requirement 1 (Applicable lines that are an element of an IROL or Major WECC Transfer Path)

BPA maintains records of sustained outages from all causes, reporting for FAC-003-3 in BPA's transmission availability data system-of-record. BPA attests that this is an accurate classification of all outages.

BPA conducts an annual vegetation patrol of all applicable lines. In this patrol, BPA inspects for and identifies vegetation on and off the ROW that could pose a reliability risk to the line. Encroachments into the minimum vegetation clearance distance (MVCD) as shown in FAC-003-Table 2, observed in real-time during the patrol are reported to the TFBV supervisory natural resources specialist (hereafter Manager). Appropriate data and photographs are submitted to the Vegetation Program Manager. BPA attests that these events are reported to the Western Electricity Coordinating Council (WECC) in accordance with NERC policy.

Documentation of these patrols and the findings can be found in BPA's Reliability RESOLVER Compliance site.

2.2 Requirement 2 (Applicable lines that are not an element of an IROL or Major WECC Transfer Path)

BPA maintains records of sustained outages from all causes. Reporting for FAC-003-3 and TADS originates there. BPA attests that this is an accurate classification of all outages.

BPA conducts an annual vegetation patrol of all applicable lines. In this patrol, BPA inspects the tree conductor clearances, identifies vegetation on and off the ROW that could pose a reliability risk to the line. An encroachment into the MVCD as shown in FAC-003-Table 2, observed in real-time during the patrol is reported to the Manager. Appropriate data and photographs are taken and transmitted to the Manager. BPA attests that these events are reported to the WECC in accordance with NERC policy.

Documentation of these patrols and the findings can be found in BPA's Reliability RESOLVER Compliance site.

2.3 Requirement 3 (Maintenance Strategy)

In applying a Maintenance Strategy, BPA provides guidance for employees making decisions as to which vegetation should be in the annual work plan through the use of available LiDAR data and annual aerial or ground patrols. LiDAR data is typically acquired on a portion of BPA's circuits annually. Using this data, BPA has established clearances in Table 1 of BPA's TLMMSG STD 7-2-1 to be used in annual patrols. The annual aerial patrol described in R-6 is the first line of defense. The annual ground patrols and analyzed LiDAR data are the secondary barrier to ensure tree wire conflicts do not occur.

2.4 Requirement 4 (vegetation condition that is likely to cause a Fault at any moment)

When BPA employees or its contractors encounter an vegetation-related imminent threat situation, the appropriate staff shall be notified to communicate vegetation conditions that are likely to cause a Fault at any moment per TLM-STD-7-2-1, TLM-STD-4-1-8, and STD-4-1-10.

Imminent Threat Communication Requirements for BPA Employees and Contractors:

BPA's dispatch will be contacted for any imminent threat clearance issues involving the following scenarios:

- 1) As identified by Aerial TLM patrols (per TLM-STD-4-1-8), if an encroachment is identified that is likely to cause an outage, it shall be reported to BPA's dispatch and the respective District foreman. From the aerial observer's report, BPA's dispatcher or the District Foreman shall include the observer's assessment of the gravity and risk of the hazard to BPA's assets.
- 2) When TLM working patrol staff encounter an imminent risk vegetation clearance (per TLM-STD-4-1-8), they will mitigate the hazard that they are capable of, and contact BPA's dispatch if the hazard is likely to cause an outage or if a clearance is required per TLM-STD-4-1-8.
- 3) When BPA employees or its contractors encounter an imminent threat situation, the appropriate staff shall be notified to communicate vegetation conditions that are likely to cause a Fault at any moment per TLM-STD-7-2-1. In this scenario, it will be at the determination of the TLM district foreman or designate if a clearance is required to mitigate the risk.

Documentation:

BPA form 4300-22 will be completed by TLM identifying imminent risk encroachments. The NRS and BPA vegetation contractor will maintain their records on the system-of-record.

2.5 Requirement 5 (vegetation constraint may lead to an encroachment into the MVCD)

Maintenance strategy in Section 2.3 defines the expected extent of clearing. If the clearance specifications cannot be achieved at the time of scheduled maintenance, BPA shall implement corrective action. This corrective action shall be documented. This corrective action may include more frequent maintenance or more frequent patrols to monitor the risk to the system.

Restrictions on scheduled work may include restrictions by federal and state agencies due to threatened and endangered species, legal hurdles, hostile landowners or access due to seasonal conditions. These restrictions will be brought to management for action. While negotiations or legal

action with governmental entities or landowners is under way, the respective natural resources specialist will manage the restriction to prevent encroachment into the imminent risk clearance standard. These actions will be documented as evidence that appropriate action was taken to prevent encroachment to the imminent risk clearance and MVCD. This documentation will be maintained in the database-of-record.

2.6 Requirement 6 (Annual Patrols)

All transmission circuits (100%) subject to FAC-003-3 shall be completely patrolled at least once a year. The patrol interval should not exceed eighteen months from the last patrol.

The timing and number of patrols is flexible. BPA may increase the number of patrols or adjusted schedules based on changing conditions that could include storms, locally heavy rainfall or high winds, landowner intervention and tree mortality caused by disease outbreaks or insect infestations.

BPA tracks patrols by line miles and spans inspected. The Manager will maintain a log in the database-of-record to ensure patrols are on schedule and as evidence that BPA completed 100% of its line miles and spans.

2.7 Requirement 7 (Annual Work Plan)

During the budget process, the Manager will review planned work schedule for the following year and the most current patrol data from the annual patrols. The Manager will prioritize the work based on prevention of encroachment into the MVCD.

Before the year begins, the Manager will set and document the Annual Work Plan based upon TFBV's OutYear Plan. This plan is flexible and may be modified as the year progresses for the following reasons:

- Change in expected growth rate/environmental factors
- Circumstances that are beyond the control of an applicable Transmission Owner or applicable Generator Owner
- Rescheduling work between growing seasons
- Crew or contractor availability/mutual assistance agreements
- Identified unanticipated high priority work
- Weather conditions/accessibility
- Permitting delays
- Land ownership changes/change in land use by the landowner
- Emerging technologies

Changes made to the annual Work Plan will be documented on the OutYear plan in the Database of record.

BPA tracks the Annual Work Plan by line miles completed. The Manager will maintain an annual work plan to ensure work is on schedule and as evidence that BPA completed 100% of its circuit miles listed in the Annual Work Plan.

3 Compliance

When an outage is identified as caused by vegetation, the Program Manager will ensure that appropriate qualified personnel collect the necessary evidence from the scene. The Program Manager will submit any applicable report to the Vegetation Manager for review with upper

BPA VMD 12/13/2017

management and BPA compliance personnel. If they deem a violation of Requirement 1 or 2 has occurred, the appropriate individual will report the violation to the WECC.

Quarterly the Manager or program manager will review the outage records for vegetation outages and submit a report to BPA's Compliance staff. Outages that meet the requirement for reporting in Section 1.4 of the compliance section of FAC-003-3 will be reported to appropriate personnel for reporting to the WECC.

4 Reference

Contract Statement of Work (SOW)

Danger Tree Removal Contract

Draft of BPA Vegetation Mitigation Process

eGIS Database - <http://iweb.bpa.gov/eGIS/Portal/Query.aspx>

TFBV OutYear Plan (scheduled cycle vegetation maintenance)

IEEE standard 516-2003, section 4.2.2.3

Internal Vegetation Management Web Site <http://txportal.bpa.gov/orgs/tx/veg-mgmt/default.aspx>

LiDAR – Fiscal Year Work Plan

LiDAR TVMP Addendum

NERC Standard FAC-003-4 (including current MVCD Table)

Outage Analysis and Reporting System (OARS)

TLM Apps (or TAS Lines)

TLM-STD-7-2-1, (04/19/2017)

 Danger Tree and Vegetation Clearance Selection Criteria

TLM-STD-4-1-10, (08/20/2015)

 Working Patrol

TLM-STD-4-2-3 (04/14/2016)

TFBV Cycle Treatment Update

WMGT1135S Helicopter Patrol

WMGT1155S TLM Line Patrol

WMGT1186S TLM Line Information

2000 Vegetation Management EIS



Vegetation Clearance Standard TLM-STD-7-2-13 – Right of Way

(Old No. VII.B.13)

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NOTE: Highlighted Sections followed by the symbol (S) contain Standards that shall be adhered to.

1. INTENT

This Standard provides vegetation clearance criteria on Right of Way corridors.

2. BACKGROUND

The Bonneville Power Administration (BPA) manages, directly or by Agreement, all vegetation on BPA Transmission Line Rights-of-Way (ROW), fee-owned lands and easements in order to establish and maintain the safety and reliability of its facilities.

This Vegetation Clearance Standard is to be applied by the Natural Resource Specialists (NRS) when planning and implementing their contract work for the initial treatment at the beginning of each scheduled vegetation management cycle. The Danger Tree and Brush Selection Criteria Standard and Guide is to be applied by Transmission Line Maintenance (TLM) Crews, NRSs, and Helicopter Observers as maintenance treatment to assure that the transmission system is free of hazardous vegetation during the intervening period between scheduled vegetation management cycles.

3. DEFINITIONS

Agreement: A legal document for managing vegetation between BPA and another entity that owns or controls property on which BPA has an easement OR allows vegetation activities by another entity on BPA fee-owned land. Agreements for managing vegetation may be addressed in Land Use Agreements (LUAs), Tree and Brush Agreements, Commercial Agriculture Easements, deed reservations, or right-of-way management plans.

Management Cycle: An interval during which a recurring sequence of vegetation management occurs; Initiation and Maintenance. The vegetation management cycle begins with the removal of all tall growing species (Initiation) and continues with a regimen of intermediate treatments (Maintenance) to remove new individual or small groups of hazardous vegetation that became established after the cycle began.

Maximum Design Sag (Max Sag): The potential position of a transmission line when the line is at maximum design temperature and load.

Occupied ROW: BPA easement or fee-owned right-of-way with transmission lines and towers currently within its boundaries.

Unoccupied ROW: BPA easement or fee-owned right-of-way that exists for future development of the transmission system but currently lacks lines or towers.

Tall Growing Vegetation: Any species of vegetation with a natural mature height potential that would violate this standard.

4. **POLICY (S)**

Establish and maintain vegetation with a mature height or growth that is 25 feet from the Max Sag of the transmission lines. In situations where this standard cannot be achieved due to legal or physical constraints, a maximum allowable clearance distance **shall** be determined in each case by subject matter experts (i.e., engineers, reality specialists, and legal staff), led by the NRS. All situations where this standard can not be attained must be documented in the appropriate corporate repository (e.g., Geographic Information System, Real Property Services, vegetation management prescriptions and data bases).

4.1 Procedures

4.1.1 **Clearance Criteria - Occupied ROW Corridor (S)**

Vegetation on occupied ROWs is managed in the following manner:

- **Initial Clearance:** At the beginning of a management cycle, vegetation that does not meet this standard will be removed. Vegetation being managed under an Agreement will be monitored and the terms of the Agreement strictly enforced.

The objective of the initial clearance standard is to bring vegetation in compliance with the standard.

- **Maintenance Clearance:** During the management cycle (i.e., the period after the initial, but before the next planned treatment) vegetation is maintained between the Initial Clearance distance and the limits identified in the Danger Tree and Brush Selection Criteria Standard and Guide. Vegetation being managed under an Agreement will be monitored and the terms of the Agreement strictly enforced.
- **Emergency ROW Clearing:** Vegetation meeting the danger brush criteria (identified in the Danger Tree and Brush Selection Criteria Standard and Guide), or deemed an imminent danger by TLM, **shall** be removed immediately regardless entitlements.

4.1.2 Clearance Criteria - Unoccupied ROW Corridor

Vegetation on unoccupied ROWs is managed to ensure trees and other tall growing vegetation will not encroach into the established clearance of this standard (e.g., grow-into, bend-into, or fall-into). At a minimum, tall growing vegetation on unoccupied ROW should be managed to the clearance specified in the “Danger Tree and Brush Selection Criteria” Standard and Guide. The NRS may control additional vegetation deemed to be a hazard to the transmission line.

4.1.3 Clearance Criteria - Off ROW

Trees adjacent to transmission line ROW corridors are managed in accordance with the clearance standards identified in the “Danger Tree and Brush Selection Criteria” Standard and Guide.

4.1.4 Clearance Standard - General Hazard

Vegetation should be controlled before it becomes a:

- Potential hazard to a transmission facility.
- Fire or public safety hazard.
- Encroachment on neighboring residential or agricultural areas.

4.2 Clearance Distance Quality Assurance/Quality Control Measure

NRSs are responsible for certifying that all contractual obligations have been completed and accepted on each vegetation contract by the contract termination date. Contractor performance will be ground inspected regularly by the NRS or designated representative (contract inspector) and an inspection record will be created. If a contract inspector is utilized, the NRS will also complete random spot check(s) of the vegetation contractor’s work for quality assurance purposes.

In addition to ground inspections, the NRS may also utilize Low Level Video (LLV) for inspection purposes. If LLV is to be used, the NRS will notify the Aircraft Services Manager and provide specific line corridors to be flown. Within 60 days of the request, Aircraft Services will video a specific line or corridor. The NRS will be notified by the GeoSpatial Services Department (TERG) that the video is available for viewing. A final acceptance record of the contractor's performance will be documented by the responsible NRS prior to approving the last invoice. The NRS is responsible for maintaining the appropriate related records for 5 years.

5. SUMMARY OF CHANGES

09/09/2015

Dave Baldwin Revised

1. Pages 1-5 - Converted the document to the BPA Standards Group document format.



Danger Tree and Brush Selection Criteria
TLM-STD-7-2-1 – Right of Way

(Old No. VII.B.1)

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NOTE: Highlighted Sections followed by the symbol (S) contain Standards that shall be adhered to.

1. INTENT

This Standard defines the clearance standards, selection criteria and removal response actions to be used for Danger Trees and Brush.

2. BACKGROUND

Identification and reporting of vegetation issues identified as Imminent Threats, Danger Brush, Danger Trees and Cycle Maintenance enables Vegetation Management to target, plan, acquire rights and remove out of compliance vegetation. Proper identification must consider conductor span length, operating temperature, and atmospheric conditions that can affect conductor sag. When making a determination on Danger Brush, consider that a conductor that has adequate clearance from vegetation in cold weather may be in violation of conductor clearances in warmer weather conditions. Proactive maintenance during routine operations and prompt action during critical events will maintain system reliability, a safe work environment, and reduced fire danger. Left unmitigated, Imminent Threats, Danger Brush, Danger Trees and Cycle Maintenance vegetation can pose a present or future hazard to BPA's power transmission lines and the public.

This Danger Tree and Vegetation Clearance Selection Criteria Standard and Guide defines the criteria, clearance standards, and response actions to be used by Transmission Line Maintenance (TLM) crews, Natural Resource Specialists (NRS), aerial observers, third-party contractors, and other BPA personnel or agents who are responsible for ensuring that the BPA transmission system remains free of out of compliance vegetation conditions, and remains in compliance with the most current version of FAC-003 and other related regulations.

3. DEFINITIONS

- 1) Agricultural and Crop Land: Lands grazed for pasture or under cultivation for annual or perennial crops including, but not limited to, fruit and nut orchards, Christmas tree farms, landscape nurseries, hop farms and vineyards.
- 2) Border Zone (BZ): That ground area from the edge of the wire zone to the edge of the managed right-of-way.
- 3) Brush: A close thicket of shrubs appearing to be a single plant that does not meet the criteria for tree.
- 4) Corridor Tree (CT):
 - A tree located in the ROW that is violating CM clearance or would violate CM clearance if it fell towards an energized conductor.

- Any tree that at full maturity would violate CM clearance any time during the next two scheduled maintenance cycles.
- 5) Cutting Rights: Danger Tree and brush cutting rights that either exist in easement documents or are acquired by Real Property Services.
 - 6) Cycle Maintenance Clearance (CM): Any vegetation that could become danger brush within the current growing season. Refer to Table 4.1.
 - 7) Danger Brush (DB): Any vegetation that is less than or equal to the defined clearance distance from the conductor as stated in Table 4.1.
 - 8) Danger Tree (DT): Any tree located outside of the ROW which is a present or future hazard to the transmission line. Characteristics are described in Section 4.3. Clearances are listed in Table 4.1 under Danger Brush and Danger Trees (DB, DT).
 - 9) Danger Tree, Grow Into (DTG): Any vegetation originating outside the ROW that has foliage that is less than or equal to the defined clearance distance from the conductor as illustrated in Fig. 4.4 and stated in Table 4.1 under Danger Brush (DB & DTG).
 - 10) Developed Residential and Commercial Properties: Population and industrial areas where existing property rights may include vegetation maintenance agreements made between landowners and BPA. .
 - 11) Diameter at Breast Height (DBH): Tree diameter outside of the bark at 4.5 feet above ground on the uphill side of a tree.
 - 12) Environmentally Sensitive Area: A site where vegetation is protected as critical habitat for endangered species or for other environmental reasons..
 - 13) Imminent Threat: The condition that exists when vegetation is now or soon will be violating MVCD plus 5 feet.
 - 14) Iso-Clearance Map: A graphic depiction using contour lines to portray the maximum permitted vegetation height above ground that does not violate the clearance thresholds or other prescribed clearance limits from conductors.
 - 15) Logging Fringe: Narrow row of trees, exposed, with a high probability to encroach into MVCD.
 - 16) Major Storm Event: The occurrence of storms and other significant weather phenomena having sufficient intensity to cause loss of life, injuries, significant property damage, and/or disruption to commerce.
 - 17) Maximum Sag (Max Sag): The calculated sag of the conductor when operating at a design prescribed electrical, thermal or mechanical load.
 - 18) Minimum Vegetation Clearance Distance (MVCD): The calculated minimum distance between conductors and vegetation to prevent flash-over between conductors and vegetation. Distances depend on altitudes and operating voltages. Refer to the current edition of Western Electricity Coordinating Council (WECC) FAC-003 Transmission Vegetation Management standards.

- 19) Rights-of-Way, Managed (ROW): The corridor of land under a transmission line(s) required to operate the line(s). The width of the corridor is established by engineering and construction standards, construction documents, or pre-2007 vegetation maintenance records. The ROW width in no case exceeds the applicable Transmission Owner's or applicable Generator Owner's legal rights but may be less based on the aforementioned criteria (Interpreted from NERC definition & FAC-003 defined). When ROW is used in TLM-STD-7-2-1 it refers to this definition.
- 20) Sag: As defined by the NESC is the distance measured vertically from a conductor to the straight line joining two points of support.
- 21) Scheduled Maintenance: An interval during which a recurring sequence of vegetation management functions occur.
- 22) Slash: All vegetative debris including but not limited to limbs, tops, un-merchantable logs, bark, wood chunks, pushed out stumps, damaged brush, and damaged residual trees.
- 23) Swing Into: Calculated lateral offset position of conductor, from the at rest position, when affected by 6 lb./ft² wind at 15.5 deg. C. Also referred to as "blow out".
- 24) System-of-Record: The current vegetation management database and software information-management system used by BPA Vegetation /Access Road management.
- 25) Timber: Any tree that has commercial value as lumber, chip, pulp, or veneer.
- 26) Tree: A woody stemmed perennial plant species, typically having a single stem or trunk with the potential to grow to a height greater than ten feet and bearing lateral branches at some distance from the ground.
- 27) Wire Zone (WZ): That ground area directly under the transmission line conductor from outer phase to outer phase and extending horizontally ten feet outside of each outer phase conductor.

4. PROGRAM

4.1 Vegetation Management Clearance Thresholds (DB, DTG)

Use the clearance distances in Table 4.1 to measure from vegetation to conductor at Max Sag and swing, to determine out of compliance vegetation conditions.

- BPA has established its own clearance threshold distances, which exceed MVCD in FAC-003 and are shown in Table 4.1.
- The distances are measured from vegetation to the conductor at all operating conditions. This is done to determine out of compliance vegetation conditions on and adjacent to the transmission line ROW.

4.2 **Field Determination of Vegetation Clearances (S)**

Determine the vegetation clearance by calculating the distance between the location of the conductor at Max Sag and the vegetation in question. There are two options for making a field determination and adjusting “as observed” clearances between vegetation and power lines.

Option A: Iso-Clearance Map.

Iso-clearance maps will show the vegetation height from ground that will violate clearance thresholds at a targeted geospatial location. These maps are available from Geospatial Services, in both hard copy format and a GIS overlay. An iso-clearance line will represent maximum allowable vegetation height that will not violate clearance thresholds. This is the preferred and most accurate method available.

Following is the procedure to use:

- 1) Order iso-clearance data based on clearance thresholds in Table 4.1
- 2) Determine target vegetation’s geospatial location.
- 3) Interpolate iso-clearance vegetation maximum allowable height from ground on iso-clearance map at that location.
- 4) Measure vegetation height and compare to iso-clearance value.
- 5) Vegetation height must be less than the iso-clearance value in order to not violate prescribed clearance thresholds.

Option B: Manual Field Determination of Clearance.

Profile maps determine ground to conductor distances. On the profile map, scale from ground to vegetation height, then scale from top of vegetation to wire and compare to clearance threshold.

- 1) Ensure that the profile map is on hand either electronically or as a hard copy.
- 2) Maps are frequently updated with revised information. Ensure that the profile maps are the most current. Confirm this with Survey and Mapping group.
- 3) Know the horizontal and vertical scales. They are different. Maps are frequently enlarged or reduced, so determine scale by direct measuring.
- 4) If the conductor profiles are drafted at Max Sag (see reference on Plan and Profile) the observer will:
 - a. Determine the vegetation’s stationing, offset and height above ground.
 - b. Measure vegetation height with a laser range finder.
 - c. Scale, on the profile, the vertical distance from ground profile to the top of the vegetation (vegetation height).
 - d. Scale the distance from top of vegetation to the conductor profile.

- e. Compare the distance from vegetation to conductor with the clearance thresholds in Table 4.1.

If the conductor profile is not drafted at Max Sag, use an Adder. The vertical distance from ground to conductor must be adjusted with an “adder.”

- 1) Adders are available from the Transmission Engineering Lines Conductor group.
- 2) Adders should never be added to a conductor in an observed position.
- 3) Use the Adder to adjust for Sag.
 - a. Scale the distance from the top of the vegetation to the adjusted profile after applying the adder.
 - b. Compare the distance from vegetation to conductor with the clearance threshold in Table 4.1.
- 4) At **no** time **shall** an arbitrary or default adder be applied.

4.3 Vegetation Condition Identification

Vegetation condition identification entered into the system-of-record is based on the proximity of the vegetation to the transmission line. Lines move horizontally and vertically based on conductor operating temperature, wind and loading. Assess all possible line positions when evaluating clearances.

4.3.1 Fall-Into Danger Tree (DT)

- 1) Characteristics: Fall-into Danger Trees are unstable, with a 50 percent or greater probability of structural failure within five years. Structural failure may be due to physical damage or environmental conditions.
 - Physical damage includes, but are not limited to fire, fork tops, multi-stems, declining vigor, snow damage and root rot.
 - Environmental conditions include but are not limited to tree fringes left from logging, erosion from recent storms, mass-wasting, flooded or saturated ground and slides or evidence of unstable ground.
- 2) Identification: Identification of a fall-into danger trees is based on;
 - Its instability characteristics.
 - If it were to fall, it could violate the clearance threshold distances for Danger Trees as identified in Table 4.1 and as shown in Figure 4.1.
- 3) Recording: Record, in the System of Record, location, species, height, DBH, defects, conditions and any other defining characteristics.

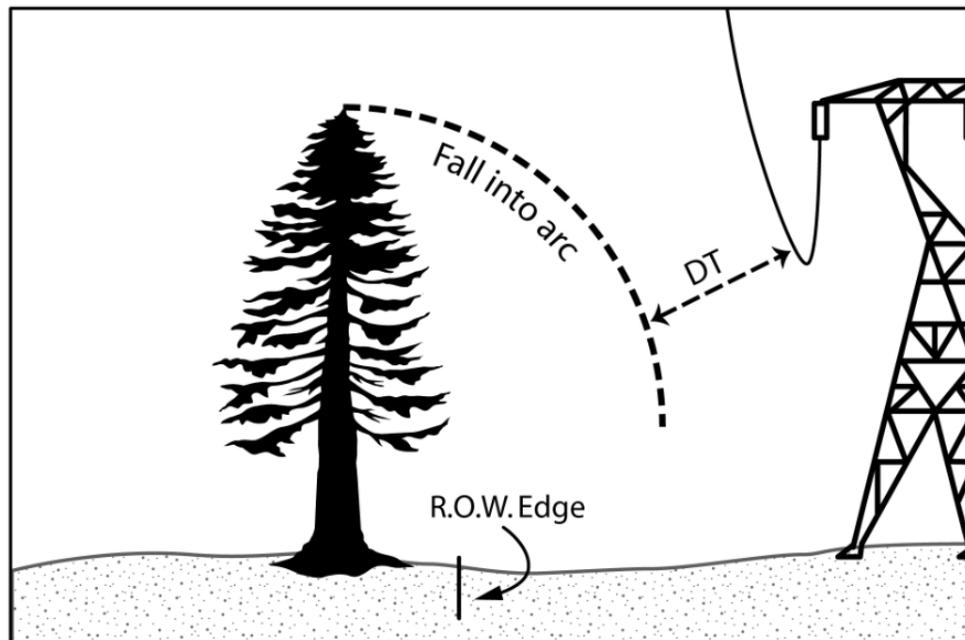


Figure 4.1 Example of Danger Tree “Fall-Into”.

4.3.2 Bend-Into Danger Tree

- 1) Characteristics: Trees that can violate clearance threshold distance if they bend toward the conductor and have the following characteristics;
 - Tall and Skinny: These trees are tall with a small diameter. The stem is not rigid enough to support the top and branches in an upright position, and the tree could bend down and touch the transmission line during windy, snowy or icy weather. These trees are easy to identify along the edge of the ROW, but may be harder to identify when further from the edge of the ROW.
 - Tall Fast-Growing: Trees that are tall with upward-growing branches like Lombardy poplar. The branches are easily displaced (sway) in the slightest breeze and can move sideways more than 10 feet in moderate to strong winds, and can violate DT clearance thresholds.
- 2) Identification: Identification of bend-into danger trees is based on two factors;
 - Unstable as described above.
 - If it bends toward the conductor, it would violate the clearance threshold distances identified in Table 4.1 and as shown in Figure 4.2 below.

Look for burn damage on the top or upper branches indicating they may have contacted the conductor.

- 3) Recording: Record, in the system of record as a Bend- into Danger Tree, and record location, species, height, DBH, defects, conditions, clearance from the conductor and any other defining characteristics.

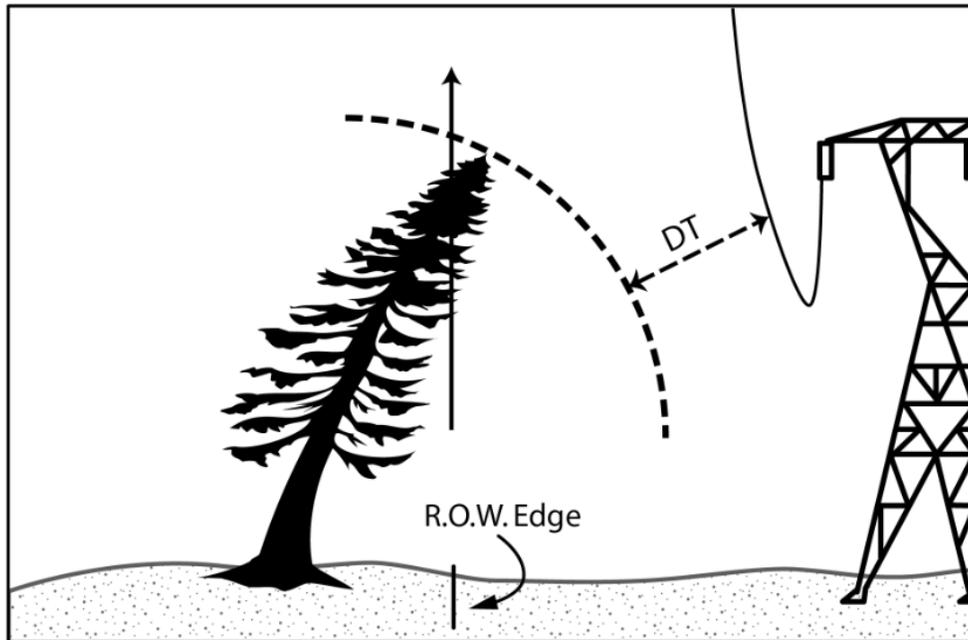


Figure 4.2 Example of “Bend-Into” Tree.

4.3.3 Swing-Into Danger Tree

- 1) Characteristics: Swing-Into Danger Trees have the potential to violate clearance thresholds when the conductor is influenced by the forces as defined for Swing Into as noted below in 4.3.3, No. 2). Be aware of the following:
- Swing-into contacts are rare because the sheltering effect of bordering trees suppresses conductor swing.
 - TLM and NRS will identify spans with a history of swing-into contacts for tree clearing within the calculated swing distance.
 - They are most common on long spans where the middle part of the span is exposed and the ends of the span are closely bordered by trees, or where isolated trees have grown up alongside a long span.
 - Trees that have been contacted by a conductor or “arced” may show burn damage on the top leader or upper branches.

- Swing-into situations may result from:
 - Logging activity that removes trees previously acting as a wind break for the transmission line.
 - An isolated tree growing adjacent to the transmission line.
- 2) Identification: A tree exhibits any of the above characteristics and the conductor could enter MVCD.
- 3) Recording: Record as a Swing-Into Danger Tree and record the at rest clearance from the conductor, tree height and DBH into the system-of-record.

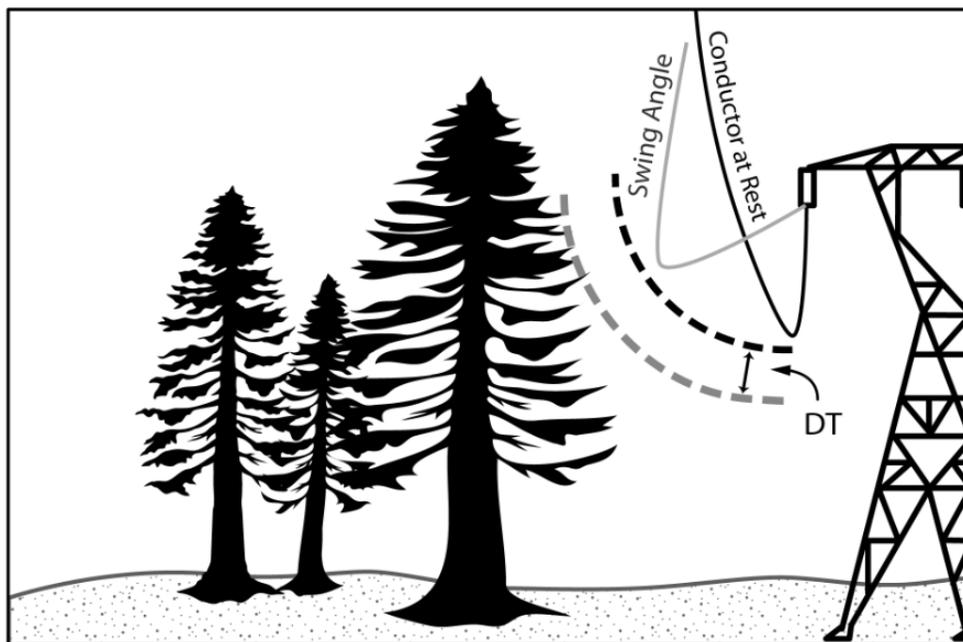


Figure 4.3 Example of “Swing-Into” Tree.

4.3.4 Danger Brush (DB)

For vegetation that violates clearance thresholds, refer to Table 4.1 and Figure 4.4.

- Danger Brush (DB): All trees and brush that violates MC from below, from the side or from above the conductor that originates inside the ROW boundary.
- Grow-Into Danger Tree (DTG): Vegetation that meets the criteria for DB, but is from vegetation that originates outside of the ROW boundary.

- **Recording:** Record Danger Brush and Grow-Into Danger Trees in the system-of-record based on the clearance distances listed in Table 4.1 and Figure 4.4. Note and record the position of trees that are violating Danger Brush clearance distances, and respond accordingly.

4.3.5 Cycle Maintenance (CM)

Vegetation that violates Cycle Maintenance (CM) clearance thresholds as listed in Table 4.1, shown in Figure 4.4 and

- Has the potential to violate Danger Brush (DB) Clearance Thresholds before next Scheduled Maintenance.

Recording: Record Cycle Maintenance in the system-of-record based on the clearance distances identified in Table 4.1 and Figure 4.4

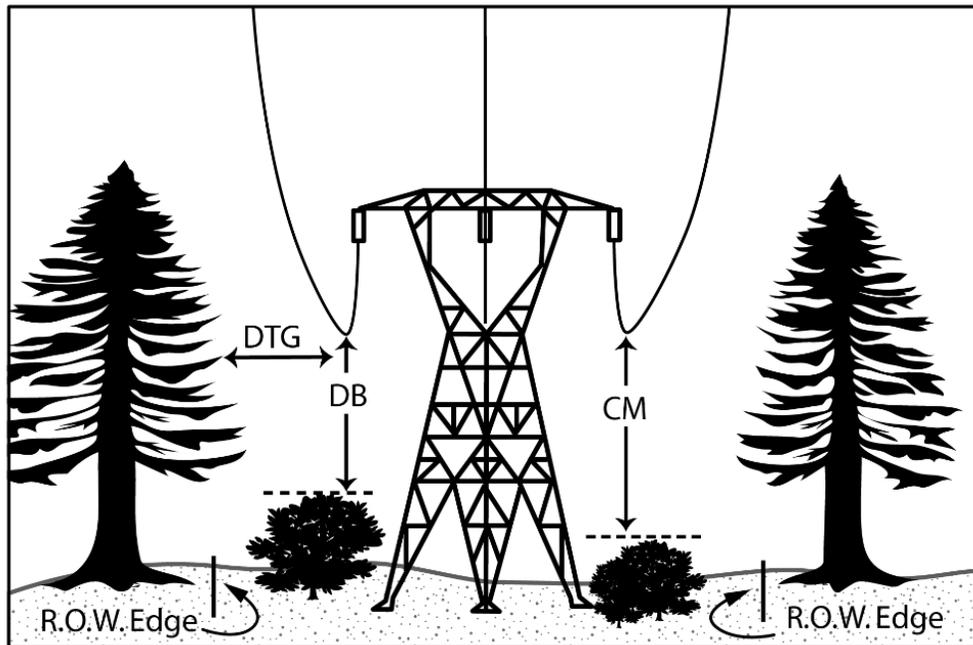


Figure 4.4 Danger Brush, Cycle Maintenance and Danger Tree Grow-Into Identification.

Table 4.1 Danger Brush, Cycle Maintenance and Danger Tree Clearance Thresholds at all operating conditions				
Voltage	Imminent Threat (As Observed)	Danger Trees (DT)	Danger Brush (DB & DTG)	Cycle Maintenance (CM)
200 kV & above	MVCD+5 ft.	MVCD+5 ft.	Less than 15 feet	15-20 feet
below 200 kV	MVCD+5ft.	MVCD+5 ft.	Less than 10 feet	10-15 feet
Fiber optic	N/A	N/A	Less than 3 feet	3-10 feet

4.3.6 Exceptions to Danger Brush and Cycle Maintenance Recording

This section outlines the exceptions to Danger Brush and Cycle Maintenance Recording and Response.

Engineering sets thermal line rating limits and Operations operates the system to comply with these limits. Thermal line rating limits are designed to keep the conductors above the NESC clearance thresholds at all times.

As a result, the following vegetation with a mature height of less than 10 feet is deemed NON-THREATENING and is not considered Danger Brush or Cycle Maintenance.

- Low-Profile Residential Landscaping: Within developed residential or commercial properties there are many low-growing plants that will not reach a mature height of 10 feet. Examples include ornamental shrubs, grasses, and forbs (e.g., low rhododendrons, azaleas, rose bushes, flower beds, vegetable gardens, lawns, etc.).
- Rangeland: Much of BPA’s ROW, especially east of the Cascades, crosses open expanses of rangeland with low-growing vegetation that will not reach a mature height of 10 feet, such as sagebrush and grass.

4.4 TLM Response to Vegetation Conditions During Working Patrols

4.4.1 Record Hazard

Record vegetation in the system-of-record as required in Section 4.3, Vegetation Condition Identification. Early identification and reporting will allow the information to be appropriately routed for immediate action or follow-up evaluation.

- Document the date the vegetation was identified.
- Record information about the vegetation including species and height.
- For working patrols record any cutting activity including brush removed and brush left to be cut later.

4.4.2 Removal Response Time

Follow the removal response times listed below and listed in Table 4.2.

1) Imminent Threat: Within 24 hours.

- If the NRS cannot facilitate the immediate removal, then the NRS will report the hazard to the TLM Foreman III to arrange removal within 24 hours of initial observation.
- If it is not possible to remove the threat within 24 hours, due to the following factors, then document the situation in the system-of-record and remove the vegetation as soon as possible.
 - Scheduling issues to obtain a required line clearance.
 - Cannot obtain traffic restriction permits for removal of vegetation along state and county highways within 24 hours.
 - Cannot obtain required third party approval within 24 hours.
- A fall-into, bend-into, grow-into, and swing-into danger tree or logging fringe can be an imminent threat.
- Once the threat is removed, the NRS will follow-up with any property owner and/or environmental entity, if necessary.
- Exceptions to the 24-hour imminent threat removal requirement will be allowed under certain conditions. See Section 4.8; Response to Danger Brush & Cycle Maintenance (Special Conditions) for the annual maintenance field season.

2) Danger Brush and Grow into Danger Trees: Within 15 days.

This is vegetation growing toward the conductor originating from on or off the ROW.

- TLM can remove danger brush encountered while on working patrol, if work can be accomplished within their work schedule.
- If removal cannot be accomplished within the TLM work schedule, the NRS should be notified and mitigation responsibility passes to NRS.

3) Danger Brush with Special Conditions: Within 15 days. See section 4.8.

4.5 Helicopter Observer Response to Vegetation Conditions.

- **Record Condition:** Record out of compliance vegetation in the system-of-record. Document the date the vegetation was identified and information about the vegetation (e.g., species, acres, danger/Cycle Maintenance, fall-, bend- and swing-into danger trees, etc.).
 - If an Imminent Threat is observed during aerial patrol, report the hazard to the TLM Foreman III and the Vegetation Management Program Manager immediately.
 - If Danger Brush/Danger Trees are observed during aerial patrol, report the hazard to the TLM Foreman III and the Vegetation Management Program Manager as soon as possible.

4.6 Third Party Contract Patrol and LiDAR Analysis Response (S)

If a third-party contract patrol observer or a Geospatial LiDAR analyst identifies out of compliance vegetation clearance issues, including Imminent Threats, Danger Brush, and Danger Trees the following actions **shall** be taken.

4.6.1 Imminent Threat Notification by Observer and NRS Response (S)

- 1) The observer **shall** notify the NRS as soon as possible via the most immediate medium. In most cases this will be via cell phone. If the observer does not have cell service at the field location, they **shall** drive to a suitable spot to make the call. The Observer **shall** not leave a message. The Observer shall continue down the phone tree until live contact is made in the following order:
 - a. District NRS.
 - b. District TLM Foreman III.
 - c. District TLM Foreman I.
 - d. Vegetation Management Program Manager.
 - e. Supervisory NRS.
- 2) The observer **shall** immediately follow-up the initial notification with an email to the NRS including an attached picture of the hazard, copying the District TLM Foreman III, TLM Foreman I, and the Supervisory NRS.
- 3) Each Imminent Threat email notification **shall** be sent in a separate email. No other notifications will be included in the email. The observer **shall** submit one notification per span.
- 4) The Imminent Threat email notification will contain this message in the subject line; “**ALERT – IMMEDIATE THREAT NOTIFICATION (LINE NAME)**”.
- 5) The NRS **shall** inspect the Imminent Threat location within 24 hours (sooner, if possible) to verify the validity of the hazard identification.

- 6) If the Imminent Threat is valid, the NRS will take responsibility for mitigation by:
- a. Contacting the TLM Foreman III to coordinate mitigation.
And either:
 - Ensure that TLM will mitigate the hazard within 24 hours of notification.
 - Assign the mitigation task to a vegetation contractor. A vegetation contractor **shall** mitigate the hazard within 24 hours of initial phone notification (sooner if possible).
 - b. Verify mitigation has been successfully accomplished by eliminating the Imminent Threat.
 - c. Once the Imminent Threat has been mitigated, the NRS will notify the TLM Foreman III, the TLM Foreman I, and the Supervisory NRS, by email.
 - d. If the Imminent Threat is from off Right of Way vegetation the NRS will notify the Realty Specialist requesting that the underlying landowner be notified.
- 7) If the Imminent Threat is not valid:
- a. The NRS will notify the Supervisory NRS and, when appropriate, critical TLM staff.
 - b. The Supervisory NRS will solicit a report from the observer and determine why the risk was identified as Imminent.
 - c. Supervisory NRS will report findings to the NRS.
 - d. The NRS **shall** document in database of record.

4.6.2 **Danger Brush Notification from Observer and NRS Response (S)**

The observer will notify the NRS as soon as possible. Notification will include locations of Danger Brush, heights, DBH and reason for its being classified Danger Brush such as DB, DTG, and Bend Into.

- 1) The observer will follow up the initial notification with an email to the NRS and Supervisory NRS. Observer **shall** include a picture of the out of compliance vegetation, if possible.
- 2) Each Danger Brush email notification will be sent in a separate email. No other notifications such as DT or CT will be included in the email. The observer can submit one notification per span.
- 3) The Danger Brush email notification will contain this message in the subject line; **ALERT – DANGER BRUSH NOTIFICATION (LINE NAME)**.
- 4) The NRS will inspect the Danger Brush location within 48 hours from the time it is reported to the NRS to verify the validity of the condition.
- 5) The NRS **shall** submit a Danger Brush report into the VIR reporting system.

- 6) If the Danger Brush condition originates from off ROW vegetation and is valid, the NRS will:
 - a. Notify the underlying landowner.
 - b. Contact a hotspot contractor to have the Danger Brush removed.
 - c. Once the threat is removed, the NRS will notify the Supervisory NRS by VIR reporting system.
- 7) If the Danger Brush condition is not valid.
 - a. The NRS will notify the Supervisory NRS via VIR reporting system.
 - b. The NRS will contact the observer to determine why the risk was identified as Imminent and report to Supervisory NRS.

4.6.3 All Other Vegetation Clearance Related Issue Reporting

All other vegetation clearance-related issues will be recorded in the system-of-record, in the observer's report, and/or in BPA's LiDAR database.

4.7 NRS Response to Vegetation Conditions

4.7.1 Imminent Threat Reports by Aerial Patrol (S)

- 1) Imminent Threat Reports by Aerial Patrol The aerial patrol will notify both TLM foreman III and NRS immediately.
- 2) Reports will be logged into the system-of-record.
- 3) The NRS **shall** field-verify the report and mitigate the hazard within 24 hours of reporting.

4.7.2 Removal Response Time (S)

Follow the removal response times listed below.

- 1) Imminent Threat Reported During non TLM Patrol: Fall-into, bend-into, grow-into, and swing-into danger trees or logging fringes may also pose an imminent threat.
 - Immediately notify the TLM Foreman III and NRS.
 - Removal within 24 hours.
 - See Table 4.2 in Section 4.10 for response times.
 - If it is not possible to remove the threat within 24 hours:
 - Document the reason for the delay in the Database of Record.
 - Remove Imminent Threat vegetation at the earliest opportunity.
 - System-of-Record: Once the threat is removed, the NRS will;
 - Notify TERG so GIS database can be updated.

- Notify property owner if applicable.
 - Notify environmental entities, if applicable.
 - Update system of record.
- 2) Danger Brush Reported During non TLM Patrols:
- Mitigate within 15 calendar days.
 - See section Table 4.2 in Section 4.10 for details and procedures.
- 3) Cycle Maintenance Reporting During All Patrols:
- Cycle Maintenance requires mitigation by May 31 of following calendar year. (Example: discovered April 2016 will be mitigated by May 31, 2017)
 - Corridor Tree (CT): CT **shall** be cut by next scheduled maintenance contract or no more than 2 years from identification, whichever comes first.
- 4) Grow Into Danger Trees(DTG) Reported During Patrols:
- Cut TDG's within 10-15 feet of clearance on lines <200kV by May 31 of following calendar year.
 - Cut DTG's within 15-20 feet of clearance on lines >200kV by May 31 of following calendar year.
- 5) For Bend Into, Fall Into, and Swing Into Danger Trees During all Patrols the NRS **shall** review danger tree reports and will schedule field evaluations.
- Allow adequate time for Valuation and Forestry to research landowner easements and agreements.
 - Acquisition of cutting rights may be required before Danger Trees can be cut.
 - Where Danger Tree rights have already been acquired according to easement documents, Danger Trees may be removed during the current fiscal year.
 - NRS compiles a Danger Tree list and submits it annually to Valuation and Forestry.
 - Valuation and Forestry notifies the NRS of the Notice of Rights Secured (NORS).
 - NRS schedules removal during the next fiscal year's vegetation clearing program or earlier as schedule and budget allow.
- 6) Other Vegetation Reported during All Patrols: TLM working patrol will only report imminent threat or Danger Brush. All other patrols can report other observed conditions such as invasive plants, slash piles, and other potential issues.

4.8 Response to Danger Brush & Cycle Maintenance (Special Conditions)

Actions to remove or cut vegetation may be impacted by legal constraints such as private property rights, pre-existing maintenance agreements, the Endangered Species Act, and other environmental laws.

- Working patrols and non-TLM patrols will apply the response actions in Sections 4.8.1 and 4.8.2 during the annual field season.
- All vegetation reported prior to the annual field season is subject to the reporting and response standards in place at the time of the report.

4.8.1 **Danger Brush With Special Conditions (S)**

Perform the following within 15 calendar days.

- 1) Agricultural and Crop Land: Report the Danger Brush minimum clearance violations to TLM Foreman III and NRS.
 - The NRS will arrange with the landowner, TLM, or a qualified line clearance tree trimmer contractor to top or trim the brush to ensure it is no longer violating Clearance Threshold requirements.
 - NRS **shall** document the action taken and enter it into the system-of-record.
 - NRS **shall** notify the Realty Specialist to initiate land rights analysis on the property.
 - Real Property Services will initiate work with Transmission Engineering, Legal and senior management to initiate a rights review analysis to determine whether to purchase rights, condemn property, or consider design changes.
 - If the Danger Brush is allowed to violate minimum clearance (DB) , the NRS will:
 - a. Document the allowable vegetation height in the system-of-record.
 - b. Continue monitoring until the rights to remove the vegetation are secured or the assets are removed.
 - c. Monitor the property frequently enough to ensure the vegetation does not become an imminent threat.
- 2) Developed Residential or Commercial Property: Document action taken in system-of-record.
 - Record, in system-of record, violations of any agreements in place such as violations of allowed vegetation clearance or height.
 - Report the violations to the Realty Specialist for cancellation.

- Report the Danger Brush to the TLM Foreman III and NRS, who will respond as follows:
 - a. If there is no vegetation agreement the NRS will arrange removal of vegetation within 15 calendar days and document action taken in the system-of-record.
 - b. If the vegetation agreement is violated the NRS will correct the vegetation encroachment after the notification period required in the agreement.
- 3) Vegetation Agreement “Heights Adhered To”: Within 15 calendar days the NRS will negotiate for full removal, topping or trimming of the vegetation to mitigate the Danger Brush Clearance threshold threat so it is re-classified as Cycle Maintenance. The NRS will:
 - Document the action taken in the system-of-record and;
 - Notify the appropriate Realty Specialist so they can modify the agreement if required.
- 4) Environmentally Sensitive Areas:
 - TLM working patrols will report the Danger Brush to the TLM Foreman III so arrangements can be made with Environment and the NRS for follow-up.
 - For other patrols the NRS will contact Environment. Within 15 calendar days Environment will provide recommendations to the NRS on how to minimize or avoid impacts to sensitive resources.
 - If the impact can be minimized or avoided, the vegetation will be removed as soon as possible.
 - If the impact cannot be minimized or avoided, the vegetation will be monitored monthly by the NRS and removed when the impact can be mitigated, or when the Danger Brush becomes an Imminent Threat to safety and reliability, whichever occurs first.

4.8.2 Cycle Maintenance & Danger Trees with Special Conditions

Response times are the same as in Section 4.7, with the following additional actions or exceptions:

- 1) Agricultural and Crop Land: All vegetation covered under agriculture, Land Use Agreements (LUA), and Tree and Brush Agreements (T&B) will be allowed to grow no closer than Cycle Maintenance. Refer to 4.8.1 a-e for procedures when observers or patrols find a situation where vegetation is growing into Cycle Maintenance.
- 2) If the vegetation is allowed to remain:
 - Document the allowable vegetation height in the system-of-record and eGIS.

- The NRS will monitor the vegetation each subsequent growing season to ensure the vegetation does not violate Clearance threshold Danger Brush (DB).
 - Monitoring and topping or pruning will continue until the rights to remove the vegetation are secured or the assets are moved.
- 3) Developed Residential or Commercial Property:
- Vegetation Agreement Violated: NRS may negotiate full removal within the required timeframes. If this is not possible and a notification period has been identified in the agreement then the NRS will;
 - Notify the Realty Specialist who will notify the landowner and cancel the agreement.
 - Arrange for the removal of the vegetation as soon as possible following notification.
 - Vegetation Agreement Heights Adhered To: NRS may negotiate full removal within required timeframes. If this is not possible and a notification period has been identified in the existing agreement then;
 - The NRS will notify the Realty Specialist who will review BPA's rights and, if appropriate, notify the landowner and cancel or modify the agreement.
 - If BPA has the appropriate rights, the NRS will facilitate the removal of the vegetation as soon as possible after notification.
 - If BPA does not have the rights to remove the vegetation, the Supervisory NRS will be notified and a plan will be developed to monitor vegetation clearance until mitigation can be accomplished.
- 4) Environmentally Sensitive Areas: If removal conflicts with environmental restrictions then;
- The NRS will contact Environment.
 - Request that within 15 calendar days Environment will provide recommendations to the NRS on how to minimize or avoid impacts to sensitive resources.
 - If the impact can be minimized or avoided, the vegetation will be removed as soon as possible.
 - If the impact cannot be minimized, the vegetation will be monitored by the NRS and removed when the impact can be mitigated or when the vegetation violates Danger Brush minimum clearance, whichever comes first.

4.9 Response Exceptions for Unsafe Conditions

The following describes response exceptions for unsafe conditions, action requiring purchase of property and other legal requirements.

- 1) Vegetation Agreement Violated: NRS may negotiate full removal within the required timeframe. If this is not possible and a notification period has been identified in the agreement, the NRS will;
 - a. Notify the Realty Specialist who will notify the landowner and cancel the agreement.
 - b. Facilitate the removal of the vegetation as soon as possible after the cancellation.
- 2) General: Deviations from these response actions and timeframes are acceptable when conditions outside the control of BPA prohibit a response. In these cases, changing conditions will be regularly monitored so that removal occurs as soon as it is reasonable and safe.

Examples of these conditions are:

- Inaccessibility due to weather or other unsafe conditions.
 - Inaccessibility due to threat of bodily injury or legal action. In situations in which a BPA employee or contractor is threatened or refused access by a property owner, it is acceptable for a delay to occur in order to obtain appropriate law enforcement assistance and, if necessary, a court order to gain access to the property. Information on these incidents is recorded in TFBV's Public Relations Escalation Process.
- 3) Legal Constraints: In cases when the necessity of acquiring property rights or property owner litigation restricts BPA's ability to remove non-compliant vegetation, action will be taken to ensure that no Danger Brush exists and that the vegetation is adequately monitored until rights to remove the vegetation can be assured.
 - 4) Documentation: Document the reason for deviating from the response timeframe in the system-of-record.

4.10 Correction Response Summary Table

<p align="center">Table 4.2 CORRECTON RESPONSE</p>						
Category of Vegetation	Patrol Type	Correction Responsibility	Clearance (ft.): Max Sag- to- Vegetation	Voltage or Designation	Priority	Correction Time
Imminent Threat	All	NRS	MVCD+5 ft. (as observed)	≤ 200 >200	1	24 hours**
Danger Brush	All	NRS*	≤10 ≤ 15	≤ 200 >200	2	15 calendar days
Danger Brush	All	NRS*	<3	Fiber optic	2	15 calendar days
Danger Brush* (Special Conditions re: 4.8)	Non-TLM	NRS*	≤10 ≤15	≤ 200 >200	2	15 calendar days
Cycle Maintenance	All	NRS	<10-15>15-20	≤200 >200	3	By May 31of following calendar year

* TLM working patrol may correct if it reports Danger Brush that can be treated in less than 2 man-hours total time.

** Or as soon as possible. Refer to Section 4.9.

4.11 Role Base Response

Once notified, the NRS will assume Lead responsibilities for all Imminent Threat reports.

Observed by:		TABLE 4.3 Expected Response(s)				
		Aerial	LiDAR	TLM	NRS	Contractor
Imminent Threat (Priority 1)						
Aerial		Notify TLM & NRS, record in System-of-Record	No response	<ul style="list-style-type: none"> Notify and/or coordinate with NRS to arrange removal within 24 hours See Section 4.9 for Exceptions and subsequent responses Record in Cascade 	<ul style="list-style-type: none"> Work with TLM to remove threat within 24 hours of reporting Record in system-of-record NRS will assume Lead responsibilities as soon as notified. 	No response
Contractor		No response	No response	<ul style="list-style-type: none"> Coordinate with NRS as <u>needed</u> to arrange removal within 24 hours. 	<ul style="list-style-type: none"> NRS assumes Lead responsibilities Notify and coordinate with TLM as needed to remove threat within 24 hours Immediately notify Supervisory NRS & Supervisory NRS See Section 4.9 for Exceptions and subsequent responses Record in system of record 	Follow process as identified in Section 4.6.1
LiDAR		No response	Follow process identified in Section 4.6.1			No response
NRS		No response	No response			No response
TLM		No response	No response	<ul style="list-style-type: none"> TLM takes initial lead Notify Control Center per "TLM-STD-4-8, Reporting of Encroachments and Hazardous Conditions, Sect 4.2.3. Notify and/or coordinate with NRS to arrange removal within 24 hours See Section 4.9 for Exceptions and subsequent responses. Record in System-of Record. 	<ul style="list-style-type: none"> Work with TLM to remove threat Record in system-of-record TLM may transfer lead to NRS to treat 	No response

Danger Brush (Priority 2)						
Observed by:		Aerial	LiDAR	TLM	NRS	Contractor
Aerial		No response	No response	<ul style="list-style-type: none"> TLM Foreman notified via VVIR 	<ul style="list-style-type: none"> NRS TAKES LEAD Validate the Danger Brush on site within 2 days If it is not valid, notify Supervisory NRS and Vegetation Program NRS, along with entering into system-of-record If valid, arrange removal within 15 calendar days & record in system-of-record 	
Contractor		No response	No response	No response		<ul style="list-style-type: none"> Follow process identified in Section 4.6.2 Report in system-of-record
LiDAR		No response	<ul style="list-style-type: none"> Notify Supervisory NRS & Veg Program Manager Record in system-of-record 	No response		No response
NRS		No response	No response	No response		No response
TLM		No response	No response	<ul style="list-style-type: none"> Cut if less than 2 man-labor hrs. per Section 4.4.2 and/or notify NRS for further assessment Record in Cascade 		No response

Cycle Maintenance (Priority 3)						
Aerial		No response	No response	No response	No response	No response
Contractor		No response	No response	No response	<ul style="list-style-type: none"> Validate input data and conduct Scheduled Assessment 	<ul style="list-style-type: none"> Record in data collector.
LiDAR		No response	Record in GIS.	No response		No response
NRS		No response	No response	No response		No response
TLM		No response	No response	Optional: Record in TLM data collector		No response

5. SUMMARY OF CHANGES

09/22/2015

Dave Baldwin Revised

1. Pages 1-23 - Converted the document from the Roman Numeral format to the BPA Standards Group document format.

August 2015

Alan DeJong Revised

1. The Vegetation/Access Road Management Group (TFBV) performed an extensive revision to this Standard. (Too many changes to list).

02/08/2017

Vegetation / Access Road Management Group (TFBV) has continued with revisions to the 2015 edition of TLM-STD-7-2-1.

1. Format changes include but not limited to:

- Eliminating non-essential content.
- Clarifying ambiguous directives.
- Extensively reformatting to make the document easier to read and follow.

2. Quantifiable changes to the Standards are:

- Change from two Cycle Maintenance (CM) clearance zones to one. CM Clearance Thresholds are noted in the text, tables and diagrams.
- Establishing Swing-Into clearance threshold to be MVCD.

04/19/2017

Steve Duncan revised

1. Page 3 – Added definition - “Major Storm Event: The occurrence of storms and other significant weather phenomena having sufficient intensity to cause loss of life, injuries, significant property damage, and/or disruption to commerce”.