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UVM-05
Utility Vegetation Management
Integrated Vegetation Management Plan (IVMP)

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1 Introduction

1.1 Purpose

Integrated Vegetation Management (IVM) is the practice of promoting desirable, stable, low-growing plant communities that will resist invasion by tall growing tree species through the use of appropriate, environmentally-sound, and cost-effective control methods. These methods can include a combination of chemical, biological, cultural, mechanical, and/or manual treatments. The use of these methods can provide long-term cost reductions and reduce the risk of outages and fires while improving wildlife habitat.

ANSI A300, Part 7 (2012) describes the six steps for IVM as follows:

1. Set Objectives
2. Evaluate the site
3. Define action thresholds
4. Evaluate and select control methods
5. Implement control methods
6. Monitor treatment and quality assurance

1.2 Site Objectives

The desired outcome of IVM on SCE transmission rights-of-way (ROW), and applicable distribution easements, is the development of sustainable shrub or grassy areas that do not interfere with overhead power lines, pose a fire hazard, or restrict access. The following describe IVM applications.

Low-growing Stable Plant Community: Wherever possible, control methods will target tall-growing vegetation and encourage or introduce desirable low-growing species, particularly shrubs and indigenous plants that are naturally present on the site, in order to suppress tall-growing species.

Compatible Use: ROWs used for activities that will not conflict with transmission lines and that control or prevent the growth of tall trees, such as recreational or agricultural uses.

Altering Existing Vegetation: In cases where it is impractical to remove undesirable species from along the edges of the ROW, existing vegetation can be modified by pruning to maintain the Compliance Clearance Distance (CCD) as described in the Transmission Vegetation Management Plan (TVMP).

No Clearing Required: Areas where existing vegetation is compatible with existing and future clearance requirements. This would include areas where vegetation are compatible with the location and will not grow, at maturity, into required clearances, or create access issues.

2 Applicability

This document is applicable to the Operating Units impacted by Energy Regulatory Compliance Program (ERCP) Compliance Requirements related to Vegetation Management, which include:

- Generation
- Transmission & Distribution

3 Definitions

Refer to the NERC Glossary of Terms, the E&C Shared Services Glossary of Terms (ECSS-02), and UVM Program Glossary of Terms (UVM-16) for any capitalized terms used in this document.

4 Document Detail

4.1 Areas Covered by this Plan

This IVMP covers vegetation management, including the use of herbicides, within transmission ROW boundaries.

Implementation of the IVMP will be based on site selection and assessment criteria as described in sections 4.2 and 4.3. Final determination of implementation will be at the discretion of Vegetation Management Operations Managers.

4.2 Criteria for Selecting Sites

The primary target vegetation to be controlled on transmission ROWs are conifers, deciduous trees, and brush that have the potential to encroach into the CCD (refer to UVM-02 TVMP and UVM-03 DVMP). In certain cases, other vegetation can remain on the ROW to improve biodiversity and to out-compete target vegetation. ROWs that contain target vegetation will be evaluated as described in 4.3. An IVM Site Plan should be developed for each selected site as appropriate. The plan should be specific as to the scope, objectives, and monitoring methods.

4.3 Site Evaluation

ROWs evaluated for implementation of IVM can vary. Site considerations are:

- Site objectives[1]
- Short-term
- Long-term
- Transmission line attributes (sag, sway)
- Safety (public and worker)
- Vegetation types
- Invasive and noxious weeds
- Density of target vegetation
- Height of target vegetation
- Fuel loading
- Geography/terrain
- Slope
- Access
    - Suitability for herbicide applications
    - Compatibility with other land use
    - Condition of the target area and target vegetation
    - Environmental considerations
        - Wildlife habitat
        - Protected species habitat
        - Wetlands
        - Other bodies of water
        - Archeological and cultural sites
- Short and long-term impacts of treatment
- Control methods
- Applicable regulations (site specific i.e., land ownership)
- Fire risk
- Aesthetics
- Cost

4.4 Defining Action Thresholds

SCE tolerance levels for vegetation encroachments are described in UVM-02, Transmission Vegetation management Plan (TVMP) and UVM-03, Distribution Vegetation management Plan (DVMP). Action thresholds are defined as the point at which vegetation management should occur to prevent conditions from reaching intolerance levels.

[1] See Paragraph 2.1

In order to establish tolerance levels and action thresholds, the potential growth of vegetation and conductor sag and sway must be considered.

Maintaining appropriate clearances is only one of the objectives of IVM. Preventing incompatible vegetation from being established on ROWs and promoting desirable, sustainable and, stable low-growing plant communities that will resist invasion by tall growing tree species are the long-term objectives.

4.5 Treatment Method Selection

A decision-making process for choosing treatment methods provides reasonable assurance that the most sustainable, effective, and cost-effective methods or combination of treatments are selected for an area to be managed. This takes into consideration both the site selection and site assessment criteria.

The overall objective for a site will guide the treatment method selection. The best methods are those that will meet the ROW long-term site objectives. Treatments will be timed for maximum efficacy, with consideration given to seasonal growing conditions and weather.

4.6 Treatments

Mechanical and Manual: These controls physically impact or remove vegetation on a site. This can include mowing, slashing, cutting, grubbing, hand-pulling, girdling, tilling, and thermal control (i.e., prescribed burns). IVM programs work to reduce mechanical and manual effort for controls over time in order to:

- Increase worker safety
- Reduce environmental and landscape alteration and impact
- Reduce wildlife and workers' exposure to noise and petroleum products from machinery

Chemical: The careful, limited use of herbicides is an important part of vegetation management on ROWs. In certain circumstances, herbicides can be the only effective means of control on ROWs. When the application of herbicides is indicated, a Pest Control Advisor (PCA) will write the recommendation for the treatments as required by the Department of Pesticide Regulations (DPR).

An IVMP that combines mechanical and manual techniques with site-specific follow-up use of herbicides is often the most effective and efficient way to establish a stable, low-growing plant community. Herbicides are used primarily on deciduous trees and tall brush species because they are fast-growing and quick to resprout as compared to conifers.

Herbicide application methods vary depending on the targeted vegetation and include:

- Cut Surface – Used in conjunction with cutting in deciduous stands. The tree is cut as low as possible to the ground, and herbicide is applied within 10 minutes to the cut surface of the stump to limit resprouting

- Basal Bark – This treatment applying herbicide onto the lower bark of the target plant. The herbicide penetrates the bark into the cambium layer and diffuses throughout the tree and the roots, to kill the plant. It is generally applied with a low-volume backpack or hand-held sprayers
- Foliar – This treatment sprays herbicides onto the foliage of individual plants, using a manually-operated, low-volume, pressurized backpack sprayer.
- Mechanical Foliar – This treatment method uses a fixed nozzle or boom-directed nozzle or wick sprayer mounted on a vehicle, to spray herbicides onto the foliage of target plants
- Tree Growth Regulators – SCE does not currently use this method but options could be explored for future application.

Cultural: This involves the introduction of specific plants or mulches to control vegetation growth or promote a desirable plant community. Examples of cultural control include:

- Introduction of desired native species
- Use of weed barriers, such as hardscapes and weed mats
- Use of mulch and compost
- Temporary use of plastic to remove undesirable species using solarization

Biological: This involves using living organisms to control and manage unwanted vegetation, often through consumption or competition. Examples of biological control include: animals, plants, fish, insects, and disease organisms (e.g., bacteria, viruses, parasites, fungi, etc.). There are two primary biological control methods:

- Living systems – Grazing sheep, goats, cattle, and horses can be used to control plant growth
- Beneficial predators – Predatory species are introduced to a site to consume and/or out compete unwanted vegetation

4.7 Monitoring Treatment and Quality Assurance

An effective program must have documented processes to verify that work was completed as described in the recommendation and evaluate treatment results.

After the treatment has been completed at a site, information is collected to evaluate the effectiveness and measure the results against the site objectives.

The purpose of this evaluation is to:

- Determine if site objectives were achieved
- Evaluate and adjust work plans accordingly
- Determine the success of treatment techniques
- Ensure no negative environmental impacts occurred
- Adapt to changes in regulatory or environment for long-term viability of treatment

4.8 Monitoring Methods – Herbicide Applications

Monitoring methods are customized for each area and for each type of treatment. The monitoring methods must be specified in the IVM Site Plan.

4.9 Ongoing Maintenance

IVM is a long-term approach to vegetation management that allows reduced vegetation management as the program matures over time. Maintaining a successful program will reduce the effort required to manage vegetation, and will:

- Create sustainable environment
- Reduce vegetation management costs
- Reduce environmental risks
- Reduce human health risks

4.10 Outreach and 3rd Party Coordination

SCE UVM will coordinate with the following parties for outreach and notifications and/or approvals of IVM activities.

- Property Owners
- Land Agencies

4.11 Contract Resources

Contract resource needs are evaluated on an annual basis.

5 Approvals

Program Manager	Signature	Date
Melanie Jocelyn, Principal Manager	***Melanie Jocelyn*** / Approved by E-mail	5/16/19

6 Revision History

Revision Number	Date	Description of Revision	By	Next Review Date
1	2/15/2019	Initial release for UVM Program	Amanda Duchardt	2020
2	5/17/19	General Document Refresh	Bill Kotteakos	5/17/20

7 References

External References

- ANSI A300, Part 7
- Department of Pesticide Regulations (DPR)

Internal References

- ECSS-01, E&C Shared Services Glossary of Terms
- UVM-02, Transmission Vegetation Management Plan
- UVM-03, Distribution Vegetation Management Plan
- UVM-16, UVM Program Glossary of Terms

8 Distribution and Data Retention

The official version of the document shall be stored in the T&D Vegetation Management UVM Program SharePoint Document Library while in effect and retained for at least seven (7) years thereafter.

Distribution list:

- T&D VM Managers
- E&C Program Management Office
- Impacted OU Touchpoints

9 Key Contacts

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