SCE	Legal, Regulatory, and Compliance	Transmission & Distribution Utility Vegetation Management (UVM)	Reference	Doc. No.	UVM-06
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	Supersedes	Version 1			
LiDAR Schedule Reference Guide					

UVM-06
Utility Vegetation Management
LiDAR Schedule Reference Guide

LiDAR Schedule Reference Guide

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LiDAR Schedule Reference Guide

1. Introduction

Light Detection and Ranging (LiDAR) is a surveying method that measures distance to a target by illuminating the target with pulsed laser light and measuring the reflected pulses with a sensor. Differences in laser return times can then be used to make digital three-dimensional representations of the target. On the SCE system, a LiDAR survey is conducted via air patrol.

SCE uses LiDAR as an inspection and measurement tool to identify Compliance Clearance Distance (CCD). This method of inspection and measurement is used on selected Rights of Way (ROW) in the SCE system. This procedure establishes the frequency that LiDAR is used on impacted ROWs within the SCE System. SCE has established a schedule based on criteria for LiDAR surveys to be performed. The Table LiDAR ROW Schedule provides the Class designation for each ROW. Only ROWs which have a LiDAR schedule are included in the table. (Refer to Attachment A.)

In addition, the LiDAR ROW Class designation can change over time. If the density of vegetation on a ROW decreases significantly, a ROW may be de-rated. For example, a re-claimed Class A ROW may be downgraded to a Class B ROW. Also, in locations where the conductors have changed due to construction, the spans of line affected may be surveyed off-cycle.

2. Applicability

This document is applicable to the Operating Units (OU's) impacted by ERCP Compliance Requirements including, but not limited to:

- Transmission & Distribution

3. Document Detail

3.1 LiDAR ROW Criteria for Study

3.1.1 Class A ROW

Frequency: Annual

Class A ROWs are all ROWs in areas with dense vegetation coverage and challenging terrain. Air patrols are not used due to the ineffective angle of observation to the ROW. Minimum conductor to ground clearances have not been achieved, and sag and sway conditions are prevalent. ROWs may have narrowed due to extenuating circumstance and Grid Resiliency regulatory clearance has not been achieved.

3.1.2 Class B ROW

Frequency: Biennial

Class B ROWs are all ROWs in areas with low to moderate vegetation coverage and challenging terrain. Air patrols are not used due to the ineffective angle of observation to the ROW. Minimum conductor to ground clearances have not been achieved, and sag and sway issues are found is some spans. ROWs may have narrowed due to extenuating circumstance. Grid Resiliency regulatory clearance has not been achieved.

3.1.3 Class C ROW

Frequency: Every 3 years

Class C ROWs are all ROWs in areas with low to moderate vegetation coverage. Air patrols are not used due to the ineffective angle of observation to the ROW is some sections of the ROW. Poor ROW accessibility or rough terrain makes ground measurements difficult to calculate between vegetation and conductors in some sections. Grid Resiliency regulatory clearance has been achieved.

3.1.4 Class D ROW

Frequency: Every 5 Years

Class D ROWs are in areas with low to moderate vegetation coverage. ROW access is maintained, conductor to ground clearances have been achieved. Grid Resiliency regulatory clearance has been achieved.

3.1.5 Class E ROW

Frequency: As Needed

Class E ROWs has areas with low to moderate vegetation coverage. Full regulatory clearance has been achieved. Study is needed to establish baseline.

3.1.6 Class F ROW

Frequency: Not Studied

Class F ROWs have clear a line of sight for air patrols. These ROWs have good access. All sag and sway issues have been identified and mitigated.

4. Approvals

Program Manager	Signature	Date
[NAME REMOVED], Principal Manager	[NAME REMOVED]	5/16/19

5. Revision History

Revision Number	Date	Description of Revision	By	Next Review Date
1	7/8/2018	Original content	[NAMES REMOVED] UVM Team	12-21-2019
2	5/17/19	General Document Refresh	[NAME REMOVED]	5/17/20

6. References

6.1 External References

NERC Glossary of Terms: https://www.nerc.com/pa/Stand/Glossary%20of%20Terms/Glossary_of_Terms.pdf

6.2 Internal References

ECSS-02, E&C Shared Services Glossary of Terms
UVM-16, UVM Program Glossary of Terms

7. Attachments

Attachment A: Transmission Circuits ROW Criteria – Example (latest version is located on the VM SharePoint site)

8. Distribution and Data Retention

Version Retention: This version of the document shall be stored on the Maintenance and Inspection server (\\sce\workgroup\TDBU20\ts compliance) while in effect and for at least seven (7) years thereafter.

9. Key Contacts

UVM Senior Specialist: [NAME REMOVED]

LiDAR Schedule Reference Guide

Attachment A
Transmission Circuits – Representative Sample Only - Example

2019 Veg. Mang. Annual Work Sch										
Zone	Dist	Grid/Circui	Circuit Name	Voltage	Owner	Vegetati	Lidar Clas	Comment/Justification for A and B classificaitons.	Trim Mon	Major WECC Path
7	29	00132	Serrano-Valley	500.00 kV	NERC	Yes	A		1	No
3	35	00775	Moorpark-Santa Clara No. 1	220.00 kV	NERC	Yes	A	Unable to drive full line. Limited access over mountains-Must rely on Helicopter for observation. Parts of line have no access to inspect	1	No
3	35	00778	Moorpark-Santa Clara No. 2	220.00 kV	NERC	Yes	A	Unable to drive full line. Limited access over mountains-Must rely on Helicopter for observation. Parts of line have no access to inspect	1	No
3	39	00770	Santa Clara-Vincent	220.00 kV	NERC	Yes	A	Unable to drive full line. Limited access over mountains-Must rely on Helicopter for observation. Parts of line hve no access to inspect	1	No
3	49	00337	Goleta-Santa Clara No.1	220.00 kV	NERC	Yes	A	Unable to drive full line. Limited access over mountains-Must rely on Helicopter for observation. Parts of line hve no access to inspect	1	No
3	49	00338	Goleta-Santa Clara No.2	220.00 kV	NERC	Yes	A	Unable to drive full line. Limited access over mountains-Must rely on Helicopter for observation. Parts of line hve no access to inspect	1	No
5	27	00707	Rio Hondo-Vincent No.2	220.00 kV	NERC	Yes	A		2	No
5	27	00708	Rio Hondo-Vincent No.1	220.00 kV	NERC	Yes	A		2	No
3	59	00624	Pardee-Pastoria-Warne	220.00 kV	NERC	Yes	A	Requires a 6 hour foot patrol due to terraine. Safety concern. Only access is from freeway (I-5)	2	No
2	50	01046	Big Creek 3-Rector No.1	220.00 kV	NERC	Yes	A	Major sag/sway/conductor to ground issues; lots of work performed invalidating existing LiDAR	5	No