

Reliability Objective

It is important that the transmission line Right of Way (ROW) is monitored to ensure that vegetation growth into and adjacent to the ROW is managed to prevent the risk of vegetation related outages.

Since vegetation growth is constant and always present, it is important that entities implement a defense-in-depth approach to vegetation management with inspections as an input to the vegetation management strategies and plans or as follow-up line of defense to ensure that vegetation management has been carried out according to the plan. As part of the strategy for managing vegetation located on transmission rights of way, inspections serve to reduce the risk of vegetation related outages.

To reduce the vegetation related outage of the transmission line, it is important to have a work plan to maintain encroachments within the Minimum Vegetation Clearance Distance (MVCD). The flexibility in the work plan is an important component to reprioritize the work as needed based on changing conditions.

WECC Intent

The potential failure points and guidance questions provide general direction to registered entities for assessment of risk while designing internal controls specific to NERC Reliability Standards and Requirements. The Registered Entity may use this document as a starting point in determining entity risk and it is not WECC's intent to establish a standard or baseline for entity risk assessment or controls design.

***Note:** Guidance Questions serve to aid an entity in understanding and/or documenting its controls. Any responses, including lack of affirmative feedback, will have no consequences to an entity's demonstration of compliance at audit.*

**Please feel free to provide feedback to ICE@WECC.org with suggestions on Potential Failure Points and Guidance Questions.*

Potential Failure Points & Guidance Questions

FAC-003-4 (R1, R2)

Potential Failure Point (R1, R2): Failure to develop a program to manage vegetation.

1. How does your entity ensure that the program addresses the following?
 - a. Vegetation growth
 - b. Vegetation health
 - c. Vegetation positioning
 - d. Conductor dynamics
2. Does your entity program define circumstances that are beyond their control? (*See footnote (4) in R1 requirement*)
3. Who is responsible for ensuring that vegetation-related processes, procedures, and documents are created, reviewed and updated?
 - a. How often are the documents reviewed?
 - b. What are the criteria that would trigger an update to the documents and who is responsible to do it?

Potential Failure Point (R1, R2): Failure to develop a process to identify applicable lines subject to FAC-003-4 vegetation management requirements.

1. Does your entity have a process to identify transmission lines where FAC-003-4 applies?
2. What is [the entity's] process to ensure that the vegetation management program is updated when applicable transmission lines are added, removed, or modified?

Potential Failure Point (R1, R2): Failure to develop a process to identify the ROW for applicable lines.

1. How has your entity identified the ROWs for their lines?

FAC-003-4 R3

Potential Failure Point (R3): Failure to develop a methodology for documenting the selected maintenance approach(es).

1. How does your entity's maintenance documentation outline the methodology used to account for all sub-parts of R3?



- a. Does your entity's approach include the movement of applicable line conductors under their Rating and all Rated Electrical Operating Conditions?
- b. Does your entity's approach include inter-relationships between vegetation growth rates, vegetation control methods, and inspection frequency?

Potential Failure Point (R3): Failure to communicate the approach(es) to be used for maintenance.

1. How does your entity ensure that personnel responsible for performing maintenance are knowledgeable of the entity's approach(es) to maintenance?
 - a. If using vendors, how are they informed of the approach(es)?
 - b. How does your entity assess adherence to the documented maintenance approaches?

FAC-003-4 R4

Potential Failure Point (R4): Failure to develop a process to identify vegetation conditions that are likely to cause a fault.

1. Describe tools or practices used to identify vegetation conditions that are likely to cause a fault.
 - a. What training or qualifications do field personnel have to ensure that vegetation conditions are adequately assessed?

Potential Failure Point (R4): Failure to develop a procedure on how notifications are to occur.

1. Does your entity's procedure outline the timeframe expected for the notification?
2. Does your entity's procedure outline the individual responsible for making the notification?
3. Does your entity's procedure indicate who holds the control center switching authority for each line?

FAC-003-4 R5

Potential Failure Point (R5): Failure to develop a process or procedure to effectively manage the risk of a vegetation encroachment into the MVCD when vegetation work is constrained.

1. Does your entity's procedure include:
 - a. Identifying of locations where your entity is constrained from performing planned vegetation maintenance work.



- b. Developing specific actions to mitigate any potential risks associated with not performing the vegetation maintenance work as planned.
- c. Documenting and tracking the specific corrective action taken at each location.

Potential Failure Point(R5): Failure to clearly outline qualifying constraints that may impact vegetation maintenance activities.

1. Does your entity have a process or criteria to determine whether a condition legitimately constrains vegetation work?

Potential Failure Point (R5): Failure to define interim corrective actions to be taken during constrained circumstances.

1. How are the corrective actions documented?
2. How does your entity ensure corrective actions mitigate potential risks?
3. How are the corrective actions tracked to completion?

FAC-003-4 R6

Potential Failure Point (R6): Failure to develop a process to identify transmission lines for which inspections are required.

1. Does your entity have a process to identify transmission lines for which inspections are required?
2. What is your entity process to document the due date that Vegetation Inspections are due for each applicable transmission line?

Potential Failure Point (R6): Failure to develop and communicate the unit of measurement strategy to be used in vegetation management plans.

1. How has your entity identified the unit of measurement to be used in their plans?
 - a. How has your entity made personnel aware of the unit of measurement?

Potential Failure Point (R6): Failure to develop a procedure on how inspections are to be performed.

1. How does your entity document the inspections?
 - a. Has your entity established a document management/retention policy for the inspections?
 - b. How does your entity ensure completed inspection work or work orders documented by field personnel make it to the tracking system?



2. What controls has your entity implemented to ensure inspections are performed within the required timeframe?
 - a. What controls has your entity implemented to track which lines have inspections or work orders coming due?
 - b. What controls has your entity implemented to detect missed deadlines and how are they addressed?
3. How does your entity assign work to inspection crews?
 - a. How are work orders generated and tracked?
 - b. How are notifications of upcoming or overdue inspections created?
 - i. Who receives notifications of overdue inspections?
4. Does your entity have a post-inspection review process that confirms that the inspections were completed correctly?
 - a. Does that process include a description of how many applicable transmission lines are reviewed and whether the entire line or a portion of the line was reviewed?
5. If inspections cannot be completed, does your entity have a process to develop a corrective action plan?
 - b. How does your entity ensure that inspection issues are corrected?
6. How does your entity ensure crews performing inspections have adequate training?

Potential Failure Point (R6) Failure to clearly define or communicate start/end dates used to establish timeframe(s) for inspections.

1. Has your entity established a post-inspection review process that confirms that the inspections or work orders were completed on time?
2. How does your entity ensure that any added, existing or removed transmission lines are included in inspection and updated work plans?
 - a. How does your entity ensure communications regarding changes to transmission facilities are received by all personnel who require the information?
 - i. For example, what coordination is in place between transmission planning, vegetation management, vendors, and compliance reporting for identifying new, existing and retired transmission lines and updating the work plan accordingly?

Potential Failure Point (R6): Failure to develop a process to make modifications to the work plan in response to findings from Vegetation Inspections.



1. How has your entity outlined the process to modify work plans in response to inspection findings?
2. How does your entity ensure that any concerns identified during the Vegetation Inspection are addressed?

FAC-003-4 R7

Potential Failure Point (R7): Failure to develop a process to create annual work plans.

1. How does your entity develop annual work plans?

Potential Failure Point (R7): Failure to develop a process for determining a qualifying event that could trigger a modification to a work plan.

1. How has your entity defined scenarios that would trigger a modification to a work plan?

Potential Failure Point (R7): Failure to develop a process to assign and schedule vegetation management work consistent with the work plan.

1. How does your entity assign and schedule the annual work plan for vegetation management?
2. How is completed vegetation management work documented by your entity from field notes to the tracking system?

Potential Failure Point (R7): Failure to develop a process to monitor progress of annual vegetation work plan.

1. How does your entity monitor progress toward the annual work plan?
2. If work orders cannot be completed, how does your entity ensure that issues are identified and corrected?
3. Describe any post-work review process that confirms that the vegetation management work was completed on time.

Potential Failure Point (R7): Failure to develop a process to make modifications to the work plan in response to changing conditions or to findings from Vegetation Inspections.

1. How has your entity defined criteria that would trigger modifications to the plan?
 - a. How does your entity document modifications to the work plan?



2. Does your entity have a specific responsible person for making modification and approving the modification to the work plan?
3. How does your entity ensure that modifications to the work plan do not result in an encroachment?
 - a. Describe tools or practices used by the inspection crews to identify potential encroachments into the MVCD.
 - b. What training or qualifications do field personnel have to use those tools?
4. How does your entity ensure well-trained personnel or subcontractors conduct inspections?
 - a. What training is provided to personnel or subcontractors to enable them to identify potential vegetation related risks?

Potential Failure Point (R7) Failure to clearly define or communicate start/end dates used to establish timeframe(s) for work plans.

1. How does your entity ensure that any added, existing or removed transmission lines are updated in the annual work plan?
2. What protocols does your entity follow to ensure communications regarding changes to transmission facilities are received by all personnel who require the information?
 - a. For example, what coordination is in place between transmission planning, vegetation management and compliance reporting for identifying new, existing and retired transmission lines and updating the TVMP accordingly?

