

Reliability Standards

FAC-003-1 and FAC-008-1

- *Why do we have them?*
- *What do they mean and how do they affect you?*
- *How can PLS-CADD help you?*

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FAC-003-1 Transmission Vegetation Management Program

Reason:

1. Vegetation caused outage and subsequent blackout of 2003

- **Facts**

- **Blackout affect over 50 million people**
- **265 power plants shut down**
- **Ambient temp of 88°F**
- **Canada blamed US, US blamed Canada**

FAC-003-1 Transmission Vegetation Management Program

2003 Blackout:

- **Causes**
 - **Many examples of human failure**
 - **Main cause was the failure to trim trees on a rural line in Ohio.**
 - **(4) 345 kV lines fail due to direct contact with trees during maximum thermal conditions.**

FAC-003-1 Transmission Vegetation Management Program

Solution:

- **Energy Policy Act of 2005**
 - **Granted the Federal Energy Regulatory Commission (FERC) the right to review and approve mandatory reliability standards for the nations bulk transmission system.**
 - **Authorized FERC to certify a National Electric Reliability Organization (ERO) to develop and enforce mandatory reliability standards for the bulk-power system.**

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Solution:

- **Energy Policy Act of 2005**
 - **FERC designated the North American Electric Reliability Corporation (NERC) as the Electric Reliability Organization (ERO)**
 - **NERC creates these standards with cooperation and input from industry and other stakeholders.**
 - **NERC, in turn, designated eight Regional Entities, which also operate under FERC authority, to address and implement standards at a regional level.**

FAC-003-1 Transmission Vegetation Management Program

Purpose:

to improve the reliability of the transmission grid by:

- **Preventing outages from vegetation on rights of way**
- **Minimizing outages from vegetation adjacent to rights of way**
- **Maintaining clearances between lines and vegetation**
- **Reporting vegetation related outages**

FAC-003-1 Transmission Vegetation Management Program

Requirements:

- 1. The transmission owner shall prepare and keep current a transmission vegetation management plan (TVMP)**
 - The TVMP shall define a schedule for R/W inspections**
 - The TVMP shall identify and document vegetation clearances at maximum design loading, and with the effects of wind (not defined)**
 - Specifically, maintenance clearances (clearance 1) and flashover clearances (clearance 2)**

FAC-003-1 Transmission Vegetation Management Program

Requirements:

- 2. The transmission owner shall create a work plan for vegetation management.**

- 3. The transmission owner shall report quarterly to its RRO any sustained outages.**
 - Category 1 = Grow-ins from inside the R/W**

 - Category 2 = Fall-ins from inside the R/W**

 - Category 3 = Fall-ins from outside the R/W**

FAC-003-1 Transmission Vegetation Management Program

Measurements:

- 1. The transmission owner has a documented TVMP.**
- 2. The transmission owner has a documented work plan.**
- 3. The transmission owner has supplied the outage reports to it's RRO.**
- 4. The RRO has supplied the outage reports to NERC.**

FAC-003-1 Transmission Vegetation Management Program

Compliance:

- 1. Monitoring.**
- 2. Levels of non-compliance.**
 - Level 1 - Incomplete TVMP or work plan or an outage report wasn't correctly submitted.**
 - Level 2 - 1 category 2 outage in a calendar year.**
 - Level 3 – 1 category 1 outage or multiple category 2 outages.**
 - Level 4 – Multiple category 1 outages in a calendar year.**

FAC-008-1 Facility Ratings Methodology

The purpose is to ensure that facility ratings are determined based on an established methodology:

Requirements:

- 1. The rating methodology shall be documented.**
- 2. The rating methodology shall be open for inspection and technical review.**
- 3. The transmission owner shall respond to questions in regard to it's rating methodology in 45 days.**