

DEDSTF Galloping Design Standard Proposal:

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Mitigation:

Lines shall be designed to mitigate galloping unless a study is performed demonstrating the line configuration is not prone to galloping. Mitigation shall be by the following methods:

- Providing adequate electrical clearances
- Providing structures designed for additional cyclical stresses of galloping conductors.

Electrical Clearances:

Single loop galloping shall be used for spans less than 700 feet. Double loop galloping shall be used for spans of 700 feet or greater or any span that has strain connections on both ends.

One of two methods shall be used to model galloping ellipses.

1. A combination of the A.E. Davison method for single loop galloping and the L.W. Toye method for double loop galloping.
2. The CIGRE method per Bulletin 322.

When checked using these method galloping ellipses shall not overlap one another. Galloping clearances shall also be checked between the transmission conductors and shield wires.

The following load cases shall be used for galloping calculations:

1. 32°F, 0.5" Radial ice, 2 PSF wind (For determination of Swing Angle)
2. 32°F, 0.5" Radial ice, No Wind (For determination of sag and conductor motion ellipses)

Long spans over eighteen hundred (1800) feet shall take into account existing line historical operation. If no data is available a study shall be performed to determine the proper mitigation methods.

Further Discussion:

1. Clearance between the galloping ellipses.
 - a. Use a constant buffer for all voltages. 1ft?
 - b. Use a voltage dependent buffer.
 - i. 69kV - 6"
 - ii. 138kV - 12"
 - iii. 230kV - 18"
 - iv. 500kV - 42"