

Atmospheric Above Grade Inspection and Assessment of Corrosion on Steel Electrical Transmission, Distribution, and Substation Structures

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ABSTRACT

There are an estimated 90,000 electric utility steel transmission and distribution structures in North America alone. The majority of these structures were installed between 1950 and 1990. These structures are now an average of about 45 years of age. The age of these structures dictates an inspection and assessment procedure to determine the level of corrosion affecting the above-grade atmospherically exposed portions of this important segment of our infrastructure.

Prior to the publication of this standard, no industry practice existed to help electric utilities determine a prioritized listing of structures to be inspected or that described an inspection and assessment procedure to evaluate above-grade atmospheric corrosion problems.

This standard is intended for use by electric utility personnel, contractors, inspectors, and those interested in the impact of corrosion on the above-grade sections of transmission, distribution, and substation steel structures. It provides requirements to: (1) help utilities identify structures that may be at a high risk for above-grade corrosion; (2) inspect the selected structures; (3) categorize the condition of structures based on corrosion degradation; (4) prioritize structures requiring additional inspection based on those findings; and (5) help identify next steps as required.

This standard is limited to the inspection and assessment of steel transmission towers, poles, distribution poles, and substation structures, including galvanized and painted mild steel structures, as well as other similar structures.

KEYWORDS

Transmission and distribution structure, above-grade corrosion, atmospherically exposed, steel transmission tower, distribution pole, substation structure, field inspection, TG 529.

Foreword

There are an estimated 900,000 electric utility steel transmission and distribution structures in North America alone. The majority of these structures were installed between 1950 and 1990. These structures are now an average of about 45 years of age.

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