

# **Technology Review on Best Practices for a Risk-Based Approach to Vegetation management**

Aug. 2011

CEATI PROJECT No. TLAM PI10.01

## **ABSTRACT**

In order to arrive at best practices for risk based approach to vegetation management, a review of topics related to transmission vegetation management and a survey of 24 utility transmission vegetation managers was conducted. These utilities manage approximately 30 percent rights-of-way (ROW) in excess of 100kV in North America. Specific topics of interest included: ROW vegetation management, integrated vegetation management (IVM), remote sensing, light detection and ranging (LiDAR), risk management related to utility vegetation management, compliance with North American Electric Reliability Corporation FAC-003-1, utility vegetation management best management practices, new vegetation management technologies, ROW multiple-use management and improved operational management practices.

Several important emerging trends in managing the potential risk of vegetation-caused outages on transmission systems were identified. Among these were an increased use of LiDAR and associated technologies to identify potential risks, increased attention to hazard trees, and the implementation of IVM principles.

Several indicators of best management practices (BMP) relative to transmission vegetation management (TVM) emerged and have been presented. The importance of utilizing TVM BMP's has gradually increased over the periods reviewed.

## **Keywords:**

Transmission vegetation maintenance (TVM), Light Detection and Ranging (LiDAR), vegetation management (VM), risk assessment, Federal Energy Regulatory Corporation (FERC), North American Electric Reliability Corporation (NERC), ROW vegetation maintenance, integrated vegetation management (IVM), vegetation management, utility vegetation management (UVM), Geographic information system (GIS), and best management practices (BMP), Electric Power Research Institute (EPRI), Institute of Electric & Electronic Engineers (IEEE), American National Standards Institute (ANSI), Rights-of-Way (ROW), Wire Zone/border Zone (WZ/BZ).

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