

**Statement of Randall H. Miller
On behalf of PacifiCorp
And
The Edison Electric Institute**

**Before
The House Natural Resources Committee**

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My name is Randall H. Miller, and I am the Director of Vegetation Management for PacifiCorp, where I administer vegetation management on roughly 16,000 miles of transmission and 45,000 miles of overhead distribution lines throughout the Intermountain West and Pacific Northwest. I appreciate the opportunity to testify before this joint subcommittee hearing on behalf of PacifiCorp and the Edison Electric Institute (EEI).

PacifiCorp serves more than 1.7 million customers in six western states. It is a subsidiary of Berkshire Hathaway Energy, and does business as Pacific Power in California, Oregon and Washington, and as Rocky Mountain Power in Idaho, Utah and Wyoming. Environmental respect is a core value of Berkshire Hathaway Energy, a value that is emphasized from the top, and influences the entire organization, including activities of PacifiCorp's vegetation management department. As a utility that covers a wide geographic area of the western United States where there are substantial Federal land holdings, PacifiCorp has a good deal of interaction with Federal land managers. For example, PacifiCorp facilities cross 33 national forests, dozens of BLM jurisdictions, as well as at least seven national parks and two Federal wildlife refuges.

EEI is the premier trade association for U.S. shareholder-owned electric companies and serves international affiliates and industry associates worldwide. Our U.S. members serve 97 percent of the ultimate customers in the shareholder-owned segment of the industry and 71 percent of all electric utility customers in the nation.

In my written testimony, I will address two problems – the criticality of keeping trees from power lines, and the difficulties imposed by the decentralized decision making

structure of Federal agencies in keeping trees from power lines. In the course of my testimony, I will offer integrated vegetation management as an environmentally-sound, cost effective way of keeping trees from power lines, and suggest the forest service adopt a policy of utilizing integrated vegetation management on Federal lands throughout the country.

Electricity is the only commodity that is manufactured, transported, distributed, delivered and consumed in the same instant. Electrification was named by the National Academy of Engineers (2000) as the greatest engineering accomplishment of the 20th Century, ahead of automobiles, aviation, space travel computers and the other great innovations of the 1900s -- none of which would have been possible without abundant, safe, reliable electric power. Maintaining that abundant supply of safe, reliable electric power is crucial in ensuring America's national and cyber security as well as economy by ensuring smooth functioning of industry, commerce, government, and domestic life.

The system that makes it all possible is comprised in part of hundreds of thousands of miles of transmission lines that reticulate North America. These lines are divided into three interconnects – eastern, western and Texas. Interconnected lines allow transmission of electricity to areas of greatest need, which can shift due to weather conditions. The system is efficient insofar as it has reduced the need to build power plants that may only be needed occasionally to cover peak loads in particular localities. While interconnects are efficient, they have been vulnerable to failure in cases of widespread high demand associated with region-wide heat waves. Failures have occurred three times in the past 20 years, when heavily-loaded lines were knocked out of service after sagging into trees. Electricity from these lines was diverted to other lines, overloading and causing them to shut down, sending their lost capacity to other heavily loaded lines, knocking them out of service, eventually creating a series of cascading events that resulted in widespread blackouts. The most notorious of these three grid collapses occurred on August 14, 2003, where 50 million people in eastern North America were left without power, some for weeks.

The August 2003 blackout led to intense review by utilities, the Federal Energy Regulatory Commission (FERC), the North American Reliability Corporation (NERC) and others. For the utility industry, the most significant result has been development of a vegetation management standard by NERC approved by FERC. The standard mandates up to \$1 million a day penalty for utilities that allow trees to grow into transmission lines that are subject to the standard with the objective of preventing cascading blackouts caused by trees. The ramifications of the NERC vegetation management standard is that FERC has a zero-tolerance policy regarding vegetation contacts with power lines. The challenge for the utility industry is how best to comply with zero tolerance when they are confronted by hundreds of thousands of miles of lines that span a vast continent. Particularly when under and adjacent to these lines grow many millions of trees that could potentially grow into and interfere with electric facilities.

One way industry has responded is through development of national consensus standards through the American National Standards Institute. The *American National Standard for Tree Care Operations* (ANSI A300) was issued in nine parts by the green industry, including representatives from the USDA Forest Service and National Parks Service. The International Society of Arboriculture has also published best management practices to accompany the ANSI A300 series.

ANSI A300 part 7 (2012) adapts the principles of integrated pest management to a principle called integrated vegetation management (IVM). I wrote the accompanying IVM best management practices for the International Society of Arboriculture. In the case of integrated vegetation management, the “pest” populations are “incompatible” plants. Incompatible plants might be noxious weeds, invasive plant species or any vegetation that managers consider inappropriate for a given site. In a utility context, the inappropriate plants are often those that have the potential to interfere with or limit access to electric facilities at some point in their life.

ANSI A300 Part 7 defines IVM as a system of managing plant communities in which managers set objectives, identify compatible and incompatible vegetation, consider action

thresholds, and evaluate, select and implement the most appropriate control method or methods to achieve their established objectives. The choice of control method or methods is based on their environmental impact and anticipated effectiveness, given site characteristics, security, economics, current land use and other factors.

The ideal objective for the utility industry is to use IVM principles to establish plant communities comprised of species that will never interfere with the electric facilities (Miller 2014). A useful tool is a biological control known as cover-type conversion, which provides a competitive advantage to short-growing, early successional plants, allowing them to thrive and successfully compete against unwanted tree species for sunlight, essential elements and water. It often requires selective use of herbicides against incompatible species to enable desirable species to become established. The early successional plant community is relatively stable and tree-resistant. As this community becomes increasingly established, the need for intervention decreases. In the long run, industry considers this type of biological control to be the most appropriate method, at least where it can be done effectively.

The wire-border zone concept is an important management philosophy that can be used in many areas and applied through cover type conversion. W.C. Bramble and W.R. Byrnes developed it in the mid-1980s out of research begun in 1952 on a transmission right-of-way in the Pennsylvania State Game Lands 33 Research and Demonstration project (Yahner and Hutnick 2004).

The wire zone is the section of a utility transmission right-of-way under the wires and extending on both sides to a specified distance. The wire zone is managed to promote a low-growing plant community dominated by grasses, herbs and small shrubs (e.g. under three-feet at maturity). The border zone is the remainder of the right-of-way. It is managed to establish small trees and tall shrubs (e.g. under 25-feet in height at maturity). The concept may be modified to accommodate side slope and changes in topography. When properly managed, diverse, tree-resistant plant communities develop in wire and border zones. The communities not only protect the electric facility and reduce long-term

maintenance, but also enhance wildlife habitat, forest ecology and aesthetic values. It can't be applied everywhere. For example, in some fire-prone areas, the border zone may not be indicated, as it may contribute ladder fuels that could exacerbate the spread of wildfire. However, wherever it can be applied, it has proven useful in enhancing wildlife habitat and protecting electric facilities.

The benefit of IVM and cover type conversion is that it works with nature, rather than against it, decreasing costs and the utility's footprint over time. Furthermore, IVM can create opportunities to enhance the environment. For example, the EPA is actively supporting pollinator protection. The National Pollinator Protection Campaign, a collaboration of over 140 groups dedicated to promoting pollinators in North America, endorses integrated vegetation management on utility rights-of-way for expanding pollinator habitat comprised of meadow or prairie species. Those communities are consistent with industry's objectives as well, as the species that comprise meadows and prairies will never interfere with the use of the transmission lines. A central point is that rather than looking at transmission corridors as sacrifice areas, industry, government, private environmental groups and the public working together can use them as areas of opportunity to provide much needed habitat that may be otherwise threatened, while at the same time protecting the nations electric supply.

The utility industry considers integrated vegetation management to be a sustainable, cost effective and environmentally-sound approach to protect the critical electric grid. Federal agency management in Washington, DC has agreed insofar as they were signatories to the 2006 MOU with EEI Member utilities, which emphasized application of IVM principles. They have also participated in developing the *American National Standard for Tree Car Operations* (ANSI A300), including Part 7, IVM. Many local managers agree and consider IVM to be the best approach in maintaining electric utilities that cross Federal property. However, at least from industry's perspective, others seem to view electric rights-of-way as loss areas, and work to impede maintenance, including vegetation management.

The inconsistent viewpoints of Federal land managers creates difficulties for utilities because local authorities are empowered to make their own decisions for what is or is not appropriate in their jurisdictions. The arrangement creates unpredictable directives regarding what is or what is not authorized on utility corridors on Federal lands - in spite of land managers ostensibly working with the same policies and procedures. Many utilities express frustration that requirements can change dramatically at district boundaries, which are ecologically arbitrary. In other cases authorization changes substantially when one individual transfers or retires and is replaced with someone with different views. To provide an understanding of the degree of difficulty can create, recall that PacifiCorp's facilities cross 33 different national forests. Each national forest is divided into three or four districts, each with independent decision making authority. That means PacifiCorp foresters may have to work individually with well over 100 different governing authorities for the USDA Forest Service alone. Add to that a number of regions of the BLM, national parks and Federal wildlife refuges, all of which have ongoing personnel changes, and one can understand how working with federal agencies can be so problematic and time consuming.

Local decision makers who oppose utility vegetation management can delay timely authorization for required routine maintenance. They can add redundancy and repetition in reviews and work requirements and add delay without a corresponding benefit. At other times, they can deny permission to remove dead and dying trees or other vegetation that poses a threat to transmission facilities, which can create unnecessary risk. Living trees continue to grow towards the power lines and dying trees continue to threaten to fall o electric facilities regardless of a decision timeline, so the inability to carryout routine maintenance can lead to emergency situations. All of these factors can unnecessarily raise costs, expose the electric grid to outages, including catastrophic grid failure, and increase fire risk.

That is not to say these problems are universal. On the contrary, some districts understand the issues, and cooperate in the context responsible land management. Furthermore, there have been positive developments such as those sited by my colleague

Mike Neal, with the 2006 memorandum of understanding among EEI member utilities and Federal agencies, which is being renegotiated, and the desk top guide, which is helpful. Arizona Public Service and Xcel Energy have also reached memorandum's of understanding on a region basis in their respective service territories. PacifiCorp is working with the Intermountain Region of the Forest Service to reach a region-wide understanding on integrated vegetation management. These are all encouraging developments and indicate a willingness among many Federal land managers to serve the public's need for safe reliable electricity while maintaining sound stewardship over Federal land.

Yet, PacifiCorp and other utilities continue to encounter problems with local Federal decision makers. Cyber security, national security, industry, commerce and domestic life are dependent on flawless functioning of the electrical interconnects. That is why FERC has a zero tolerance policy for tree contacts on interconnected transmission lines. The benefits electricity provides are too important to be left to a patchwork of independent assessments made by individuals who may or may not have electric or vegetation management training and may or may not understand the ramifications of their judgment on the electrical system. Industry would like to see broader policy directives that not only take into consideration important environmental and land management issues, but also take into account the importance of the electric interconnect, the negative impact trees can have on it and the cost maintenance of the electric grid has to the public. Moreover, industry would like to see decisions based on research, rather than opinion, and from that perspective, that means leveraging proactive integrated vegetation management in creating plant communities that contribute to the environment without threatening the nation's electric supply. If protecting the electric grid is so important that the Federal government cannot tolerate contacts between trees and interconnected transmission lines, all facets of the government should work with industry to help meet that objective.

Thank you for holding this hearing. PacifiCorp and EEI look forward to working with you further on these important issues.

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