

# factsheet

July 2008

## Trees and power lines



This summer, BPA maintenance crews are inspecting and clearing high-growing vegetation from all 8,500-miles (15,000 circuit miles) of our transmission grid in 90 days, work that would normally take two-to-four years. This work was directed by the Western Electricity Coordinating Council after a cherry tree came into contact with a BPA line on June 28.

BPA wants to be a good neighbor and is emphasizing its commitment to respectful relationships with landowners, who are among the public the agency serves. Crews are observing all the normal protocols

with one exception. Because of the short 90-day inspection period, it has not always been possible to give advance notice to landowners. This fact sheet explains what the agency is doing and why this exercise is necessary.

### **Trees can cause blackouts**

Trees that grow too close to power lines can provide a path for electricity to arc to the ground, causing power outages and endangering public safety.



Because the power grid is interconnected, outages can in some cases black out power to millions of people. The 1996 West Coast power outage that affected 10 million people began when filbert trees and others grew too close to BPA transmission lines in western Oregon. The 2003 East Coast-Midwest blackout that affected 50 million people was triggered by trees that grew too close to transmission lines in Ohio.

Following that blackout, Congress passed legislation that led to creation of national mandatory reliability standards to prevent such hazards.

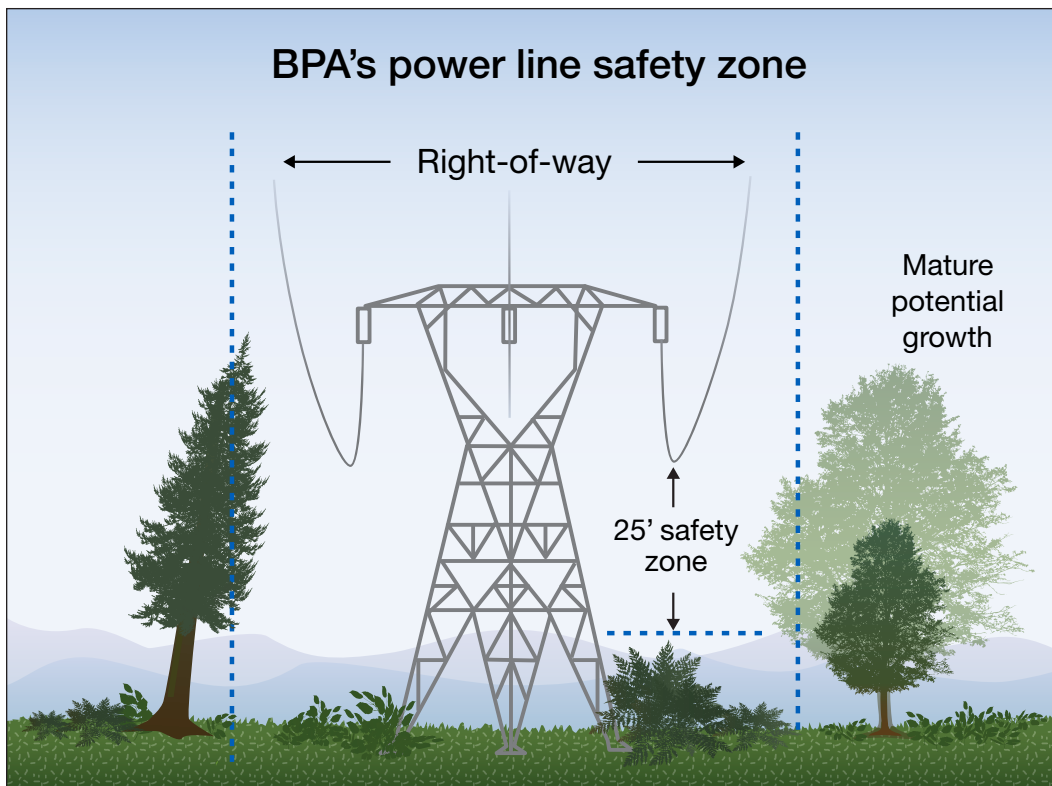
BPA's vegetation management standards meet this national requirement set by the North American Electric Reliability Corporation, which is monitored and enforced by Western Electricity Coordinating Council. The cherry tree that caused an outage on BPA's 230-kilovolt Big Eddy-Chemawa line exceeded the minimum safe-clearance distance set by these standards. WECC directed the 90-day inspection and maintenance now underway to make sure no similar hazards remain on BPA rights-of-way.

## The WECC directive

To meet the WECC directive, BPA helicopter and ground patrols are inspecting all BPA transmission rights-of-way to assure they are free of any vegetation that could encroach on the minimum clearance distances in BPA's vegetation management standards. These minimum distances are 10 feet for transmission lines of 230-kilovolts or less and 15 feet for lines greater than 230-kV. Any vegetation we find that could encroach on these minimum distances must be removed within 24 hours.

## Keeping the 25-foot safety zone clear

In addition to assuring that minimum clearance distances are met, BPA's vegetation management program includes another, more proactive standard. Each year, vegetation on and adjacent to a certain number of rights-of-way is removed by professional companies under contract with BPA. This routine treatment calls for maintaining a 25-foot safety zone



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of clear space around our transmission conductors to prevent tree-caused power outages.

When these crews maintain a right-of-way, they clear the 25-foot safety zone around all conductors. But that does not mean they simply cut any trees or brush that are less than 25 feet from the conductor on the day the maintenance is performed. BPA performs this vegetation management on each line on a three-to-10 year cycle, depending on topography, location and vegetation type. A conductor can sag up to 20 feet on a hot day, and certain tree species such as cottonwood, alder, birch and orchard trees can grow very quickly, especially in a wet spring. Therefore, keeping the safety zone clear requires answering two critical questions:

- How high could that tree grow?
- How low could that conductor sag?

Crews clear trees and brush that could grow within 25 feet of the lowest point the conductor could sag to on a hot day. If we find a 10-foot Douglas fir tree growing under the line, we remove it because the tree's mature height will eventually violate the 25-foot clearance limit. We may also remove or trim trees near the right-of-way that could fall onto the line.

## **Don't cut trees near power lines yourself**

BPA warns landowners along our rights-of-way not to cut trees on or near rights-of-way themselves. If a tree is already too close to a line, felling it might cause an arc, which could cause injury or death. If landowners believe vegetation on their property may be a hazard, we urge them to call our realty office at 1-800-836-6619.

## **The legalities of right-of-way maintenance**

Most BPA rights-of-way are on easements the agency has purchased from landowners, not on BPA-owned land. Easements are legal documents that define the

necessary land rights needed to build, operate and maintain BPA's transmission facilities, along with terms and conditions that apply to both BPA and the landowners. Landowners may use rights-of-way for activities that do not pose a safety hazard or interfere with the transmission system, such as growing grain or pasturing livestock. BPA crews may enter the rights-of-way and access roads at any time to inspect the rights-of-way, manage vegetation or maintain transmission equipment.

## **Changes over the last few years**

At one time, BPA worked with landowners to permit Christmas tree farms, orchards and other land uses involving small trees along and on rights-of-way. In some cases, BPA and landowners signed land-use agreements under which landowners committed to maintaining their property and trees at safe distances from the transmission lines using safe vegetation management procedures.

As national standards have been created and instituted, BPA has had to tighten its vegetation management policy. Under the new national standards, we rarely grant land-use agreements involving trees and are reworking existing agreements to resume direct agency control of right-of-way maintenance. This is because too many instances have occurred in which, through changes of land ownership or other circumstances, property has not been maintained as agreed, resulting in vegetation hazards. For example, this month, crews found a Christmas tree farm under a 500-kilovolt line with trees growing within the safety zone. And then there was the filbert orchard in 1996 that helped set off the West Coast blackout. It was owned by an absentee landowner.

It can be difficult for landowners who have lived along BPA rights-of-way for years to adjust to our new vegetation management standards. BPA is working to inform landowners of the new requirements and the reasons for them.

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## How we're notifying the public now

BPA's normally inspects and clears rights-of-way in a two-step process. First, transmission maintenance crews or aerial patrols inspect rights-of-way and note what they find. Next, natural resource specialists verify their findings and schedule contract crews to clear vegetation as needed. This process allows for landowner notification twice, before the resource specialist walks or drives a right-of-way and again before maintenance crews are scheduled to clear vegetation.

The WECC directive to inspect and maintain our entire grid within 90 days precludes the normal advance notice to landowners. BPA is providing a flyer to each property owner explaining this work and also sent a letter to customers and constituents throughout the region. Our customer and constituent

account executives have talked with the region's utilities, state utility commissions and other officials to make sure they understand what we're doing.

BPA's Web site at [www.bpa.gov](http://www.bpa.gov) has complete information on the 90-day inspection and clearance, plus general information on BPA's vegetation management standards and practices. The brochure "Keeping the way clear for safe, reliable service" may be particularly helpful. Anyone who has concerns may also call our realty office at (800) 836-6619 or e-mail [comment@bpa.gov](mailto:comment@bpa.gov).