

## VEGETATION MANAGEMENT Q&A

### **Why does ATC need to remove trees and vegetation near transmission lines?**

ATC operates more than 9,400 miles of transmission lines on tens of thousands of acres of rights-of-way. Incompatible vegetation such as trees and other woody or dense vegetation can interfere with the safe and reliable operation of ATC's high-voltage lines, and can limit access by crews who may need to conduct maintenance and repairs. Simply put, trees near power lines are a hazard to people, and represent a risk to the power lines and reliable electric service. During the construction of new power lines, it is necessary to clear the right-of-way to allow crews and equipment safe access to the area.

### **What are the risks if trees are allowed to remain in the easement?**

Trees and transmission lines are generally not compatible, especially when tall, fast-growing trees are planted under power lines or adjacent to them. Trees are capable of conducting electricity from nearby lines and represent a serious hazard to people, pets or other objects that get near enough to an "electrified" tree. Tall trees near a power line can be blown over in high winds, pulling the line down from supporting towers or poles, even while the line remains energized—thus creating a very dangerous, life-threatening situation for an unaware passerby. In addition, because a single transmission line serves thousands of homes and businesses, a line outage as a result of a fallen tree or branch can cause widespread outages and threaten the stability of the electric system network across an entire region.

### **Is ATC required to remove trees and vegetation?**

The Federal Energy Regulatory Commission (FERC) in 2006 approved standards that apply to transmission lines carrying 200,000 volts and higher. The purpose of the standard is to prevent transmission line outages and resulting blackouts due to vegetation contact, and reflect a zero-tolerance policy for tree-caused outages. The standard requires utilities that operate high-voltage transmission lines to establish a vegetation management program. ATC's vegetation management program applies to all its transmission lines, which range in voltage from 69- to 345-kilovolts.

At the state level, the Public Service Commission of Wisconsin requires ATC to remove trees and tree parts that may be potential power line hazards—and make a reasonable effort to trim and remove the hazard.

### **What lines are affected by ATC maintenance activities?**

ATC's vegetation management program applies to all of its transmission lines, at all voltages. Lower voltage distribution lines operated by local distribution companies are subject to the vegetation management practices of those utilities and are generally less strict than those of ATC and utilities that operate high-voltage transmission lines.

### **What is an easement?**

An easement is a permanent, land right acquired by a utility that grants certain rights and uses of land or property in the area defined by the easement. Utilities typically acquire easements rather than purchase property outright at the time a power line is constructed. Landowners retain ownership of their property—even as the property is sold and transferred to other owners, but its use within the easement area is restricted. The utility's rights related to the management of vegetation are typically spelled out in the easement. The term "right-of-way" is a common term used to describe the area within the easement.

### **Why is ATC removing trees that have been in the easement for years or even decades?**

It was not uncommon in the past for ATC (and our predecessor utilities) to deviate from fully enforcing the easement rights and allow certain trees and vegetation to remain, and/or use a practice of trimming and pruning, rather than removal, to provide adequate clearances between power lines and trees. This approach has repeatedly proved to be ineffective in preventing outages, arcing, and fire/shock hazards.

Industry practices for right-of-way management, including those of ATC, have changed in recent years as a result of several widespread outages including one in the northeast several years ago, which affected 50 million people in eight states and portions of Canada. Utilities that operate high-voltage transmission lines are required to establish and follow a vegetation management program that eliminates any and all threats to safety and reliability of their high-voltage transmission lines. ATC's program applies to all voltage levels. ATC's approach to maintaining rights-of-way is not unique to ATC; similar practices are used throughout the country.

### **Why does ATC use a five-year cycle instead of trimming more frequently?**

A five-year cycle is the most efficient approach to maintaining rights-of-way given the growth cycles, available resources and crews. The work that is done is intended to maintain the required clearance until the next scheduled maintenance cycle.

### **Why not trim tall trees to a height below the wires rather than remove them?**

Continually trimming trees that are close to a high-voltage transmission line is not as safe as removing them. Trimming trees near high-voltage, energized power lines is dangerous work that can be deadly. Several factors must be taken into account when trimming or removing vegetation:

- **Safety zone** – A significant amount of clearance is necessary to achieve a safe zone. A conservative interpretation of the Wisconsin State Electrical Code requires a minimum clearance of 10 to 15 feet between the line and anything else, based on line voltage.
- **Growth rate and trimming cycle** – We want to ensure the safety zone is maintained not only at the time we trim, but after we trim, too, until we return for the next trimming cycle. This is typically five to seven years.
- **Transmission line sag** – As power lines carry more electric load during periods of high usage, they heat up which causes the wire to sag. The combination of growth, the trimming cycle and maximum sag, means that removal, rather than trimming, of tall trees is the prudent action for maintaining the adequate safety zone.

### **Why are the clearances so large?**

Electricity travels on high-voltage power lines high above the ground. However, electricity, like water, seeks the most direct path to the ground through nearby objects. Just like lightning, electric current in a high-voltage power line may seek to reach the ground by jumping, or arcing, to a tall-growing tree. To avoid this, we maintain a safe distance between our power lines and tree limbs. The higher the voltage of the power line, the more clearance required.

Clearances between power lines and other objects, including trees, must allow for line sag and wind. During warm weather or when the line is carrying heavy electrical loads, it heats up and stretches. This makes the line longer and it sags closer to the ground or objects underneath it. Because the amount of sag varies with electrical load, weather and the type of wire, a safe clearance distance in winter may

not provide the same safety on the warmest summer days. To maintain a safe distance between the line and anything that can conduct electricity, we maintain a clear zone on all sides and below our power lines. Heavy winds can blow branches into power lines and additional weight from snow and ice can bend or break branches, bringing them close enough to cause a flashover.

### **Can I trim my own trees?**

Many property owners will offer to trim their trees on a regular basis as a way to avoid tree removal by our crews. Unfortunately, it is not possible for ATC to monitor the clearances and trimming activities throughout its service system. In addition, there are public safety concerns in allowing this type of approach to managing vegetation. Because of this danger, landowners are urged to contact us or their local utility before trimming or removing trees near any power line.

### **What is meant by wire zone/border zone management?**

The WZ/BZ practice is an exception sometimes used by ATC and recognized throughout the industry as a tool for managing vegetation. Low-growing, non-dense vegetation with a maximum height of 15 feet in some situations is not considered a threat to the transmission line if it is located in the border zone. The wire zone is generally cleared of all vegetation regardless of height. Easement rights in the vast majority of cases grant ATC the right to trim and remove all trees and vegetation in the easement.

### **Why don't ATC contractors clean up the debris after the work is completed?**

Technically, the property owner is also the "owner" of the tree logs and debris. While this may seem counter-intuitive to our work, according to the land rights granted in the easement, ATC has the right to remove the trees, but we don't have the right to take the wood with us when we're finished. Therefore, we don't routinely offer to remove it from the property, but will stack it for firewood. Under state law designed to prevent the spread of invasive species, ATC is required to abide by quarantine restrictions for certain trees and vegetation. These restrictions may require us to leave vegetation on site. Landowners should discuss this with the contractor who conducts the work.

### **What about herbicides?**

Herbicides are generally used only with landowner permission. Years of experience and study by the utility industry have demonstrated that one of the most efficient and effective ways to keep rights-of-way clear of unwanted trees and brush is through the careful and selective use of herbicides. Herbicides are often used following clearing and mowing to control re-growth of unwanted woody and invasive vegetation, and will not affect grasses and other non-woody species. In many cases, the vegetation removed from dense woody areas is not desirable native vegetation, but invasive woody plants like buckthorn and honeysuckle. These fast-growing plants not only hinder crew access to the transmission facilities, but choke out and compete with native grasses and plants for nutrients, sunlight and water. Eliminating invasive and unwanted woody vegetation in the corridor promotes the growth of native grasses, low-growing shrubs and other native ground cover that birds, deer and small animals prefer.

### **What types of vegetation are allowed in the easement?**

Many property owners plant gardens, flowers, grasses and low-growing vegetation within the border zone area of the easement. This type of vegetation may not pose problems for the property owner or our facilities. Under the terms of the easement, however, any and all vegetation (as well as structures, sheds, etc.) located within the right-of-way is at risk of removal should circumstances warrant it. Keep in mind that small, immature trees planted today can grow into problem trees in the future.

While still subject to removal under the terms of the easement, the following species of grasses and flowers are less likely to interfere with access for emergency or maintenance crews than shrubs or tall-growing vegetation:

**Perennial flowers:**

- Asters, *Aster species*
- Blazingstar, *Liatrix species*
- Bergamont, *Monarda fistulosa*
- Black Eyed Susan, *Rubeckia subtomentosa*
- Cardinal Flower, *Lobelia cardinalis*
- Columbine, *Aquilegia canadensis*
- Common Milkweed, *Asclepias syriaca*
- Compassplant, *Silphium laciniatum*
- Coneflower, Narrow-leaf Purple, *Encinacea angustifolia*
- Coneflower, Purple, *Encinacea purpurea*
- Coneflower, Yellow, *Ratibida pinnata*
- Coreopsis, Stiff, *Coreopsis palmata*
- Coreopsis, Tall, *Coreopsis tripteris*
- Cupplant, *Silphium perfoliatum*
- Goldenrods, *Solidago species*
- Great Solomon's Seal, *Polygonatum canaliculatum*
- Lavender Hyssop, *Agastacha foeniculum*
- Lupine, *Lupinus perennis*
- New Jersey Tea, *Ceanothus americanus*
- Purple Prairie clover, *Petalostemon purpureum*
- Prairie Dock, *Silphium terebinthinaceum*
- Sunflowers, *Helianthus species*

**Grasses**

- Big Bluestem, *Andropogon gerardi*
- Indiangrass, *Sorghastrum nutans*
- Little Bluestem, *Schizachyrium scoparium*
- Prairie Dropseed, *Sporobolus heterolepis*
- Sideoats Grama, *Bouteloua curtipendula*
- Switchgrass, *Panicum virgatum*
- Wild Rye, Canada, *Elymus canadensis*
- Wild Rye Virginia, *Elymus virginicus*