

Balancing FERC Compliance, Public Concern and Delivery of Safe, Reliable Power

By Darin Sloan, Portfolio Manager,
DuPont Land Management



Utilities face a difficult task when it comes to balancing the public's desire for uninterrupted power and landowners' tolerance for what it takes to deliver that service. On one hand, unmanaged vegetation in utility rights of way can cause power outages that disrupt people's lives. On the other hand, the same people who don't want to miss their favorite television program due to a power outage may protest when a crew applies herbicides or trims trees under power lines adjacent to their land.

Massive blackouts on the East Coast in 2003 vividly demonstrated what can happen when vegetation interferes with power lines. That sequence of events led the Federal Energy Regulatory Commission (FERC) to enforce stricter clearance guidelines with hefty fines – up to \$1 million per day – for vegetation-induced outages.

Many U.S. utility companies are responding to increased regulations with integrated vegetation management (IVM) programs, while trying to win support from their power line neighbors. The key to turning former critics into allies of an IVM plan is open communication about the many benefits IVM offers, including safe, reliable power transmission and enhanced natural habitats.

What is an IVM program?

IVM compiles the most appropriate vegetation control techniques for electric rights of way projects, according to the North American Electric Reliability Corporation (NERC), the organization designated by FERC to develop transmission reliability standards. NERC guidelines give land managers flexibility to implement a customized plan that includes the right mix of biological, chemical, mechanical, manual and cultural methods to meet the brush-control needs of each site.

Nelsen Money, president of NRM-VMS Inc., and past president of the Utility Arborist Association, has more than 37 years of utility vegetation management experience. He advises utilities that creating an IVM program helps minimize interruptions caused by vegetation while maintaining a harmonious relationship with the environment and surrounding land users. To create an effective IVM plan, he suggests these steps:

1. Set clear objectives around what you want to accomplish.
2. Identify compatible and incompatible vegetation, including any noxious or protected species.
3. Determine optimal timing for various control methods and how that varies by landowner, land rights, etc.
4. Develop criteria for evaluating and selecting appropriate control methods.
5. Make a plan for implementing control methods.
6. Determine how and when you'll evaluate results.
7. Record what you've done so you can adjust the program over time.

Keeping costs in check

A long-range IVM program considers not only the best approach for this season, but also what will fulfill the site's objectives for years to come. A well-designed IVM plan saves labor and reduces operating costs over the long term. Since vegetation management often represents a utility company's largest operations and maintenance cost, it makes sense to incorporate practices that promote self-sustaining habitats for less mowing and trimming and fewer herbicide treatments.

While mechanical-control-only programs provide immediate relief from overgrown vegetation, this approach may not be the best – or most efficient – long-term solution. For example, a program that includes continuous mowing tends to trigger sprouting and/or live stem regrowth, which must be mowed regularly to meet FERC standards. This ongoing expense stresses rights of way maintenance budgets.

A study that evaluated the efficiency of IVM practices was conducted recently by Richard Johnstone, also a past president of Utility Arborist Association and president of IVM Partners, Inc., a 501-C-3 non-profit corporation, and principal of VMES, LLC, an independent consultant who helps utility companies, conservation groups, and federal and tribal agencies develop IVM programs. He evaluated vegetation control methods on a power distribution right of way adjacent to a forest. According to Johnstone's calculations, the initial cutting and herbicide treatments cost the utility approximately \$300 per span, but after the initial cleanup that figure dropped to \$10 per span for selective touch-ups.

Money cites similar cost comparisons, estimating that a utility working to reclaim a right of way that's been uncontrolled for several decades might incur initial mechanical clearing costs of \$5,000 to \$8,000 per acre, depending on site conditions, varying labor costs, regulatory restrictions and other factors. When that program is followed the next year by selective herbicide retreatment of sprouts, the estimated application cost can drop to \$500 to \$800 per acre. Using a selective herbicide that allows low-growing shrubs and herbaceous plants to flourish will stymie new tree growth and encourage the site to become more self-sustaining. Subsequent spot treatments on the few brush or weed species that survive may not be needed for five or six years.

Restoring native plants, minimizing environmental concerns

Johnstone notes that an effective IVM program releases native prairie grasses, wildflowers and low-growing shrubs, which out compete taller-growing species. This approach can reduce labor, herbicide use and equipment costs, while enhancing habitat for pollinators, birds and other wildlife. Following the IVM program's management plan will help prevent the area from returning to overgrowth, which triggers more costly mechanical control measures.

He followed this approach when advising a natural gas company with 15- to 20-foot tall vegetation along a transmission pipeline right of way that crossed land managed by the U.S. Army Corp of Engineers. He initially mowed the area and let it sprout one year, then made

a follow-up herbicide application and a later touch-up application. The program controlled overgrown brush and allowed restoration of low-growing native vegetation that was visually appealing to the public, and met the natural resource management needs of the Corp.

By reducing necessary mowing, utilities decrease both maintenance costs and the environmental disturbance from heavy mowing equipment that fosters invasive weed spread. Ruts created by big machines also can lead to erosion problems. Worker safety is another concern when operating mowing and trimming equipment.

Selective brush and weed management

To help restore native vegetation, appropriate selective herbicides can target undesirable brush and weed species while allowing desirable vegetation to flourish. Eliminating invasive species that compete for water, sunlight and nutrients helps native plant populations return, providing valuable habitat for wildlife and pollinators and creating an aesthetically pleasing landscape.

By using non-federally restricted herbicides with low use rates, utilities gain multiple efficiencies. With non-restricted products, applicators have greater flexibility to treat where applications will be most beneficial. And low-use-rate products require less storage, hauling, measuring and mixing, which reduces the chance for error and allows applicators to prepare and apply tank mixes more quickly and confidently. Favorable environmental profiles also help support public acceptance.

Effective IVM programs also give managers more options when working with land managers. Because rights of way land crosses through nature preserves, ranches and other types of areas, Johnstone and Money advocate discussing land-use goals with landowners and working toward a mutually beneficial control plan. For example, Money says if the land manager works for an entity that promotes cavity nesting areas, a solution might be to use a herbicide application technique that kills trees in place, which allows them to remain standing after they're killed and provides nesting habitat for bird and animal species, or hunting perches for raptors.

Johnstone also incorporates wildlife habitat concerns into vegetation management plans when working with national wildlife refuges, and national forests and parks. His recommended practices include the selective use of herbicides that allow wildflowers, forbs and grasses to grow, while retaining shrubs for songbird nesting and food.

Communicate, communicate, communicate

To win support for IVM efforts, good communication is essential. That means educating internal and external audiences about what will happen, why it's happening and what the long-term environmental benefits will be. This exchange with stakeholders should start before work begins to preclude any initial problems or misunderstandings.

Money recommends clearly defining key messages that will be conveyed to audiences and delivering them directly and positively. Suggested messages:

- We are using IVM best management practices.
- Our goal is to create sustainable vegetation types of grasses and low-growing shrubs.
- We are using EPA-approved herbicides and professionally trained applicators.
- The vegetation will provide a diverse habitat for wildlife, plants and pollinators.
- Our program is designed to reduce visits to your property to maintain the right of way.

Johnstone also relates that IVM management reduces greenhouse gases and pollution from oils, fuels and hydraulic fluids that are inherent in mechanical mowing operations. At a time when the industry is trying to lower its carbon footprint, regular mowing practices become difficult to defend.

Implementing an IVM program offers a variety of benefits for adjacent landowners, the public and the utility. By communicating how the program ensures safe, reliable power distribution, as well as sustainability and enhanced environmental benefits, you'll win support for your efforts from concerned parties. Educated internal audiences will also respond positively when they learn how IVM techniques add greater efficiencies and economic benefits for the utility.

Reference Materials & Additional Information

A downloadable copy of the FAC-003-2 Technical Reference is available at www.nerc.com. Detailed information on developing and implementing an IVM program can be found in the American National Standards Institute (ANSI) *A300 Part 7: Tree, Shrub, and other Woody Plant Maintenance-Standard Practices (Integrated Vegetation Management a, Electric Utility Rights-of-Way)*, available at isa-arbor.com or tcia.org. Examples case studies of successful IVM programs are available at www.ivmpartners.org, and an IVM video produced by Virginia Tech can be viewed at www.vegmgmt.com.

ABOUT THE AUTHOR

Darin Sloan is a portfolio manager for DuPont Land Management, where he oversees development of new herbicide products designed for vegetation management professionals. He earned a B.S. degree in mechanical engineering from Mississippi State University and a M.S. degree in industrial administration from Purdue University.

ADVERTISERS INDEX

RSC#	COMPANY	WEB SITE	PAGE #
1	Bronto Skylift	www.bronto.fi	29
2	Dow Electrical & Telecommunications	www.dowinside.com	7
3	Efacec Advanced Control Systems	www.efacec-acs.com	BACK COVER
4	Electrical Safety Program Solutions Inc.	www.esps.ca	9
5	Enspira Solutions – A Black & Veatch Company	www.enspiria.com	14
6	Freewave Technologies	www.freewave.com	23
7	GarrettCom Inc.	www.garretcom.com	8
8	Hastings Fiberglass Products inc.	www.hfgp.com	INSIDE FRONT COVER
9	Inner-Tite Corp.	www.inner-tite.com	15
10	Mersen Canada	www.mersen.com	19
11	Milsoft Utility Solutions	milsoft.com/magazines/ee-td-magazine	3
12	Qualitrol	www.qualitrolcorp.com	FRONT COVER
13	Schneider Electric	www.schneider-electric.com	1-5
14	Smart Grid RoadShow	www.smartgridroadshow.com	INSIDE BACK COVER
15	Tallman Equipment Co	www.tallmanequipment.com	33