

# TECO Develops An Integrated Vegetation-Management Plan—Maintenance Costs Lowered

**Combination of mowing and herbicide applications provide cost-effective management.**

By James R. Andrews, Jr., Senior Supervisor, System Line Clearance, Tampa Electric Co.

**S**afety, efficiency and doing the job right on a fixed budget is a necessity for vegetation management at Tampa Electric Co. (TECO). That's what led us to develop what we call an integrated vegetation-management program. The program combines cost-effective mechanical control practices with an intensely managed herbicide application program to come up with a R/W maintenance plan. A \$504,000 cost savings to TECO's bottom line should result over a 4-yr period. After 3 yr, the plan initiated in 1987 is ahead of the projected schedule to meet its 1990 savings forecast.

## Maintenance Objectives

In vegetation maintenance we need a program that controls vegetation properly, while making the best use of time and money. By supplementing mowing with herbicide applications we can address both concerns. The primary objective is to minimize the biomass on transmission R/Ws which, in turn, reduces circuit outages due to fires. In addition, it allows vehicle access for maintenance and ensures compliance with local ordinances.

With 1150 mi of transmission lines and 2500 acres to maintain vegetation management is no small challenge to our staff. Combined with the sheer size of the task, Tampa, FL, has an extremely long growing season and a constantly increasing population. Therefore, we have a maintenance objective that puts the allocated resources to the test.

## Integration Process

Traditionally, a contracted mowing crew worked on the system 52 weeks per year. A second contractor mowed 3 months per year, and a TECO crew



*Fig. 1. The author developed an integrated vegetation-management plan that combines cost-effective mechanical practices with an intensely managed herbicide application program.*

mowed continuously on a set rotation. This procedure was both costly and time consuming. And, in some cases, annual grass and brush mowing were not sufficient to control heavy infestations of dogfennel, ragweed, sesbania and woody species.

We tried using 15-ft mowers and reduced costs by approximately 59% compared with using a conventional 6- or 7-ft mower. Still, it didn't provide a satisfactory answer because mechanical practices provided a very temporary solution to our rising maintenance costs.

## Herbicide Management

We began herbicide use in experimental applications and test plots as a transition to our current program. In

1987, we were ready to begin integrating mowing with an intensively managed herbicide application program to achieve longer-term vegetation control.

After analyzing costs, as well as the overall scope of the work, we determined the best option for implementing herbicide use was to hire a certified, custom applicator who had the specialized equipment and training needed for the task.

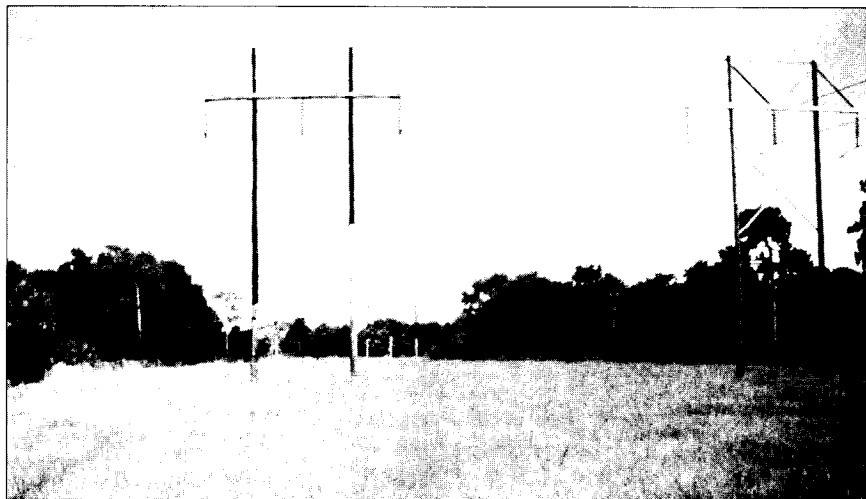
On mowable R/Ws, the application equipment consists of a modified, light-weight log skidder capable of treating up to 52 ft per pass. According to the recommendations of our staff, the applicator and the manufacturer, we treat dogfennel, ragweed and other undesirable vegetation with Du Pont "Velpar" L and Banvel 720. These herbicides provide nearly 100% control of undesirable vegetation and release growth of bahiagrass and bermudagrass.

In commercial and residential areas, herbicide treatment with Du Pont "Oust" and "Velpar" L is used following mowing to control weeds and regulate bahiagrass growth. We have used a similar integrated approach to deal with vegetation control in areas adjacent to power plants. And, in non-mowable areas, herbicides alone are used following initial handcutting to help maintain portions of R/Ws.

## Program Results

Following three consecutive yr of annual herbicide applications on TECO R/Ws, undesirable herbaceous vegetation and brush should be controlled to the point that herbicide application then can be reduced to treatment every 2 yr.

Another advantage we find with this



**Fig. 2.** Herbicide applications integrated with mechanical practices allows TECO to achieve nearly 100% control of undesirable vegetation on transmission R/W. Bahiagrass and bermudagrass provide ground cover.

program is that when a R/W is in good shape and grasses are released, cattle can graze the areas to help with vegetation management. The result is extremely low maintenance costs. TECO now actively pursues grazing leases on its fee-owned properties to reduce maintenance costs and to use Florida's Greenbelt Law, which lowers the tax base of agricultural properties.

#### Public Acceptance

Public opinion represents a crucial measure of success for an integrated program. A professional approach to herbicide application can ensure that public safety and environmental concerns are addressed. It also minimizes the potential liability factor for the utility.

By contracting a certified custom applicator to handle herbicide treatment we rely on professional expertise which combines a knowledge of herbicides with a knowledge of utility needs, up-to-date knowledge of available products ensures that the appropriate materials are used on each R/W. Certified professionals must also know precautions in preparing an area for herbicide application and how to use various techniques to avoid objectionable odors and spray drift. Working with the utility, the professional contractor surveys terrain, vegetation conditions and adjacent properties to determine these needs.

Occasional questions do arise from our customers about the work being done or the environmental safety of herbicide use. We answer inquiries

promptly, with the toxicology data and safety guidelines we follow in our vegetation control program. Customers appreciate this approach and respond favorably to our progress.

#### The Payoff

Exact cost data kept on a 16-acre TECO project through a residential area shows that integrated use of mechanical and chemical methods controlled vegetation with one mowing and two herbicide applications per year. This schedule compares with five mowings required without herbicides. The result is a savings equal to approximately two mowings, or \$1600 on 16 acres.

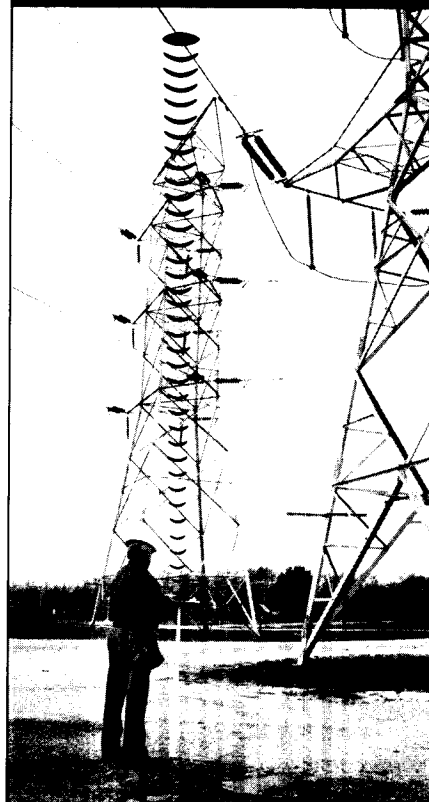
Overall, TECO expects the integrated program to return even more than the \$504,000 savings originally forecast. As the program progresses into a combination of mowing and herbicide application throughout the entire TECO system, a 2-yr herbicide application rotation will begin in 1990 on many R/Ws. Non-mowable areas will be treated, as needed, every 2-3 yr.

Significant savings for the TECO transmission maintenance budget will result, while we continue to meet safety and accessibility requirements and comply with local ordinances. **T&D**

#### The Author

*James R. Andrews, Jr., received the Bachelor of Science degree in Forest Science from the Pennsylvania State University in 1981. He joined Tampa Electric Co. in 1985 as Supervisor of R/W Maintenance and was promoted to Senior Supervisor of System Line Clearance in January 1990.*

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