

How Georgia Power Developed *Systemwide Brush Control*

By

GILL K. BROWN

Right-of-Way Specialist
Georgia Power Company
Atlanta, Georgia

POWER transmission lines of the Georgia Power Company stretch some 9,200 miles from the large swamps of southern Georgia to the rough, inaccessible mountain terrain of the north. Rights-of-way for this system cover more than 111,500 acres, of which 75,000 are brush. Our task in 1963 was to develop a systematic brush control pro-

gram for the entire system, which services 57,000 of Georgia's 59,000 square miles.

Seven Divisions; Seven Methods

Prior to 1963 rights-of-way reclearing was handled in seven different ways by the seven divisions that make up our company. Though effective and low-cost

work was being done by two divisions, others were engaged in expensive, and at the same time unsatisfactory, reclearing programs. This generally unplanned and uncoordinated effort cost more and achieved less than needed.

Some divisions were doing a great deal of "spot cutting" and were clearing less than the full width to make reclearing dollars go a little further. In addition, there was little exchange of information between divisions, and frequent changes of personnel involved in the work. A practice or contractor found unsatisfactory in one division would often be employed by another. Though there were more than enough contractors available for the work, some were performing under conditions that provided little competitive incentive and, as a result, were not producing as much as they might. On the other hand, contractors doing an excellent job in one area had difficulty establishing themselves in others.

Taking the cue from its successful Columbus and Valdosta Divisions, the company began, in 1963, to evolve a right-of-way maintenance plan for the entire system, division by division. The program, aimed at both reasonable cost and accessible, trouble-free rights-of-way, was to be put into effect as soon as possible,



Two views of Georgia Power's brush control. Bird's-eye view (top left) was taken from contractor's whirlybird preparing to spray right-of-way. Hand clearing (bottom) has been greatly reduced under the new program.

with the approval and support of the seven divisions.

At the outset, the company studied its brush control methods, its terrain problems, and the people involved in the work. Then, using the techniques that had been successful, and trying those that other companies were using, the continuing process of trial, evaluation, and implementation began. Initially, the Georgia Power Company found that its hand-cutting costs were high and getting higher. In 1962, nearly one-half of the acreage cleared had been done by hand. We also found that mechanical clearing costs varied considerably, and that chemical work (a small portion of 1962 clearing) had run the gamut from very good to very poor.

First Step: Complete Clearing

To bring its rights-of-way into proper condition for low-cost maintenance, the first step was to clear them to their full width and then keep them clear. To keep rights-of-way under control from the time they are first cleared, the divisions have worked closely with the construction department to secure rights-of-way initially cleared, and to contract for a thorough stump spraying so that areas are accessible to maintenance vehicles.

At the first reclearing of existing rights-of-way, high brush and stumps were cut low enough to permit access by maintenance crews. Next a program of short cycle mechanical clearing was selected for locations where terrain and growth make mechanical clearing costs low. This is generally true of the coastal plain and piedmont sections of Georgia, which are characterized by gently rolling to flat terrain.

However, there are maintenance obstacles that rank with the precipitous slopes of the northern mountains. No equipment available will penetrate the extensive swamps of southern Georgia and do a satisfactory clearing job at low cost. Hand labor, used in the past for swamp clearing, is still more expensive.

Unless they are small and ad-

Helicopters are now widely used to clear brush in hard-to-reach areas. Unthickened 2,4,5-T does the job on mountain sides.



Contractor applies Tordon to right-of-way. This year, 1,600 acres are being chemically treated from the ground. All work is contracted.



Rubber-tired tractors with 5-ft. rotary mowers clear upland areas. Low cost results from mechanical clearing on a 3-year cycle.



Heavy tractor goes in to eliminate thick brush in low-lying area. Over half of Georgia Power's clearing is performed mechanically.





Author, G. K. Brown, surveys right-of-way through Georgia swamp. Helicopters have increased effectiveness of swamp brush control.

adjacent to susceptible crops, the swamps are ideally suited to helicopter applications of herbicides. Using this technique, the Georgia Power Company is able to kill or control most growth satisfactorily, and at reasonable cost. The one species difficult to control in this coastal area is cypress.

Upland areas are cleared on a three-year cycle by rubber-tired tractors equipped with 5-ft. rotary mowers. This, coupled with helicopter spraying of the swamps initially when the brush is in its second year of growth and thereafter at about three-year intervals, gives us the lowest cost per acre each year for acceptable maintenance.

Helicopter spraying is also extensively used on rights-of-way in the northern part of the state, where it has proved effective for controlling brush in inaccessible mountain regions. This spraying is done with 2,4,5-T, used primarily at rates of 6 lbs. in 9 gals. total volume, and 8 lbs. in 12 gals. volume. This is applied as a "conventional," unthickened mixture, which the company has used quite successfully in recent years.

The rate to be used is determined by species, density, and height of the brush to be treated. Most has been applied at 6 lbs. per acre for hardwood control. Pine is still cut by hand. Through close cooperation of management and the divisions, helicopter spraying is contracted for on a systemwide basis.

In addition to its brush control program, Georgia Power also has an active, systemwide weed control program, directed by the

company's general office. For the past two years, a 4% bromacil compound has been used at 400 lbs. per acre to remove established perennial grasses and weeds. This year, an 8% diuron compound is being applied at the same rate per acre to maintain weed-free conditions. The herbicide is used in a dry, granular form, applied with a cyclone spreader or similar device. It is nontoxic to animal life and no special handling or application techniques are necessary.

All Reclearing Done By Contract Crews

A standard master contract setting forth insurance requirements and work specifications has been developed by Georgia Power so that the 15 contractors, who do all of the reclearing work, are subject to the same provisions. This contract is kept current by the purchasing department; a work order to the contractor is all that is necessary to initiate a job. Contractors are no longer widely employed on a cost-plus basis. Most mechanical clearing is now bid, a procedure that has not resulted in a lowering of standards, but has produced lower costs and a much more competitive environment.

Supervision of this work is the responsibility of division transmission engineers in five of the company's seven divisions. In the other two, clearing supervisors are now in charge of all work related to line clearing.

This expanded program of correcting rights-of-way in an unsatisfactory condition, and at the same time maintaining the others

already under control, required a greater initial budget allocation. Before making the money available, management required detailed information on the changes planned, wasteful practices eliminated, and costs involved. Divisions now submit their budget requests on a line by line basis, including the number of brush acres, the desired treatment, and the estimated cost for each. These requests are reviewed by the general office and the total request is then submitted for approval.

This approach provides management with the backup data necessary for the expenditure of additional funds. When money is allocated for the proposed work, divisions can then contract for its execution. The result of the changes is a companywide program, supervised by the divisions and the general office working together.

Program Costs And Results

The cost during the period of overcoming past maintenance conditions will not exceed \$81 per structure mile. This will be substantially reduced after our 1966 reclearing program is completed. The 1966 program is designed to bring some 26,000 acres up to good maintenance standards. As part of this extensive reclearing job, 16,000 acres are being mechanically cleared; 8,000 acres are receiving helicopter spraying; 1,600 acres are being chemically treated by other means; and only 400 acres are being cleared by hand.

Compare this with the 1962 clearing program, in which over 7,400 acres were cleared by hand; 7,000 acres were mechanically cleared; and only 700 acres were chemically treated. Rights-of-way were then being treated on a four- to five-year, or longer, cycle.

When the 1966 program is complete, brush will be cleared mechanically on a three-year cycle, and spraying will be done on two and three year-old brush. Costs per acre will be below those of 10 years ago, and Georgia Power rights-of-way will be in much better condition.