

INITIAL SELECTIVE CLEARING FOR TRANSMISSION LINES¹

by William J. Neidig

Many publications have been written conveying most aspects of the environmental impact of Electric Transmission Systems. The right-of-way clearing aspect probably has been talked about most because the environmentally aroused public is more knowledgeable on this aspect than the rest.

By nature our society is not one of wait but one of haste. Haste in restrictions of what can be done in clearing a right-of-way may become an unlivable waste. The electric industry has acknowledged the public's concern for the environment by changing their policy for right-of-way clearing. However, no less important is the general public's duty to acknowledge that the principal function of the electric industry is to supply energy at as reasonable a cost where and when it is required. Twenty years ago the announcement of a new transmission line was a symbol of prosperity. Today the announcement of a new transmission line is considered an encroachment on the environment.

There are approximately 3600 electric utilities in the United States. These utilities operate over 300,000 miles of overhead electric transmission lines which occupy four million acres of land for right-of-way. With the demand for electric power doubling every ten years, it is estimated that approximately 100,000 miles of new transmission lines will be constructed on 1½ million acres of right-of-way each decade for the balance of this century. These projections become even more significant when viewed as but a part of the total right-of-way requirements for highways, railroads, pipelines, and other utilities.

An easy answer to the problem would be to say do not expand the facilities. If this were done, the electricity that is required to prepare dinner would not be cut off in the middle of the afternoon but at dinner time. The electricity needed to operate an air conditioner would not be cut off on a cool day

but on a hot day. The electricity that is used for lighting would not be cut off in the daylight hours but in the hours of darkness.

We have come to accept electricity as a must in our way of life. We may ask ourselves . . . is there an alternate way to supply this amount of energy with less impact on the environment.

I am told that a 500 KV Line having a capability of 3000 megawatts, is comparable in energy to 350 seventy ton railroad cars of coal per day, which is 2450 cars per week, or 25 trains of 100 cars each per week. Comparing this source of energy to electric energy, we must conclude to date that a well designed high voltage line is the most economical, reliable and effective method to deliver large quantities of energy to the point of use. We would not want to turn the calendar back and obtain our energy from sources we did fifty years ago. *Imagine the pollution problem we would have if every household would use coal and kerosene instead of electricity for energy.*

New technical developments may permit undergrounding of transmission lines. But for now, at a time when planning and construction must proceed without tomorrow's technology, there is a need to take a new look at what can be done as to protect the natural environment and to preserve the aesthetics of the countryside.

Environmental consideration must be placed in proper perspective with other vital issues, such as reliability, cost and safety. The electric industry is concerned with the environment and has demonstrated a willingness to incorporate environmental considerations into its plans. It appears that the criterion for environment is greater than the one for reliability. This is unfortunate because we are still going to judge a Utility Company by reliability.

There are some basic methods that can be used nationwide as far as clearing rights-of-way are

¹Presented at the annual conference of the International Society of Arboriculture in Toronto, Ontario, Canada in August of 1978.

concerned that can make transmission lines more compatible with the environment.

Selection of the route.

- a. Locate away from scenic areas.
- b. Crossing of main roads at intersection should be avoided.
- c. Avoid steep slopes.
- d. Long views of the line from traveled highways should be avoided.
- e. Conceal the line as much as possible by timberlands.
- f. Avoid wet lands that are used by water fowl.

Clearing of the right-of-way.

The accepted cleared right-of-way for the purpose of constructing an electric transmission line today is a radical change from what it was five years ago. In order to have a right-of-way accepted by the public and have a balance of economics and results, we must coordinate the planning and clearing with the various agencies concerned about the environmental, conservation and sedimentation effects that the project would have.

If there were a standard method that would apply to all sections of the United States and to the entire length of any specific right-of-way, this would be a relatively easy procedure to coordinate with these requirements, but this is not the case. It is my hope that some general method can be adopted in the coming years. There are some

general practices that can apply nationwide.

- a. Road screens. The growth at road crossings should be left intact at the time of right-of-way clearing. Remove only what is absolutely necessary after construction.
- b. Access road from highway clearing. A diagonal strip should be cleared instead of a straight strip.
- c. Leave screen at edge of woods if adjacent to cultivated fields.
- d. Leave screens at river crossings.

In all these areas, the conductor clearance from trees should be ample for reliability of the line.

Public opinion varies in different parts of the country, but generally it is the same in a comparable area nationwide. The reaction to the environmentally aroused public is where we find a big difference. The reaction that one takes should not be on a personal basis but the entire environmental balance should be considered.

It is my hope that those of you who are responsible for the protection of the environment and those of you who have the responsibility of preparing specifications for right-of-way clearing, have a meeting of the minds as to the policy to follow. I am sure that if specifications have some similarity, a better job can be done.

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ABSTRACT

Clark, R.N. 1976. **Control of vandalism in recreation areas—fact, fiction or folklore?** USDA Forest Service Tech. Report PSW-17.

The purpose of this paper is to provide an overview of the state-of-the-art of knowledge of vandalism in recreation areas and how it can be controlled. Selected literature on this topic is evaluated for practical implications, and procedures for controlling vandalism in recreation areas are described. Prevention programs should focus on the various social, political, and physical-environmental factors to reduce vandalistic behavior and increase antivandalistic behavior. We know little about how all the possible controlling factors interact, and research is necessary to identify the important factors and evaluate their relative advantages and disadvantages in a variety of conditions. The vandalism problem should not be considered separately from other depreciative behaviors such as nuisance behavior, rule violation, and littering. The causes for and solutions to these other problems may hold important clues for reducing vandalism.