

CHAPTER 4

ENVIRONMENTAL EFFECTS OF TRANSMISSION LINE RIGHT-OF-WAY MAINTENANCE AND POST-CONSTRUCTION IMPACTS

Maintenance of the proposed transmission line will consist of preventative and corrective measures. Trees along the proposed route will require only periodic trimming. Regular ground and/or aerial surveys will assess the need of other preventive measures. Sound management practices on the right-of-way will be employed to insure environmental protection.

Corrective maintenance cannot be projected, though when necessary, repairs will be completed quickly to restore the use of the transmission line.

4.1 MAINTENANCE TECHNIQUES

Florida Power has established that the most effective method of reclearing right-of-way is through use of "bush-hog" mowers: i.e., light weight wheel tractors with rotary mowers. A three-to-four-year mowing cycle results in a stable community in the right-of-way because the colonization, and subsequent clearing of woody vegetation and its associated wildlife, is minimized. Only state and Federal agency approved chemicals will be used and then only applied locally to accelerate stump rot at the base of structures and guys, etc.

Routine line patrols will be scheduled, usually prior to the summer and winter peak loads, then conducted in light vehicles or aircraft along the entire length of the line. Following this patrol, maintenance crews are assigned specific instructions that include location, description of faulty or damaged materials, etc. Entry to the right-of-way is from major highways and established access roads, where possible.

4.2 MULTIPLE USES

Normal right-of-way restrictions will be applicable; i.e., no buildings, structures or obstacles (other than grounded fences) will be permitted within the easement area. FPC does intend to design the line to allow continued use of the existing citrus groves and row crops. In addi-

tion, managers of the Withlacoochee State Forest have expressed an interest in, and FPC will permit, planting of food plots for wildlife within and/or bordering the forest. FPC maintains a "Right-of-Way Utilization Committee" that will consider future special uses. This Committee has the responsibility of assuring that the applicant's planned usage is compatible with safe line operation and maintenance.

4.3 SURFACE WATER

Right-of-way maintenance will have no adverse impacts on hydrologic or water quality characteristics of surface waters. No diversions, interceptions, or additions to surface water drainage or flow will be required as part of routine maintenance. Wholesale use of herbicides will not be employed to control right-of-way vegetation (see Section 4.1).

4.4 AIR QUALITY IMPACTS

There will be no deterioration of ambient air quality as a result of right-of-way maintenance procedures. If burning of cleared vegetation is required, it will be in accordance with Chapter 17-5, FAC.

4.5 EFFECTS OF PUBLIC ACCESS

Given the number of public roads in and crossing the proposed corridor, and the parallel alignment to SR 471, no new access roads will likely be required for maintenance and emergency repair vehicles along the proposed right-of-way. However, construction of the proposed project will increase the accessibility of some remote areas to the public. Adverse impacts from increased public access will be species – specific to threatened and endangered plants (if they occur). Some vegetation may be lost as a result of excessive public access. However, in terms of regional populations, this impact will be minimal. Birds will be the least affected by the vehicles; however, ground nesting birds such as the bobwhite or wild turkey will be vulnerable during the breeding and fledging season. Large mammals will generally be able to relocate due to their high mobility. Reptiles and amphibians (herptiles) and small mammals which have restricted mobility may be impacted the most. Slow moving individuals such as the gopher tortoise or eastern indigo snake may be lost due to off-road vehicle (ORV) traffic. This may be especially true during the breeding seasons when amphibians such as the gopher frog or striped newt migrate to wetlands to reproduce.

The increased accessibility of remote areas will increase the hunting pressure during certain times of the year. This obviously will increase the chances of the hunter — target species interaction. Such species as the gray squirrel, bobwhite, wild turkey, rabbit and the white-tailed deer would experience a higher mortality rate. Additionally, increased human disturbance during breeding seasons may disturb certain species of wildlife causing breeding failures or nest abandonment.

These impacts have the potential of occurring along any portion of the right-of-way. However, areas most likely to realize these impacts would be in those in the state forest where pre-construction access was limited.

In areas where the right-of-way is not crossing or paralleling the Withlacoochee State Forest, the adjacent lands will, for the most part, be in agricultural production, and the right-of-way will have been fenced by the property owner. Gates installed during construction at road crossings or the road right-of-way boundary will be kept locked. Where practical and permissible, existing vegetation will be used to control vehicular access to the right-of-way when it crosses public lands.

4.6 CHANGES IN SPECIES POPULATIONS

Maintenance of the right-of-way will involve removal of nuisance vegetation, removal of danger limbs and trees, and upkeep upon the right-of-way. Removal of nuisance vegetation will involve the removal of trees that will interfere with the operation or maintenance of the line. The primary method of reclearing will be mowing with a conventional mower or bush-hogs. Hand removal of danger trees by chain saw will also be employed.

As mentioned in Section 3.5, some rare plants will benefit by removing the canopy and maintenance procedures will provide, for the life of the line, suitable habitat for those rare plants which exist in open areas. For example, Curtis (1946) reported that mowing improved habitat for a rare orchid by removing shrub competition. If any rare plants that thrive in open areas, such as *Drosera intermedia* (Water sundew), are within the right-of-way, maintenance techniques should not disrupt their growth and in some cases, could be a direct benefit to them.

The construction/maintenance road in the right-of-way will be located to avoid all cypress domes, streams, rivers, and other wetlands. When the right-of-way intersects a wetland, the contractor will attempt to obtain an easement to cross adjacent properties to avoid the wetland. When this process cannot be implemented, the contractor will use the local road system to move equipment. At river and large stream crossings, maintenance equipment will use the local system of roads and bridges to keep equipment out of the stream beds, where practicable.

Regarding post-construction impacts, major concern with many state and federal agencies is bird mortalities from collisions with transmission conductors, shield wires, and guy wires. Some collisions are unavoidable, especially during periods of restricted vision (i.e., inclement weather or at night). For the majority of bird species, these losses would present no measureable change in their population densities.

As pointed out in Section 2.2.8, the proposed corridor passes within one mile of Little Gator Creek rookery, a large wood stork rookery located in Section 24 (T. 25 S., R. 22 E.). Thompson (1978) feels that tower design and the use of guy wires may increase the potential of bird strikes. He points out that (1) the shield wires should be equal to but not exceed the adjacent tree height, (2) self-supporting structures should be used in some instances to eliminate guy wires, and (3) conductor bundles should be a horizontal rather than a stacked or deltoid configuration. Several investigators have found dead wading birds after apparent wire strikes (Weir, 1976; and Walkinshaw, 1956), while a Delmarva Power study (Wiese, 1979) reported no collisions with a 500 kV river crossing.

Therefore, FPC proposes the following mitigative measures. Before the centerline is finalized, a study will be conducted in the area of the Little Gator Creek rookery to establish communication flyways and flying characteristics of the wood stork and other wading birds in the rookery. Lower structures will assist in locating the shield wires at the approximate height of the adjacent treeline. For a majority of the span length, the line will be shielded by trees. In addition, a horizontal arrangement of conductors will always be employed. Spacing of conductors and shield wires will be such that electrocutions will be extremely unlikely with even the largest bird species.

4.7 ARCHEOLOGICAL AND HISTORIC SITES

In the event that an archeological and/or historic site is discovered in the right-of-way, FPC will consult with the Florida Department of State, Division of Archives, History and Records Management as to mutually acceptable maintenance procedures in and around the site. This can only be accomplished after a final right-of-way is delineated and secured by Florida Power Corporation, and then, only if the detailed ground survey (see Section 3.8) discovers unknown historic or prehistoric sites.

4.8 OTHER POST-CONSTRUCTION IMPACTS

The electrical environmental effects of the line are based on a theoretical analysis of the single circuit 500 kV transmission line configuration described in Section 1.3.

4.8.1 Ozone Production

Field measurements, laboratory studies and analytical predictions show that 500 kV lines do not generate ozone levels which are measurably above the ambient levels. The design used for this project will be more conservative than many existing 500 kV lines. Therefore, it is concluded that the subject line will produce no significant level of ozone. Any ozone produced will have levels significantly below the maximum recommended by the Environmental Protection Agency (i.e., 0.08 parts per million).

4.8.2 Audible Noise

Audible noise levels calculated for the proposed line show that audible noise levels produced by the line will be very low. During fair weather the line will probably be inaudible.

4.8.3 Broadcast and Citizen Band (CB) Radio Interference

No significant interference to AM broadcast radio reception during fair weather is expected beyond the right-of-way. No interference to FM broadcast radio reception by the proposed transmission line is expected at any time.

Assuming typical CB signal strengths, it is estimated that good CB communications can be obtained outside the transmission line right-of-way during fair weather conditions. During thunderstorm activity, atmospheric static will mask radio interference from the proposed transmission line.

4.8.4 Television Interference

The audio portion of a TV signal is a FM radio system which is not subject to static types of interference. No TV reception problems are expected to result from the proposed line.

4.8.5 Electric and Magnetic Field Strengths

Electric field strengths calculated for the proposed line are typical of conservatively designed 500 kV lines. The calculated magnetic field strength for this transmission line is between 10 and 100 times smaller than magnetic fields from common household tools and appliances. No harmful effects from exposure to electric and magnetic fields of a level produced by this transmission line are expected.

4.8.6 Induced Currents

The proposed line will satisfy the National Electrical Safety Code (NESC) criteria for maximum induced currents of 5.0 milliamperes for the largest vehicle expected under the line. No shock hazard due to induced currents from vehicles will result. Florida Power Corporation will ground existing metallic fences inside or crossing the right-of-way as an additional precaution against the possibility of induced currents.