

Southwestern Ontario Transmission: Designing A Route Selection Planning Program

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Summary

In the summer of 1982, Ontario Hydro began a route selection program for the planning of major new 500-kV transmission facilities in southwestern Ontario. The objective of the program was to establish a planning framework to assess environmental, technical, cost, and social issues in the location of over 480 km of 500-kV transmission lines and a transformer site. It also had to integrate public involvement with a variety of interest groups, government agencies, and affected landowners. It was essential that the program produce technically sound, accurate, and defensible conclusions as the study had to undergo major environmental approval hearings. The planning studies took 3 years to complete and produced a five-volume *Environmental Assessment*. The program ran well and was very successful in meeting its objectives. After 131 days of hearings lasting over a year, Ontario Hydro received approval to proceed with a modified but acceptable version of the undertaking.

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Introduction

In June 1982, Ontario Hydro received approval of a program for the expansion of its 500-kV transmission network in southwestern Ontario.

This "Plan Stage" approval was the first of two required under a two-stage planning and approval process undertaken by Ontario Hydro. It was comprised of three parts: a System Plan, which specified the terminal points and the type of transmission facilities to be used; a route stage study area, within which the specific locations for the required transmission facilities would be determined; and a general outline of the study activities leading to an application for the second or "Route Stage" approval.

The scope of the route stage study required the location of over 480 km (300 mi) of 500-kV transmission line through some of the most scenic countryside and rich natural environments in Ontario. It also required crossing some of the most productive agricultural land in Canada and affecting many rural communities with environmentally aware and active residents. As one of the largest and most complex studies of its type ever undertaken by Hydro, the Southwestern Ontario Study represented a formidable planning challenge.

As a result, a great deal of planning and preparation went into the design of the route stage planning program. This paper will examine some of the main aspects of the program design for the Southwestern Ontario Study. It will discuss the program objectives and some of the methods and

techniques used to achieve them. The effectiveness of the program will be assessed based on the results of the study and some observations made on what it takes to get approval of major utility rights of way in today's regulatory and social environments.

Background

In the early 1970s, Ontario Hydro began planning for two 2-cct 500-kV transmission lines to incorporate the power from its Bruce Nuclear Power Development under construction on Lake Huron. In 1974, approval was received to proceed with construction of the first line, but approval of the second was withheld pending a full review of Ontario Hydro's long-range planning process.

In 1976, Ontario Hydro began a study of its long-term transmission requirements in southwestern Ontario under the requirements of the new Environmental Assessment Act. The study was deferred in 1977 to await the report of the Royal Commission on Electric Power Planning (RCEPP). This Commission was to look at the long-range planning needs and issues in Ontario and also address the need for a second power line from the Bruce Nuclear Power Development. In its final report, the Commission stated that it was indefensible for power to remain bottled up at the Bruce NPD and urged Ontario Hydro, along with the agricultural community, to start planning studies for the new line (RCEPP, 1980).

Hydro decided to adopt a two-stage planning and approval process (plan stage and route stage) and began evaluating numerous system plans. The new transmission facilities were urgently needed to reliably deliver the existing and approved generating capacity at the Bruce Nuclear Power Development to the power consumers of Ontario, to supply the growing loads in southwestern Ontario, and to maintain adequate interchange capability with utilities in the state of Michigan. In 1981, Hydro again started meeting with public groups in southwestern Ontario to review a number of conceptual system plans for new transmission. In the fall of the same year, Hydro submitted a Plan Stage Environmental Assessment to the government evaluating six alternative system plans and recommending approval of one. A public hearing then took place. It lasted 32 days and saw intervenors from a coalition of agricultural or-