

STATEMENT SUBMITTED TO THE SUBCOMMITTEE ON SCIENCE, RESEARCH,
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INTRODUCTION

The Atomic Energy Commission is an operating agency which also has statutory responsibility for protecting the health and safety of the public in nuclear energy activities. But beyond this legislative mandate, the Commission—and its predecessor, the Army's Manhattan Engineer District—recognized from the outset an essential responsibility for controlling potential danger to the public. Thus, from the inception of the program, special steps were taken to protect against all types of environmental pollution.

The use of nuclear energy to produce electric power is expanding at a rapid rate. Power reactors are safe and reliable, they enjoy a high degree of public acceptance, and the cost of nuclear power has dropped sharply in recent years with improved technology and with the construction of larger units.

Among the factors that affect a utility decision between fossil fuel and nuclear fuel generation are the following:

Initial capital cost

The cost of nuclear plants is generally higher than for equivalent fossil-fuel plants. However, this difference becomes less as the size of the generating unit increases. For example, recent bids received by TVA for two units of 1,100,000 kilowatts each actually indicated a slightly lower cost for the nuclear units than for a coal burning plant.

Fuel costs

In geographic areas where the delivered cost of fossil fuel is relatively high, nuclear fuel costs provide a significant advantage. Such areas include most of the eastern seaboard States, the upper Midwest, and California. Over the past few years, as the cost of nuclear fuel has steadily decreased, areas in which nuclear power appears economically attractive have expanded.

Operation and maintenance

For nuclear plants this item of cost, like capital costs, is sensitive to unit size. Under present technology and safety requirements, the staffing needs for smaller nuclear plants are considerably in excess of those for equivalent fossil-fuel plants. In the large sizes, however, a nuclear plant may require a smaller staff than a coal plant of comparable size.

Therefore, in comparative cost evaluation of fossil fuel and nuclear power, consideration must be given to such factors as unit size, relative fuel costs, the anticipated extent to which the plant will be operated (plant factor), the possibility of installing a mine-mouth coal-burning plant with long distance transmission, and any economic advantage which might be gained by adding a fossil fuel unit to an