

CONF-831047-109

PUBLIC ACCEPTANCE OF NUCLEAR ELECTRIC GENERATION
SITED IN ENERGY CENTERS*

CONF-831047--109

DE84 003273

Presented at the
American Nuclear Society
1983 Winter Meeting
October 30-November 4, 1983
San Francisco, California

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* Research sponsored by Advanced Nuclear Systems and Projects
Division, U.S. Department of Energy, under Contract W-7405-eng-26,
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Howard F. Zauman and Jeffrey T. Williams*

What will make an acceptable future for nuclear power? We believe there are four elements: The power must be needed. The plants must be safe. The power must be economical. The disposal of nuclear waste must be assured. And, above all, the public must believe all four are true.

We have completed a study in the State of Utah, with DOE support, of building a number of nuclear power plants at one location: The Nuclear Energy Center (NEC) concept.¹ The project would deliver power to the Southwest region over the first half of the next century; in this time frame we believe the power will be needed. The NEC would consist of nine large units of 1250 MWe each arranged in widely-spaced clusters of three on a large site. A 50 sq. mile site on the Green River was chosen, about 15 miles south of the town of Green River, Utah. About 82% of the power would be distributed outside Utah; the largest load would be the Los Angeles area.

*Based on work sponsored by the U.S. Department of Energy and the State of Utah. Opinions expressed are those of the authors and do not necessarily reflect the policy of the sponsors.

A number of major problem areas were uncovered. One was socio-economic; you can imagine the impacts on the town of Green River, now a few more than a thousand souls, if it were to increase to 30,000 in one decade. Another major concern was the availability of water for cooling. As Utah develops, water will become more expensive and scarce, and an NEC would contribute to this.

Last, but not least, are the institutional barriers to an NEC. At present, California utilities probably could not legally participate in projects requiring the construction of new nuclear power plants. Financing of large projects is difficult. Some new legislation would be required to distribute tax revenues fairly among the communities that would be subjected to massive in-migration. All in all, the institutional problems would be formidable, but were judged to be solvable.

Now for the favorable findings. First, many high-paying jobs would change the economic climate of southeastern Utah.

There appear to be real nuclear power economy and safety benefits, although they are difficult to quantify. The size of the project permits an assembly of expertise and a growth of experience that is not possible in single projects.

There are at least two other safety advantages at this site. It would be hard to imagine a better site in the event of an accidental radiation release. The area is semi-desert, and the population is essentially zero within 15 miles of the plants. Also, the site is suited for low-level radioactive waste disposal. This means there would be no need to transport LLW from the site to a distant disposal facility.

From the onset, the project leaders realized the importance of public acceptance. A public information meeting was held in the town of Green River, in 1978, before the project began. The local people accepted the study, and many were in favor of an actual development. The various stages of the study extended to 1982. Three additional public information meetings were held in Green River. During this period the potential supporters of a nuclear development seemed to lose interest, possibly because the conceptual nature of the study was emphasized. The last meeting was poorly attended, and the opinions represented were anti-nuclear and anti-development.

In October 1981, as the study neared completion, public briefings were given in three locations in the state -- at Green River, Salt Lake City, and Logan. At this time, written comments were solicited -- 19 were received; 4 favored the development, and 15 were opposed to nuclear power in general and to the NEC in particular.

By the end of the project, 14 topical reports had been prepared, and were made available to the public at 13 libraries in the state. In September 1982 a draft summary report on the study was distributed to over 400 interested parties, mainly in Utah and the West, with a request for comments. Only five letters were received.

We were probably successful in obtaining public acceptance for the study itself. Our effort to inform the public about the NEC option fairly and without bias, was done sincerely but probably missed the mark. Very few members of the general public ever learned enough about the results of the study to make a sound judgement on the option. Our

most fruitful endeavors were the direct contacts with state and local officials, university people, utilities, and state and federal regulators, and we received much helpful information and comment from these people.

The three issues that aroused the most response were water use, radioactive waste disposal, and nuclear safety. Many people were reluctant to use Utah's water resources to produce power to be used in other states.

Nuclear waste is a very sensitive issue in Utah. The disposal of high-level radioactive waste is presently the subject of intense study, which we chose not to duplicate. However, we found that low-level waste could be permanently isolated on the site safely and at low cost.

We found that nuclear safety was a universal concern. We attempted to stress the safety advantages inherent in larger but fewer nuclear sites. The public appreciates the value of remoteness, but this concept has no appeal to the community or even the state in which a large nuclear facility would be sited. We judged that there would be substantial local opposition to an NEC whose purpose was to supply power to distant population centers, but that the opposition might be overcome by strong economic incentives to the local community.

Reference

1. Jeffrey T. Williams, Editor, *Study of a Conceptual Nuclear Energy Center at Green River, Utah, Final Summary Report*, Utah Energy Office, ORNL/Sub-7846/1, Sept. 1982.