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The Role of Citizen Participation in Siting a High-Level Radioactive Waste Disposal Facility

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Introduction

In order to have a successful radioactive waste management and disposal program, the federal government must build public confidence and trust in the siting process (1). To do this three requirements must be met: 1) the program must be technically feasible; 2) the program must be politically palatable; and 3) the program must be societally acceptable.

Citizen participation is necessary to ensure that a radioactive waste management program is accepted by society and is politically feasible. Citizen involvement indirectly impacts technical feasibility by addressing the ethical and moral implications of nuclear waste disposal, thus helping to establish the parameters of technical solutions.

Societal Acceptance of the Federal High-Level Waste Program

When disposing of radioactive waste, it is inherent that value judgements will be made. This is most clearly illustrated by the technical guidelines that are part of the waste management program. Words such as "safe" and "acceptable" and "reasonably achievable" are relative terms. To whom is a risk "acceptable" — the Department of Energy (DOE), the Nuclear Regulatory Commission (NRC), the general public? How safe is "safe" and who makes that value judgement?

A case in point is the "Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High Level, and Transuranic Wastes" developed by the U.S. Environmental Protection Agency (EPA). These standards set radiation release limits that the DOE must meet in designing a repository. The NRC is to ensure that the repository design meets these standards when issuing a license to DOE for construction of the repository.

The EPA standards allow for radiation releases into the environment at a level that would cause 1,000 fatal cancers over a 10,000 year period; that is, one fatal cancer every 10 years from the repository. (The standard does not address how many non-fatal cancers would occur because of radiation releases from the repository.)

Is this an acceptable level of risk? Clearly, it is to the EPA or they would have set a different standard. Yet, citizen testimony on the DOE's Draft Area Recommendation Report (DARR) shows that this is clearly an unacceptable level of risk to the public. One woman at the Warren, Minn., hearing asked whose child will die of leukemia because of this standard? This is an emotional question. But emotions are an appropriate response in addressing value judgement issues.

The disposal of radioactive waste raises a number of ethical and moral questions which will have to be addressed before society accepts a waste disposal program. Two of these issues are the intergenerational transfer of the risks inherent in nuclear waste disposal, and the continued production of nuclear wastes when we have no safe and proven technology for isolating these wastes for thousands of years.

In 1944, very little high-level nuclear waste needed disposal. By 1980, there were 10 million cubic feet of liquid high-level waste from nuclear weapons production in temporary storage and 122,000 cubic feet of irradiated (spent) reactor fuel awaiting disposal (2). In the interim, society allegedly benefited from the production of these wastes yet we are passing on the risk of contamination of food and water resources to future generations. We are passing on the risks of cancer and birth defects to 500 generations over 10,000 years.

Is this morally responsible? Is it ethically acceptable? Should we, as a society, continue to produce these wastes when we cannot guarantee future generations will not be harmed by them? What are the consequences of stopping or phasing out the production of high-level waste? Which consequences are acceptable and which are not? How do we balance present societal needs against the needs of future generations? What are our land and water stewardship responsibilities to future generations?

These are fundamental questions which must be addressed before a waste management program can be successful. The questions raised deal with abstract concepts (such as land and water stewardship) yet the waste disposal program provides a context for consideration of these concepts; it quite literally brings the issues "down to earth," since DOE wants to bury this waste in the ground. How these questions will ultimately be answered depends on societal value judgements. And these value judgements are discussed and articulated by citizen involvement in the waste management program. If the concerns raised by citizens at the DOE hearings are ignored by the agency or by Congress, the result will be the failure to site a repository.

The Political Feasibility of Siting a High-Level Waste Repository.

The siting of a high level nuclear waste facility is as much a political decision as a technical one. The federal government has an unbroken track record of 40 years of failure in attempting to successfully manage the nation's high-level waste. Lack of federal competence and poor responsiveness to the needs

of states and citizens has lead to a distrust of the federal government's ability to safely dispose of nuclear waste (3).

However naively, people in the 1950s and early 1960s trusted the federal government to protect them from radioactive fallout from the atmospheric testing of nuclear weapons and from radiation releases from nuclear reactors. That public trust has been replaced by a healthy skepticism of the federal government's commitment to protect the public's health and safety.

The DOE is charged with both the promotion of nuclear power and the disposal of nuclear wastes, thus creating a conflict of responsibilities (1). Moreover, DOE, as the federal agency responsible for nuclear weapons production and for the storage of high level military waste, has a vested interest in siting a nuclear waste facility based on political expediency rather than sound technical criteria. Further, DOE has an abysmal track record in handling the military waste under its care in an environmentally sound manner. At the Hanford reservation in Washington state, more than 500,000 gallons of high-level liquid waste have leaked from underground tanks over a period of years (2). The DOE waste storage program is not licensed by the NRC nor subject to any public oversight. DOE remains accountable to no one for its actions of mismanagement.

The Nuclear Waste Policy Act, which established the current waste management program and named DOE as the agency responsible for siting and constructing two underground repositories, is a product of political compromises. The rigid timetables for siting and construction of two repositories were established to give assurances to the commercial nuclear power industry that the federal government was indeed serious about "solving" the waste disposal problem. Many people believe that the economic viability of the nuclear power industry is linked to DOE's ability to state that it has "solved" the waste disposal problem. The DOE has been

criticized for following the timetable at the expense of technical excellence in the site selection process.

Given the political nature of the radioactive waste management program, citizen participation in the DOE siting process is essential to ensure that DOE does, in fact, isolate this waste in an environmentally sound manner. Or if the technology does not currently exist, to ensure that the waste is stored temporarily in an environmentally sound manner until the technology for safe disposal is developed.

Finally, citizen participation in government decision making is a fundamental democratic principle. The political history of radioactive waste management, and the complex value judgements involved in establishing a waste disposal program make the need for citizen participation all the more important.

Conclusion

Although actively involving non-technical people in the nuclear waste siting program may be cumbersome and time-consuming, it is necessary for the successful isolation of nuclear waste. To ignore citizen concerns and value judgements is to doom any radioactive waste management program — no matter how technically sound — to failure.

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