

Summary
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- *The U.S. Nuclear Waste Technical Review Board* was created in the 1987 amendments to the Nuclear Waste Policy Act to provide an ongoing and independent technical and scientific evaluation of activities undertaken by the Secretary of Energy related to implementing the Nuclear Waste Policy Act.
- *Site-selection strategies* for a deep-mined geologic repository involve two “filters,” one consisting of technical requirements and the other consisting of nontechnical considerations. The two filters can be applied in any order, although the suite of sites eventually selected may be different.
- *The Nuclear Waste Policy Act, passed in 1982*, provided for two repositories, one that presumably would be in the western U.S. and another presumably one in the east. Three western sites were to be characterized simultaneously to assess their suitability as the location of the first repository. After the second repository program was suspended in 1986, Congress amended the Nuclear Waste Policy Act in 1987. Among other things, the amendments act identified one of the western sites, Yucca Mountain in Nevada, as the sole site to be characterized for the first repository. The Department of Energy (DOE) recommended the Yucca Mountain site to President George W. Bush in 2002, and Congress overturned a veto by the State of Nevada of the site recommendations later that year. In 2008, DOE submitted a license application for the Yucca Mountain repository to the U.S. Nuclear Regulatory Commission. DOE requested withdrawal of the license application in 2010. A final decision on whether the licensing process will proceed is pending in the courts.
- *A deep-mined geologic repository is the preferred option of all countries* for disposing of high-activity radioactive waste. In the last 40 years, the U.S. and other nations have initiated roughly two-dozen efforts to identify potential repository sites. Only three of those efforts have led to the selection of a site and are still on track. In no case has a construction license for a high-activity waste repository been issued by the responsible regulatory authority.
- *The experiences in selected countries can be summarized briefly:*
 - In France, two communities volunteered to be considered for an underground research laboratory (URL), but the granite underlying one of them proved to be technically unsuitable. Today a URL has been constructed in clay near the village of Bure. A site adjacent to the laboratory has been chosen for a repository for high-activity waste.
 - Sweden’s consent-based siting process resulted in a competition between two municipalities, Oosthammar and Oskarshamn, to host a repository for high-activity waste. Oosthammar ultimately was selected.

- The United Kingdom initiated a new approach to repository siting, inviting communities to express interest in hosting such a facility. Several borough and county councils near the Sellafield reprocessing site in West Cumbria are considering whether to participate. A decision is expected in the fall.
 - In Canada, after a deliberate effort by the siting implementer to understand the views of Canadians, including Canada's aboriginal people, more than a dozen communities have expressed interest in learning more about the implications of hosting a repository.
 - Japan called for volunteers to host a repository more than a decade ago. The one mayor that accepted the offer was recalled, and no other communities have come forward since. The damage to the facilities at the Fukushima-Daiichi site caused by last year's tsunami may have reduced the prospects for finding a volunteer host still further.
 - In Switzerland, after identifying regions of Opalinus clay as potentially suitable for repository siting, discussions are underway with communities to determine their willingness to host a disposal facility. The Swiss government will ultimately make the siting decision, but the decision could be overturned by national referendum.
 - The German State of Lower Saxony invited the German Federal Government to develop a repository at a salt site near the community of Gorleben decades ago, but the expression of interest created considerable controversy nationally. After 35 years, the site is still under consideration, but selection of the site remains problematic.
- *What characterizes national repository programs most is their variety.* In some cases, efforts to identify candidate sites have focused from the beginning on specific host-rock formations. In other cases, countries have used generic qualifying and disqualifying conditions. Some countries evaluate sites one by one, while others adopt a "parallel" approach, characterizing and comparing at least two sites simultaneously.
 - *Communities already hosting nuclear facilities* may be especially receptive to consideration as a candidate repository site. The prospect of receiving a generous benefits package is instrumental in gaining community acceptance, in some cases.
 - *Lessons that can be taken from the U.S. and other countries:* (1) Potential host communities must at least acquiesce to site investigations. (2) Implementers must engage potential host communities by establishing a strong, long-term local presence. (3) Potential host communities must have a realistic, practical way to withdraw from the siting process.
 - *The experience of the U.S. Nuclear Waste Negotiator may be especially relevant* because it reflects a consent-based siting effort undertaken in the U.S. The Negotiator was given authority to search for a voluntary host for a storage facility or a permanent repository site and could negotiate a benefits package with any acceptable incentives. Approval by act of law would have been required to complete the process. At least one Native American Tribe sought to negotiate an agreement, but funding was eventually eliminated for the Negotiator's Office by Congress.
 - *Public trust in the institutions involved in a consent-based site-selection process* is an essential element underlying the potential for success of all the efforts discussed in this testimony. It is vitally important that entities and localities that might consider hosting a storage or disposal facility for high-activity waste have confidence in the credibility of the process and the trustworthiness of the implementer of the program.