

REBUILDING SOCIAL TRUST IN THE MANAGEMENT OF RADIOACTIVE WASTE

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**Roger E. Kasperson
Research Professor and Distinguished Scientist
Clark University**

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“Social Distrust and High Level Radioactive Waste Management: Looking into the Future”**

by

Seth P. Tuler¹, Ph.D. and Roger E. Kasperson², Ph.D.

¹ Social and Environmental Research Institute, Greenfield, MA 01301

² George Perkins Marsh Institute, Clark University, Worcester, MA 01610

The management of spent nuclear fuel (SNF) and defense high level waste (HLW) is a complex socio-technical systems challenge. Coordinated, reliable, and safe performance will be required over very long periods of time within evolving and changing social and technical contexts. To accomplish these goals, a waste management system will involve a host of facilities for interim storage and long-term disposal, a transportation infrastructure, and research and development centers. The complexity of SNF and HLW management will also require an array of robust institutions and procedures. Waste management is multi-institutional, comprising multiple private companies and sectors (e.g., commercial nuclear utilities, trucking and railway companies), multiple government agencies at different levels (local, state, national), non-governmental organizations (NGOs) and other institutional stakeholders, as well as citizens. At the moment, experience of how this will work is limited.

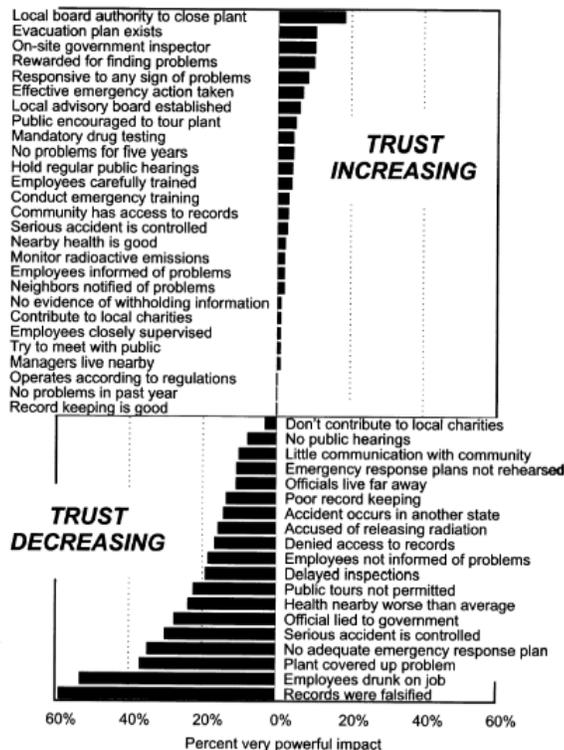
No matter how many checks and balances are put into place, no matter how much information is disclosed, no matter how many instruments for monitoring, evaluation, and oversight are implemented there will ultimately be individuals and groups entrusted to make sure “it all works.” Trust and confidence are necessary for stable arrangements in contexts of unequal power, whether in terms of access to information, economic resources, or ability to implement desired actions (Kuhn and Ballard 1999). Stable arrangements, in turn, are essential for the institutional continuity necessary for long-term projects such as the disposal of SNF and HLW.

Unfortunately, the principal agencies responsible for nuclear wastes, the Department of Energy (DOE) and the Nuclear Regulatory Commission, are not trusted by majorities of the public in recent public opinion polls (e.g., Whitfield et al. 2009) and other earlier assessments (e.g., DOE 1993, DOE 2000). Social perceptions of mis-steps and failures in government and private parties’ management of nuclear wastes have contributed to long term erosion of trust and confidence (DOE 1993, DOE 2000, Hewlett 1978, Kraft 1996, NRC 2001, OTA 1985, Pijawka and Mushkatel 1992, Rosa and Clark 1999, Rosa et.al. 2010). Reasons include Congressional scrapping of a site selection in the Eastern half of the US, Congressional scrapping of technical integrity and equity provisions in the Nuclear Waste Policy Amendments, attempts to coerce Nevada rather than negotiate, failure to clearly define regulatory criteria in advance and then adapt them to fit existing conditions, attempts to re-negotiate or circumvent compliance with cleanup agreements related to HLW at DOE sites, and treating the public as if its concerns are irrational. In short, social *distrust* is multi-lateral and “widespread in the nuclear waste domain, is deeply seated, reflects broader trends in society, and has a continuing history of events to maintain it” (NRC 2001, pg. 74).

Two reasons for the difficulty of regaining social trust in the context of SNF and HLW management stand out for special attention. First, nuclear waste is thought of in largely negative terms. Changing negative views can be hard. The “affect heuristic” explored in the work of Slovic and colleagues (Finucane et al. 2000, Slovic et al. 2007) suggests that when people like an activity or technology they tend to view it as having high benefit and low risk. On the other hand, if they dislike it, they see benefits as low and risk as high. Furthermore, recent work on “cultural cognition” reinforces findings that people tend to select and interpret information to support preexisting views, protect values and worldviews (e.g., anti-nuclear or pro-nuclear), or preserve identity with an ideological group (Braman et al. 2005, Kahan et al. 2007). Thus, information intended to educate or persuade is all too often impotent.

Second, evidence suggests that events and activities that erode social trust have a stronger impact on overall levels of trust than do those thought to strengthen social trust (Figure 1). This is often referred to as the “asymmetry of trust” (Slovic 1993). Slovic (1993) found that of the many trust-building actions investigated only one had a moderate effect: “An advisory board of local citizens and environmentalists is established to monitor the plant and is given legal authority to shut it down if they believe it to be unsafe.”

Figure 1. Differential impact of trust-increasing and trust-decreasing events on levels of trust among respondents. Respondents were asked about each event whether it would increase or decrease their trust in the management of a nuclear power plant. They, then, rated how strongly their trust would be affected (1 = very small impact on trust; 7 = very powerful impact on trust). **Source: Slovic, 1993.**



Note: Only the percentage of respondents giving category 7 ratings (very powerful impact) are shown here.

REBUILDING SOCIAL TRUST

Based upon the sizable literature on social distrust, we offer six recommendations for how nuclear waste management should move forward.

- 1) The planning process should commission a set of focus papers by leading experts on the major social and ethical problems that must be addressed in the evolving approach. These should include options for solutions and their pluses and minuses.
- 2) Social science and policy expertise will be essential (Rosa et al. 2010). We suggest convening a standing advisory committee of leading social scientists and policy analysts with whom nuclear waste planner regularly consult.
- 3) A dual strategy should be adopted. First, planning, including the design of institutional architecture and procedures, should proceed in a way that recognizes the need to perform and be effective in a context of social distrust. It may be that proceeding on the recognition of a deficit in social trust will lay the foundation for transparent, participatory procedures that can rebuild functional, critical social trust over the long term. Second, while working in a context of distrust there must also be consistent efforts at all levels and in all aspects of nuclear waste policy-making - planning, implementation, and operations - to support the (re)development of critical social trust.
- 4) Given the long, apparently obdurate distrust of the DOE it is time to think of putting waste management in the hands of alternative institutions. We argue that responsibility should be placed in a public corporation, as many countries have done.
- 5) A premium should be placed on openness, inclusive stakeholder involvement, and truly independent peer review (including impacted communities and knowledgeable, demanding critics) during the planning, decision, and monitoring process for all stages of program development and operation. The role of public involvement and peer review should be clear and meaningful. Independent review by critics.
- 6) Contingent on geological suitability, the approach to siting should emphasize voluntary consent rather than coercion as much as possible.

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