Trust and the Nuclear Power Industry

Darryl Farber and Jennifer Weeks are to be commended for writing such an important and timely article in the July/August Environment regarding the development of a decommissioning strategy for commercial nuclear reactors in the United States.1 In the article, the authors discuss the risks of decommissioning nuclear power plants, stakeholder concerns, and how the management of the decommissioning process by industry and government may impact the future of nuclear power. Three issues for the authors to address in their future work are provided in this commentary.

The U.S. nuclear industry's poor public relations and disclosure of information record is reflected in the history of public distrust of the industry and its regulators. The U.S. nuclear industry is perceived to have misled the public, particularly in its search for cost-cutting solutions. This issue is well exemplified by the public's response to the attempted decommissioning measures for two reactors owned by Yankee Atomic Electric Company in Massachusetts and Maine (Yankee Rowe and Maine Yankee), mentioned in Farber and Weeks's article. The controversial approaches used to decommission these two reactors raised questions about whether the companies involved were using the fastest—rather than safest—method to decommission the reactors. The industry has also been criticized for its inability to dispose of its waste properly. In addition, the U.S. Department of Energy (DOE) received criticism for miscommunications regarding the proposed high-level radioactive waste site at Yucca Mountain in Nevada.2 DOE's risk communication initiative to educate the public about the site backfired (the public distrusted DOE more following the initiative than before it).3 Under these circumstances, it is understandable that the public's trust in the nuclear industry is low. Therefore, Farber and Weeks's recommendation—that nuclear industry representatives and government regulators build greater transparency into the decommissioning process and allow for more stakeholder involvement—makes some sense.4 I feel, however, that this proposed solution is not broad enough and does not address the whole "trust" issue.

First, who are the stakeholders? Do the stakeholders invariably represent the public? They do not. The problem is that most of the public is part of the silent majority, and with the exception of "not-in-my-backyard" (NIMBY) issues, the public does not participate in disputes over siting waste incinerators or decommissioning nuclear reactors. In addition, one should bear in mind that increasing transparency and involving stakeholders may at times be inefficient and highly time consuming without guaranteeing a better result. Working to try to reach consensus takes time. Meeting frequently to discuss the issues in detail can be inefficient, and the cost of such meetings is high.5 During rulemaking negotiations to relicense four hydropower stations along the Androscoggin River in Maine, U.S. Environmental Protection Agency officials from Boston traveled to Maine sometimes as often as once per week for a period of more than three years.6

Second, as has been noted by the work of social psychologists Ortwin Renn and Deborah Levine, there are several components of trust-building—namely, fairness, competence, and efficiency.7 My concern is that all of the causes

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of the public’s distrust of the nuclear industry may not necessarily be properly addressed simply by making the process more transparent and encouraging greater stakeholder involvement. In other words, if the lack of public trust associated with decommissioning is due to a lack of fairness or impartiality, then deliberative strategies will provide the solution. However, I would hypothesize that the public’s distrust of the U.S. decommissioning process has much to do with incompetence. Under such circumstances, deliberation alone will not help. For example, it is likely that experts will need to be more involved because of the highly technical nature of the issues. In the event of an accident associated with decommissioning a nuclear power reactor, competent experts (in this case nuclear physicists and engineers) will need to help address the root causes of the problem and ensure that the decommissioning can proceed safely. In this situation, deliberative techniques would be less useful. If the process is too costly, then experts will have to examine how to reduce costs, and competent economists as well as stakeholders will need to be involved.

Finally, I am concerned that the recommendations put forward in Farber and Weeks’s article may become precedent for other nations’ nuclear decommissioning programs, which could be a problem because the levels of trust toward regulators and industry vary from nation to nation. It is true that stakeholder involvement—as well as industry transparency, which Farber and Weeks argue for—are presently very much in vogue in the European Union, including Sweden and the United Kingdom. Policy makers and regulators see it as the best way to rebuild the public’s trust in them. Yet, as indicated by the long history of active public participation, this vogue is cyclical; participation does not provide a universal panacea. Further, what should regulators, who are already trusted by the public, do when faced with a possibly contentious issue? Should they make their process transparent and involve stakeholders? I do not think so because this could create distrust in the regulatory process. For example, what happens if the stakeholders’ requirements run counter to those of the government authorities and industry? The critical issue—one at the heart of the decisionmaking process—is that a decision has to be made at some point, and it will not always be universally popular. Who will decide what it should be?

Transparency and greater stakeholder involvement in the decommissioning of reactors in the United States might be the right solution. Yet the proposed deliberative process, if inefficient and time consuming, might not achieve the desired outcome. This strategy may also fail to address some of the reasons why the industry forfeited public trust in the first place. In addition, this proposed solution should not set the precedent for the industry as a whole because not all nations’ nuclear regulators and industries are as distrusted as those in the United States. In Sweden, for example, the nuclear industry has earned the trust of the public for several reasons, but two reasons stand out in particular. First, Sweden’s nuclear industry has an exemplary safety record, and to date there have been no alleged cover-ups (unlike in other countries). Second, the industry’s approach is to work with the regulator rather than oppose it, even when the regulator’s decision is considered too harsh. For example, after a minor incident at Sweden’s Barsebäck 2 reactor in 1993, the Swedish Nuclear Inspectorate, the nuclear regulatory entity, required that five reactors with the potential for similar incidents be shut down for modifications. Because no such steps were taken at any of the other reactors in the world with similar building designs, this regulatory action was considered unusually strict. The reactors were closed down for five months, and even one of the Swedish nuclear industry’s most vociferous opponents, Greenpeace Denmark, felt the process had been handled properly. The industry never questioned the government’s decision. Further, after the reactors were back on-line, the Barsebäck plant where the incident had taken place was viewed as safe by a majority of respondents surveyed in nearby Malmö because of their trust in the nuclear power industry.

1. D. Farber and J. Weeks, “A Graceful Exit? Decommissioning Nuclear Power Reactors,” Environment, July/August 2001, 8–21.
2. R. E. Dunlap, M. E. Kraft, and E. A. Rosa, eds., Public Reactions to Nuclear Waste: Citizens’ Views of Repository Siting (Durham, N.C.: Duke University Press, 1993); J. Flynn, R. E. Kapperson, H. Kunreuther, and P. Slovic, “Overcoming Tunnel Vision: Redirecting the U.S. High-Level Nuclear Waste Program,” Environment, April 1997, 6–11, 25–30; and J. H. Flynn, F. Slovic, and C. K. Marz, “The Nevada Initiative: A Risk Communications Fiasco,” Risk Analysis 13, no. 5 (1993): 497–502.
3. Flynn, Slovic, and Mertz, note 2 above.
Ragnar Löfstedt raises important issues about the role of deliberation in making decisions about nuclear decommissioning. He highlights the complex relationship between social trust, public deliberation, and transparency.

While recognizing the complexity of this relationship, our position is that transparency is a necessary condition for sound, ethical decisions about decommissioning. Citizens have a fundamental right to know about technological choices that may affect their health and safety. The key question is how they can learn about the relevant issues and how expert they can be expected to become—in other words, what constitutes sufficient knowledge, how do citizens obtain this knowledge, and finally, how do citizens know they have adequate knowledge to make a decision?

Our research on nuclear reactor decommissioning indicates that the knowledge base for understanding how and why decisions are justified is very difficult to determine. There are legitimate questions about the consistency of the regulatory framework and how risks are assessed and managed.

As Löfstedt correctly points out, not everyone is going to agree with a decision, but currently it is hard to judge whether disagreements are well grounded. Without a transparent knowledge base, it is impossible for anyone other than experts intimately familiar with the decommissioning process to ask a reasonably intelligent question and to distinguish reason from rhetoric.

Regardless of whether there is a deliberative decision process for decommissioning, a sound knowledge base should be developed to justify decisions. It makes sense therefore to differentiate between transparency of knowledge and deliberation, although we recognize that some knowledge of the decommissioning situation is generated only through deliberation.

We stress that managers should work to make the reasoning that underlies decommissioning choices transparent as an integral part of regulatory oversight. Making transparency a design criterion for the decision process is also likely to shorten deliberations, because key issues and rationales will be clearer. We think that the quality of a decision should be judged not only by its outcome, but also by how well the decision was thought through.

Infusing such transparency into the U.S. Nuclear Regulatory Commission’s (NRC) decision process is a major undertaking, but clear communication about risks and the reasoning that justifies an assessment should be one of NRC’s core competencies. Many implementation issues remain to be resolved, but our intent was to show that transparency should be an integral part of the civilian nuclear decommissioning decision process.

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