

Improving the Way State and Federal Co-Regulators Communicate about Risk -9400

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ABSTRACT

This paper explores risk communications concepts that could be used by Federal and state governments to help the public understand how government officials rely on risk analysis and management to ensure that shipments of spent fuel and other radioactive wastes take place in a safe, secure manner that merits public confidence. A key focus in the communication concepts put forward in the paper is the relationship between understanding and validating the public's concerns and explaining how those concerns are being addressed by current safety requirements and practices. The authors will recommend best practices to state and Federal officials that have the responsibility for communicating with the public about radioactive waste transportation. The paper will also suggest ways to bring these state and federal co-regulators together to communicate more effectively and to speak with one voice on the issue of shipment safety.

INTRODUCTION

Over the past four decades, the Federal government and the states in the U.S. have developed a complex but highly effective regulatory framework for assuring that spent nuclear fuel and high-level radioactive waste can be safely transported by rail and highway. That framework includes numerous activities undertaken by Federal and state governments, as co-regulators, to analyze and manage the risks associated with shipments of spent nuclear fuel and other radioactive waste. The measures these two levels of government take to reduce risk include activities such as route selection, advance notification, vehicle inspections, and security escorts. This system of regulation, with roles for both state and federal officials – combined with diligent compliance on the part of industry – has resulted in an impressive record of safety for shipments of radioactive waste in the U.S.

Despite this success in managing the risks of shipments, Federal and state governments have not always been as successful in communicating with the public regarding how this regulatory framework works to ensure their safety. The effectiveness of public outreach efforts has been hampered because too often the focus is on *educating* people *about* risks instead of explaining how different levels of government work together to *manage* the risks. In other words, state and federal government officials have been trying too hard to convince people not to fear shipments of radioactive waste. Instead, government officials should adopt the more effective approach of first acknowledging that public concerns exist, and then explaining the many steps people at all levels of government are taking to reduce the risk that shipments pose for the public.

RISK COMMUNICATION EXPLORED

Risk communication, broadly defined, is a dialogue among technical experts, regulators, public and private interest groups, and the general public on how best to assess and manage risk. The dialogue often consists of informational presentations by technical experts, debates over contested data and its

interpretation, the publication of unintentionally misleading data by the media, and the selective use of information or disinformation to further a viewpoint or agenda. The dialogue is further complicated by the often stark differences in approach, language, and perceptions used by the various parties. In general, technical experts and regulators tend to frame expert risk assessments in terms that are impersonal, quantitative, and heavily laden with scientific jargon. In contrast, public interest groups and the public at large often use ordinary language to express their perception of risk in terms that are distinctly personal and qualitative.

Thus, a primary task for federal and state regulators involved in spent nuclear fuel shipments is to translate their expert risk assessments and risk management efforts into messages that can be understood by and address the real concerns and perceptions of a particular audience. To do this, regulators must understand the reason why they need to communicate about risks, with whom, and how to do it effectively.

1. Understand the purpose of communication

There are many purposes to risk communication. These include providing information, gathering information, building trust and credibility, encouraging involvement, and seeking to influence an audience's behavior or perception of risk. It is important that the purpose of any communication effort be clearly stated up front. For example, it should be clearly stated whether the purpose of the communication effort is to explain a decision that has already been made or whether it is to seek input that could influence a future course of action. There is nothing more frustrating to a stakeholder than providing thoughtful feedback on a report or plan that lays out a course of federal action, only to learn that the report was not the *first* step in deciding on an action but actually the *final* step describing what had been chosen.

2. Know your audience

After deciding on the purpose of the communication, the next step is to develop an understanding of the potential audience. In general, members of the audience can be grouped into four general categories:

- Organizationally impacted stakeholders such as elected officials, government agency representatives, emergency responders, and industry
- Individual stakeholders who could be personally affected by a proposed action
- Generally concerned stakeholders such as public interest or advocacy groups
- Media

It is important to recognize that each group may have its own understanding or perception of a particular subject and reason for communicating. Different approaches for each unique audience need to be identified, and different messages crafted, but the overarching message *must be consistent*. For example, DOE recently made the decision to portray the development of the national repository as a way to ensure a future for nuclear power in the U.S. [1]. While there may be merit to this approach, it clearly will be difficult for DOE to speak to audiences that include nuclear opponents and try to persuade them that building a repository to permanently dispose of nuclear waste will further the important goal of cleaning up the environment. State and federal regulators should therefore think carefully about the messages they construct for one audience so as not to inadvertently restrict the messages they can use in another forum.

3. Recognize/understand/validate stakeholders' concerns

Addressing stakeholder concerns and perceptions should be the primary focus of risk communication. These concerns and perceptions can vary widely based on audience. Some common factors that often

shape the public’s concerns are potential health effects and economic impacts, past experience with similar type of activities, proximity of sensitive populations such as children, pregnant women and the elderly, media coverage, and activity of local interest groups. In addition, there are a number of qualitative or “outrage” factors that can influence the way individuals perceive risk (see Table I).

Table I. Key Outrage Factors in Risk Communication [2]

Voluntary	People often choose to do risky activities. Since it is their choice, the risk seems absent, or at least acceptable. When decisions are forced upon them and the choice is taken away, the perception of risk is often heightened.
Individual control	People are much more comfortable when they – or someone they trust – can influence or control a risk. They don’t feel nearly as comfortable relying on others – such as the federal government – to protect them.
Fairness	If a risk is shared equally by all, then it generally is more acceptable.
Benefits	People are more willing to accept a risk if they receive a benefit from taking that risk. If they receive no benefits, they are unlikely to accept the risk.
Natural versus artificial	Natural risks are much more accepted and therefore considered less risky than man-made or artificial risks.
Familiarity	As people become more familiar with certain hazards, they seem less risky.
Dreaded	If a particular risk can result in an effect that is dreaded, such as cancer, then the risks are much less acceptable.
Detectable	Risks that are not easily detectable are less acceptable.
Well understood	Risks that are not well understood by the public are less acceptable.
Catastrophic potential	If a particular risk has the potential to cause catastrophic consequences, the risk will be perceived as much higher.
Trusted source of information	People are willing to accept a risk more readily if someone or some organization that they trust says the risk is manageable. If the source of that information is not trusted, then the risk seems much greater.

All of factors listed above should be considered in developing a message for a particular audience. Messages addressing outrage factors should be crafted to address the audience’s perceptions of risk in terms that are empathetic, qualitative, and expressed in ordinary language.

Regulators, being by nature technical, often employ one approach for communicating about risk: explain the facts that, whether explicitly or implicitly, show public concerns to be unfounded. The emphasis is on explaining the facts, with the expectation that people will change their beliefs about the risk that concerns them. Some government officials consider it irrational for people *not* to adjust their perception of the risk of spent nuclear fuel shipments when confronted with evidence, for example, the shipments of other hazardous materials pose a much greater risk. But what is irrational is the expectation that people *would* change their perception when presented with “just the facts.” People hold strong beliefs when it comes to other aspects of life – politics, religion, diet, personal finances – in the face of strong, persuasive arguments in favor of a change. People often have good reasons for not changing their political affiliation, for example, when presented with information to show that another party’s platform better aligns with their beliefs. Likewise, they may have good reasons not to change their views on the potential risks posed by shipments of spent nuclear fuel, even if presented with what the regulator considers to be important facts.

Expanding upon this last point, the single most important step a risk communicator can take is to acknowledge that the risk exists. Risk comparisons should never imply that spent fuel is not a hazardous or dangerous material [3]. Trivializing the hazard is equally inappropriate. Regulators must remember that stakeholders are paying attention precisely because they believe that spent nuclear fuel is, or can be, an extremely hazardous commodity to transport. Federal and state regulators should acknowledge that spent nuclear fuel shipments *do* pose a risk and recognize that stakeholders have a legitimate reason to be concerned. Having established agreement on these two points, the dialogue can move forward to the next step.

4. Explain the actions being taken to reduce the risk and their impact

It is important with many audiences to hear what their safety regulators are doing to manage or reduce the risk. For example, spent nuclear fuel *is* hazardous, but it is relatively easy to contain because it is not a gas or a liquid – it’s solid and in a form that makes it extremely difficult to disperse. Because spent nuclear fuel is hazardous, it is shipped in NRC-certified casks that are designed to prevent radioactive material releases or increased radiation exposures in a severe transportation accident, and to reduce routine exposure during normal transportation. In addition, state and local governments contribute to the safety of shipments by inspecting the carriers and packages, escorting trucks and trains, monitoring shipments, and training and planning for response to emergencies

Of all hazardous materials, shipments of spent nuclear fuel have the most stringent requirements and standards. In fact, because of the way risk is managed for spent nuclear fuel shipments (e.g., “accident-resistant” packaging and increased operating controls), these shipments have a better safety record than almost any other hazardous material. This is borne out by DOT accident statistics, studies by independent agencies and expert panels such as the National Academy of Sciences, and risk studies completed by NRC (e.g., NUREG-0170 and NUREG/CR-6672) [4,5]. While the past record of safe shipments may be a general measure of the effectiveness of a carefully designed regimen of safety and security measures implemented by shippers, carriers, and state and federal regulators, the record of past performance is not necessarily a guarantee of future performance. Risk communicators should not present it as such, nor should they be surprised if a stakeholder raises this point.

5. Reinforce/emphasize the commitment to protect public health and safety and the environment and to promote common defense and security

Even though the risk of shipping spent fuel is significantly lower than the risks of other hazardous material shipments, NRC, DOT, state and local governments continually strive to improve their activities. Toward this end, they review severe accidents, sabotage scenarios, and best practices to ensure that current regulations still protect public health and safety.

WAYS FEDERAL AND STATE REGULATORS CAN IMPROVE RISK COMMUNICATION

The principles of risk communication provide guidance for federal and state regulators to follow as they either develop or revisit their approaches to communicating with the public about risk. Because these two levels of government are involved in the same activity – namely, protecting the public from the risks associated with shipments of spent nuclear fuel – it is important for them to speak with one voice on transportation safety. To accomplish this, it would behoove federal and state regulators to work jointly on taking the following steps:

1. Develop a shared communications plan: The communication plan should include development of safety messages, explanation of effective risk management strategies, and the roles of federal, state and local governments in the transportation safety framework. The plan should also include

specific procedures for all parties to follow for sharing information requests and the associated responses so as to keep everyone informed of media or public interest.

2. Review and revise public information offerings related to spent nuclear fuel transportation: Whether written products, PowerPoint slides for presentation, videos, or web-based information materials, the goal for each product should be to acknowledge that public concern exists, address specific steps the regulator is taking to address that concern, and explain the roles and responsibilities of the federal, state, and local governments in protecting the health and safety of the public.
3. Increase the presence of state and local officials at public meetings: To the maximum extent possible, the emphasis should be on state and local government personnel to do the communicating, with assistance from the NRC and other federal regulators, as needed. When scheduled, federal public meetings or hearings should take place in locations where people may be personally affected by an agency's action. At these local meetings, state and local government personnel should always be invited to speak about their own role in assuring shipment safety, answer questions, and get their names out there as a resource to the public.

These recommended practices are relatively simple, manageable steps that state and federal regulators can take over the near term to improve the way they communicate with the public about risk. A further improvement, requiring greater time and effort, would be to move beyond simply improving communication to actually engage stakeholders in the decision-making process that shapes the public policy directing spent nuclear fuel shipping programs. This expanded role for stakeholders can only be possible with a significant culture shift – that is, federal and state regulators must be willing to relinquish some modicum of control over decisions. Also, to welcome informed partners into the decision-making process will require state and federal regulators to provide the public with the right tools, including a great deal of information that is not currently accessible (or, at least, is not easily accessible). This further step of making the public more of a partner in decision making will require much more work for government agencies. The reward, however, would be a significant improvement in the level of trust and confidence that the public has in government institutions at both the state and federal level.

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