

# COMMUNICATION PLAN for Spent Fuel Transportation

Version: Feb 18, 2004

## Scope

This plan covers the Nuclear Regulatory Commission (NRC) Office of Nuclear Materials Safety and Safeguards (NMSS) staff activities regarding the regulation of spent nuclear fuel (SNF) transportation.

## Goals

### NRC's Strategic Objective and General Goals

The NRC's Strategic Objective is to enable the use and management of radioactive materials and nuclear fuels for beneficial civilian purposes in a manner that:

1. protects public health and safety and the environment
2. promotes security of our nation, and
3. provides for regulatory actions that are effective, efficient, and open.

This Strategic Objective is supported by the following five General Goals.

1. Safety            Ensure protection of public health and safety and the environment.
2. Security        Ensure the secure use and management of radioactive materials.
3. Openness        Ensure openness in the Agency's regulatory processes.
4. Effectiveness   Ensure that NRC actions are effective, efficient, realistic, and timely
5. Excellence     Enhance the effectiveness and efficiency of NRC corporate management.

## Spent Fuel Transportation Strategic and Communication Goal

The spent fuel transportation strategic goal is to prevent significant adverse impacts to the current and future public health and safety and the environment, and to promote the common defense and security. This goal is consistent with the Commission's Strategic Plan.

The spent fuel transportation communication goal is to increase public awareness of NRC's commitment and ability to carry out licensing and regulatory responsibilities for safe and secure SNF transportation. This will be achieved by the following actions:

- Developing and maintaining a list of key stakeholders with interests and concerns related to the shipment of SNF.
- Establishing and maintaining effective relationships with stakeholder groups and communities.
- Identifying and understanding concerns of stakeholders.
- Providing accurate and timely information to stakeholders. This includes establishing shared understanding of the NRC's role, authority, and processes for ensuring protection of public health and safety.
- Actively engaging stakeholders by soliciting input; using stakeholder comments to develop and improve NRC products; and providing specific feedback on how stakeholder input has been considered.
- Maintaining a limited number of trained NRC staff to support public outreach activities.
- Conducting periodic evaluation of the effectiveness of interaction with stakeholders with focus on determining how well NRC messages are understood, how accurately they are reflected in media coverage, and whether SFPO outreach activities are being communicated with openness and clarity.

- Supporting the NRC technical staff in the implementation of NRC's High Level Waste (HLW) programs by:
  1. developing communications tools that convey key policy and technical messages;
  2. providing necessary training to help the NRC staff communicate clearly, candidly, and confidently about the NRC's mission and their role in accomplishing that mission; and
  3. committing the time and resources to prepare adequately for effective communication with the broader stakeholder community.
  
- Coordinating public outreach activities with other key Federal agencies that share regulatory responsibility in the SNF transportation arena including the Departments of Transportation, Energy, and Defense (DOT, DOE, and DOD, respectively) and Federal Emergency Management Administration (FEMA). Learning about the content and extent of their outreach programs.

### **Key Messages**

- The NRC is an independent regulatory agency and not a part of the DOE.
  
- The NRC's most important mission is to apply its regulatory and licensing authority to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment.
  
- In carrying out its mission, NRC will act in an open and clear manner, that is effective and efficient, and that directs resources toward regulatory actions that further safety while reducing unnecessary burden on those we regulate and on the public we protect.
  
- The NRC's regulatory decisions with regard to HLW transportation, storage, and disposal will be reached in a fair and public process. Decisions will be based on an objective evaluation of the evidence related to the NRC's mission.

### Specific Messages in Support of Above

- The safety record (over thirty year history) for spent fuel transportation in the U.S. and abroad has been excellent.
- NRC and DOT have a shared responsibility for regulations governing transportation of radioactive materials.
- The staff periodically reviews the bases for NRC transportation regulations to account for changes in analytical methods, materials, package (cask) contents and operating history.
- NRC regulates the physical protection of commercial SNF in transit (10 CFR 73.37).
- Since the events of September 11, 2001, (i.e., 9/11) the NRC has augmented its security requirements for shipments of radioactive materials and is studying the vulnerability of transportation casks to potential terrorist attacks. Based on the results of these studies, and other pertinent information, the NRC will change its security requirements for shipments if circumstances warrant.
- NRC Package Performance Study is the most recent in a long series of transportation studies, and is the first to subject full scale casks to tests under accident conditions.
- NRC regulatory program includes review and certification of transportation cask designs and on-site inspection of package (cask) designers, fabricators, and users to ensure compliance with NRC transportation regulations.
- NRC does not regulate DOE's shipments of radioactive material. For the specific cases of the Waste Isolation Pilot Project and the proposed Yucca Mountain Project, NRC-certified casks must be used but NRC does not regulate the shipments.

- If the proposed Yucca Mountain geologic repository existed today, the current DOT safety and security regulations would enable SNF shipment campaigns using NRC-certified casks. No additional NRC approvals would be needed.

## **Background**

### Transportation of Spent Nuclear Fuel

NRC develops licensing, certification, physical protection, and quality assurance review criteria and positions for SNF transportation for the industry and the public. This includes documents such as NUREG 1617, "Standard Review Plan for Transportation Packages for Spent Nuclear Fuel."

NRC reviews safety concerns associated with transportation casks. Commercial transportation cask systems are reviewed according to requirements in 10 CFR Part 71 and the security aspects of shipments of NRC-licensed material are reviewed according to requirements in 10 CFR Part 73.

Transportation cask certification requires that the NRC interact with the cask manufacturers and utilities. Subsequent to the completion of acceptable design reviews, the NRC certifies transportation cask designs. As specified in the Nuclear Waste Policy Act, the NRC is responsible for the review and certification of all cask systems that will be used for shipment of commercial SNF.

NRC performs safety and quality assurance inspections of transportation cask systems. NRC coordinates and develops guidance on transportation policy and safety issues with other U.S. government and international agencies. NRC provides technical support for transportation incident and emergency response.

NRC and DOT have a shared responsibility for regulations governing transportation of radioactive materials as described in the NRC/DOT Memorandum of Understanding. DOT regulates transport of hazardous materials, including radioactive material and determines

requirements for shipping paper contents, labeling and marking of packages, and placarding of vehicles. DOT also defines requirements during transportation, regulates both shippers and carriers, and sets routing requirements.

NRC provides technical support to DOT and works with DOT to ensure regulatory consistency for transportation issues. NRC certifies spent fuel and other package designs, approves transportation package quality assurance programs, and conducts inspections of licensees against DOT and NRC requirements. NRC reviews and approves the routes chosen for each shipment with respect to NRC security requirements.

Extensive security measures required by the NRC protect against radiological sabotage or theft and diversion. The NRC currently has in place a set of regulatory requirements specifically for the physical protection of commercial SNF transit (10 CFR 73.37). In addition, NRC maintains a threat assessment capability that includes close and ongoing contacts with the Federal law enforcement and intelligence agencies. Since the terrorist events of September 11, 2001, the NRC staff has augmented the security requirements for most shipments of nuclear materials including spent nuclear fuel.

The NRC staff periodically reviews the basis for NRC's transportation regulations to ensure that the regulations continue to provide an adequate level of safety for the shipment of SNF. These reviews account for changes in analytical methods, materials, package (cask) contents and operating history. A recent review (NUREG 6672) confirmed that initial transportation studies done in the 1970's (on which NRC's regulations are based) contained very conservative assumptions and that the risk to the public from transportation of SNF continues to be quite low.

The Package Performance Study, which was initiated in 1999, demonstrates the robustness of full-scale spent nuclear fuel transportation casks by conducting confirmatory research using an enhanced participatory process.

## **Spent Fuel Transportation Outreach Challenges**

There are a number of challenges that the staff will need to address for each outreach opportunity and these may change over time, these are listed below.

1. Much of what NRC does to ensure the safety and security of spent fuel shipments is not very visible to the public and the majority of oversight responsibility for safe shipments mostly lies with DOT.
2. Some stakeholders represent well organized and well-funded opposition to the shipment of SNF. These stakeholders may include State governments and other organizations with a high degree of public credibility. Information these groups provide has ulterior motives to support their particular cause or concern; this information may often be incomplete or misleading.
3. In most instances, the audience for public outreach will be diverse and widespread across the country, but the vast majority of the potential audience is not currently engaged with the issue – this will change as the number of potential shipments and shipping routes and modes are identified.
4. Most stakeholders do not understand safety requirements for spent fuel casks and why and how casks can withstand the forces of most potential accidents.
5. Transportation of SNF is the part of the fuel cycle that most directly touches members of the public, in part, because of “not in my backyard” concerns.
6. There is a perceived terrorist threat to SNF transportation and based on the need to withhold certain information about shipments from the public (post 9/11), additional public fear of terrorist attacks on shipments and mistrust of the NRC may exist.

## **Audiences (stakeholders)**

Stakeholders, external to NRC, who have an interest in, or who believe themselves to be affected by, the NRC's decisions regarding the transportation of SNF include: States, counties, municipalities, and federally-recognized Indian tribes through which SNF shipments have passed or might pass; the U.S. Congress; Federal agencies such as DOT, DOE, DHS, DOD, and the Environmental Protection Agency (EPA); nuclear utilities; industry (nuclear, transportation, and other) groups; electricity rate payers; cask certificate holders; fabricators; citizen groups; environmental groups; non-governmental organizations; media; and the public.

The staff and management stakeholders within the NRC includes representations for the Executive Director of Operations, Office of Nuclear Reactor Regulation, Office of Nuclear Material Safety and Safeguards, Office of Nuclear Regulatory Research, Office of Congressional Affairs, Regions, Office of the General Counsel, Advisory Committee on Reactor Safeguards, Advisory Committee on Nuclear Waste, Atomic Safety and Licensing Board Panel, Office of State and Tribal Programs, Office of Administration/Division of Facilities and Security, Office of International Programs, and Office of Public Affairs.

## **Addressing Openness, Clarity, and Efficiency**

The NRC Strategic Plan describes that nuclear regulation is the public's business, and it must be transacted publicly and candidly. The public must be informed about and have the opportunity to participate in the regulatory processes as required by law. Open channels of communication must be maintained with Congress, other government agencies, licensees, and the public, as well as within the international nuclear community. Regulatory actions should be coherent, logical, and practical. There should be a clear nexus between regulations and agency goals and objectives whether explicitly stated. Agency positions should be readily understood and easily applied, they should be open and clear, and be communicated efficiently.

The strategic plan maintains that members of the public are all entitled to the best possible management and administration of regulatory activities. The highest technical and managerial competence is required and must be a constant agency goal. Further, the NRC must establish

means to evaluate and continually upgrade its regulatory capabilities. If regulatory effective alternatives are available, the option that minimizes the use of resources should be adopted. Regulatory decisions should be made without undue delay.

Information provided to the public needs to be concise and logical so that the public can understand it. The NRC processes to assess public feedback needs to be effectively implemented to identify improvements in outreach processes, techniques, and programs.

Public risk must be communicated from the standpoint of: (1) routine (incident-free) exposures; (2) accident risks; and (3) risks of terrorist attacks or other sabotage. Both probabilities and consequences should be presented, and results will have to be described simply and in plain language. Doses to members of the public will have to be addressed, as well as doses to transportation workers. These potential doses should also be explained in plain language to promote understanding by stakeholders not trained in health-physics.

In the post-9/11 environment, stakeholders may request that the NRC discuss possible consequences of accidents or assaults that result in breaching a cask, both in terms of dose and consequences to the public, and in terms of land contamination and remediation or loss of use. The NRC will need to balance the public's desire for detailed safety and security information with the need to restrict certain information from public dissemination to accomplish the NRC's mission. Results of the risk communication project lead by Office of Regulatory Research and the NMSS External Communications Group will be incorporated in this plan, as appropriate.

Adequate protection based on the reliance upon standards used to determine that a regulated activity is safe and secure enough is another message that needs to be communicated openly, clearly, and efficiently. The standards should be described in plain language. It may be important to discuss that safety standards have not changed since the events of 9/11, while security requirements have been augmented by advisories and by orders to selected licensees.

It will be necessary to address questions from the public about the risks of spent fuel transportation and storage at: (1) reactor sites, (2) independent spent fuel storage installations, (3) an interim central location (such as the proposed Private Fuel Storage Facility), and (4) a

permanent geologic repository – there have been attempts by stakeholders to link storage and transportation in public discussion. It is unlikely that it will be persuasive to simply state that storage and transportation are adequately safe. Therefore, it will be necessary to explain in detail why NRC finds these activities to be safe and secure. For comparison purposes, the staff will also consider mentioning the frequency and safety record of hazardous materials shipments which are made in accordance with DOT regulations.

The communication of NRC enforcement also needs to be clear, concise, and open. This will foster public confidence in NRC inspection/regulatory activities and the adequacy of our regulations. The concept of timely and appropriate enforcement may be more difficult to convey than the NRC's providing of adequate protection (i.e., safety). The actual history of licensing or specific enforcement activities or issues may provide a persuasive indicator of future enforcement effectiveness. The NRC should be prepared to discuss examples of rejected applications for transportation or storage cask designs or design modifications that did not conform with NRC regulations, and enforcement actions that demonstrate the Agency's focus on safety and compliance.

Perhaps the most difficult area for open and clear communications will be staff description of safeguards and physical protection requirements for spent nuclear fuel. The obvious dilemma is to convey sufficient information so that the public understands the issue and that physical protection provisions are sufficient, without conveying information that would help a potential adversary defeat licensee security measures. If a successful message of safeguards adequacy and enforcement can be conveyed, it may help reduce public anxiety about the specifics of physical protection provisions. It will be particularly important to be able to communicate the risk acceptance criteria or other objective standards used to approve an activity, and how NRC would respond to prevent an activity that did not meet relevant standards. The staff should be prepared to discuss security issues and provisions at a level appropriate to the circumstances, with due regard for "need to know" and other safeguards information considerations.

The staff recognizes that implementing some of the principles reflected in the public outreach objectives will be increasingly difficult. In particular, establishing the framework and supporting arguments for demonstrating the adequacy of NRC's regulatory system for spent fuel transportation will be critical to success. Further, the staff must identify and incorporate new

information into this communication plan for SNF transportation as it becomes available. This would include, for example, results from the Package Performance Study; staff responses to new public, State, Federal, or Native American concerns discussed in the press, at public meetings, or during other outreach activities; or communication tools, methods, or techniques that are not currently implemented or addressed.

### **Application of Public Outreach Tools and Techniques**

Various tools and techniques will be used in the implementation of this communication, these include, but are not limited to:

- public meetings with State, local, and other stakeholder groups
- papers at technical meetings (such as PATRAM, ANS, and ASME)
- meetings with oversight committees
- meetings with governors' associations
- web pages
- downloadable media presentations
- brochures
- videos
- phone calls
- response letters

### **Cost and Schedule:**

Costs are currently projected to be 2 FTE and \$235K per annum through FY04.

**Key Milestones:** (as reflected in SFPO Operating Plan)

### **Typical Outreach Activities:**

1. Attending meetings with the Midwest Governors' Association, Southeast Governors' Association, Northeast Task Force, and the Western Governors' Association as invited

(usually 3-4 meetings per year). Providing information on NRC's transportation oversight role, key rulemakings, and other regulatory activities.

2. Supporting public meetings sponsored by the NMSS Division of Waste Management with Nevada stakeholders at the county or state level to discuss Yucca Mountain licensing issues (usually 2-4 meetings per year). Providing an overview of the regulation of transportation of spent nuclear fuel. Coordinating support from DOT or other Federal agencies as needed.
3. Attending public meetings sponsored by other Federal agencies, such as DOT, DHS, DOE, or EPA, involved with SNF transportation or emergency response. Describing NRC's role in the regulation of safe and secure transportation of nuclear materials and how NRC interfaces with the other Federal agencies involved with SNF transportation.