

The workshops will be convened in a "roundtable format." To have manageable discussions, the number of participants at the table will be limited. NRC, through the meeting facilitator, will ensure that by a broad spectrum of interests participates at the meetings, including citizen and environmental groups, nuclear and transportation, industry, academia, and governmental representatives at the Federal, State, and local level. Other members of the public are welcome to attend, and there will be opportunities to comment on each agenda item to be discussed by roundtable participants. Written comments will also be accepted at all meetings.

Workshop Provisional Agenda [March 6, Washington, DC (8 a.m.–5:30 p.m.); March 12, Las Vegas, NV (10 a.m.–7 p.m.); March 19, Rosemont, IL (8 a.m.–5:30 p.m.)]

Meet and Greet

Work shop objectives, ground rules, agenda overview

Participant Introductions and Concerns
Regulatory and research framework for cask testing/Questions

Overarching Issues: participant participation

Break

Discussion on General Testing Issues

Lunch on your own

Impact Test Issues

Break

Baltimore Tunnel Fire Presentation

Fire Test Issues: participant discussion

Other Issues

Adjourn

Seminar Provisional Agenda (March 13, Pahump, NV)

NRC Opening remarks and welcome

NRC Activities and Roles for Spent Fuel

Transportation

Introduction of Package Performance Study

Break

Test Protocols Report: impact and fire tests

Wrap up

Adjourn

A World-Wide Web site has been established for dissemination of PPS information and documents to interested members of the public. Electronic copies of the Test Protocols Report and additional information on the public meetings can be obtained at <http://ttd.sandia.gov/nrc/modal.htm>.

Executive Summary of Test Protocols Report

The U.S. Nuclear Regulatory Commission (NRC) believes that current regulations and programs for transporting spent nuclear fuel (SNF)

result in a high degree of safety. The Agency bases this belief largely on the staff's confidence in the shipping casks NRC certifies. Ongoing confirmatory research regarding transportation safety further supports the Agency's belief.

Under the current regulations, NRC requires that SNF casks must be designed and constructed to survive a sequence of tests designed to simulate postulated accidents. These tests include a 30-foot drop onto an unyielding surface and a 30-minute fully engulfing fire. NRC regulations permit certification through testing, analysis, comparison with similar certified designs, or various combinations of these methods.

Typically, the Agency has certified SNF casks using a combination of analyses and testing of scale models or cask components. Previous NRC risk studies have estimated that the Agency's certification standards encompass well over 99 percent of possible transportation accidents.

NRC certification of SNF casks has contributed to an excellent safety record for transporting spent fuel. Further, the characteristics of both fuel and cask systems continue to evolve, and the testing and analytical techniques used in certification applications continue to improve. However, the near-term possibility of a significant increase in the number of spent fuel shipments has focused public attention on the safety of SNF transportation. Despite the excellent record achieved to date and general improvements in cask design and analysis, some stakeholders have voiced concerns regarding transportation safety and the lack of full-scale testing of SNF casks.

NRC believes the safety protection the current transportation regulatory system provides is well-established. NRC's primary role in transportation of spent fuel is certification of the casks used for transport. NRC ensures that shipping casks are robust by regulating their design and construction, by independently confirming the ability of designs to meet the regulations and accident conditions through modeling and analyses, and by overseeing that licensees properly build, use, and maintain the casks. NRC's confidence in casks that it certifies is also supported by ongoing transportation safety research and by the outstanding safety record compiled using NRC-certified casks. Currently, NRC has certified several transportation cask designs that could be used to transport spent fuel, and additional designs are under review.

Package Performance Study

Because of stakeholder concerns and a desire to further validate the computer models used to evaluate the safety of cask transportation, NRC initiated, in 1999, a program known as the Package Performance Study (PPS). Under this ongoing program, the NRC staff is examining the adequacy of the analytical methods and data that are used to estimate the response of transportation casks to those improbable, extreme accidents that might cause radioactive materials to be released to the environment. However, the PPS is not intended to involve the development of new standards for transportation casks.

The NRC staff identified the tasks that are described in this report through two series of public meetings and associated comment periods, during which the staff solicited and discussed the various concerns of citizens, members of the nuclear industry, and governmental organizations. The staff, with contractor support, subsequently rated and summarized those concerns in the "Spent Nuclear Fuel Transportation Package Performance Study Issues Report," NUREG/CR-6768, June 2002, which Sandia National Laboratories (SNL) prepared for NRC. Specifically, on the basis of its review of the public record from both the public meetings and written comments, the NRC staff concluded that the following four tasks would address the primary concerns stakeholders raised:

(1) Use recent accident data to re-analyze the truck and rail accident-speed and fire-duration statistics developed by the Modal Study (Fischer, *et al.*, 1987).

(2) Perform high-speed collision tests on full-scale rail and truck casks¹ and compare the test results with pretest damage predictions developed by computer models.

(3) Expose full-scale rail and truck casks to fully engulfing, long-duration fires and compare the measured cask temperatures with pretest temperature predictions developed by computer models.

(4) Conduct laboratory tests to examine rod failure, pellet fracturing, and the release of particles from the failed rods, and use the test results to determine the response to extreme impacts of fuel pellets, fuel rods, and fuel rods containing fuel pellets.

¹ The "Spent Nuclear Fuel Transportation Package Performance Study Issues Report," NUREG/CR-6768, did not specify the type of transportation cask to be tested; subsequently, NRC has proposed that the PPS test program should involve one rail cask design and one truck cask design.