DRAFT ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT FOR THE PROPOSED RULE AMENDING 10 CFR 73.37 AND 73.72 AND ADDING NEW 10 CFR 73.38 REQUIREMENTS FOR PHYSICAL PROTECTION OF IRRADIATED REACTOR FUEL IN TRANSIT

Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission
October 2010

Introduction and Background

The U.S. Nuclear Regulatory Commission (NRC) has long participated in efforts to address radioactive source protection and security. On June 15, 1979, the NRC published in the *Federal Register* (44 FR 34466) an interim final rule that established its first requirements for the physical protection of irradiated reactor fuel[1] in transit. The interim final rule added 10 CFR 73.37, "Requirements for Physical Protection of Irradiated Reactor Fuel in Transit" to 10 CFR Part 73. After considering public comments, the Commission affirmed the interim final rule on June 3, 1980 (45 FR 37399).

The current 10 CFR 73.37 has changed little since its promulgation in 1980. These regulations require licensees to put in place a physical protection system for spent nuclear fuel (SNF) shipments that meets the following objectives: (1) minimize the possibilities for radiological sabotage of SNF shipments, especially within heavily populated areas and (2) facilitate the location and recovery of SNF shipments that may have come under the control of unauthorized persons. The regulation also provides for: (1) the early detection and assessment of attempts to gain unauthorized access to or control over SNF shipments, (2) the notification to the appropriate response forces of any sabotage events, and (3) the impeding of attempts at radiological sabotage of SNF shipments in heavily populated areas or attempts to illicitly move such shipments into heavily populated areas.

[1] For purposes of this rulemaking, the terms "irradiated reactor fuel" and "spent nuclear fuel" are used interchangeably.

Proposed Action

The NRC is proposing to amend its regulations concerning the security requirements for the shipment of SNF. This proposed rulemaking would establish generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001. The proposed rulemaking would establish the acceptable performance standards and objectives for the protection of SNF shipments from theft, diversion, or radiological sabotage. The proposed amendments would apply to those licensees authorized to possess or transport SNF. The proposed security requirements would address, in part, a 1999 rulemaking petition filed by the State of Nevada (docketed as PRM-73-10) that requests that the NRC initiate rulemaking to strengthen the regulations governing the security of SNF shipments against malevolent acts.

Need for the Proposed Action

Although the current 10 CFR 73.37 has changed little since its promulgation in 1980, there have been significant changes in the threat environment. The terrorist attacks of September 11, 2001, heightened concerns about the use of risk-significant radioactive materials in a malevolent act. After the terrorist attacks of September 11, 2001, the NRC issued a series of security-related orders to specific licensees. In the area of SNF, the orders were issued to licensees who ship or receive SNF and those planning to ship or receive SNF. The orders were issued as immediately effective under NRC's authority to protect the common defense and security under the Atomic Energy Act of 1954, as amended. The requirements put in place by the orders supplement the existing regulatory requirements. These additional security requirements are primarily intended to provide reasonable assurance of preventing the theft, diversion, or sabotage of SNF fuel in transit.

This proposed rulemaking would establish generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001. The proposed rulemaking would also add several new requirements not derived directly from the security order requirements, but developed as a result of insights gained by performing security assessments of potential security vulnerabilities associated with SNF transportation. The proposed requirements would establish acceptable performance objectives for the protection of SNF in transit from theft, diversion, or sabotage. These requirements would ensure that SNF is shipped in a manner that protects the common defense and security and public health and safety.

Specifically, the proposed rule would require the following: (1) armed guards throughout the rail and road route; (2) procedures for normal and contingency responses; (3) the training of personnel; (4) a telemetric position monitoring system or an alternative tracking system for continuous monitoring of SNF shipments by a movement control center; (5) shipment preplanning and coordination with States; (6) constant visual surveillance by armed escort; (7) 2-way redundant communication capabilities; (8) a minimum of 2 weapons for armed guards; (9) additional NRC notifications; (10) armed escort instructions on the use of deadly force; and (11) background investigations of individuals granted unescorted access to SNF. The additional security requirements would provide reasonable assurance that SNF is shipped in a manner that protects the common defense and security and the public health and safety.

In addition, the proposed rulemaking would consider PRM-73-10. The petition requested that the NRC initiate rulemaking to strengthen its regulations governing the physical protection of SNF shipments against sabotage and terrorism. The proposed rulemaking would address, in part, the requests for NRC rulemaking raised by PRM-73-10.

Although a security order is legally binding on the licensee receiving the order, a rule makes requirements generically applicable to all licensees. In addition, rulemaking is an open process that allows for public participation.

The Commission could continue to impose the requirements by issuing orders. In addition, unlike the requirements of a rule, the orders apply only to the licensees named in the orders and would not apply to applicants for new licenses. The continued use of security orders would require the NRC to periodically issue orders to new and amended licenses. It is the NRC policy to implement generally applicable requirements in the form of regulations in order to maintain regulatory efficiencies and effectiveness in its regulatory programs. To make the requirements generally applicable to licensees authorized to possess or transport SNF, and to provide for public review and comment, the additional security requirements for SNF shipments need to be implemented by rulemaking.

The proposed amendments would apply to all NRC licensees that are authorized to possess and transport SNF and, who transport or deliver to a carrier for transport, in a single shipment, a quantity of irradiated reactor fuel in excess of 100 grams (0.22 lbs) in net weight exclusive of cladding or other material, which has a total radiation level in excess of 1 Sv (100 rems) per hour at a distance of .91 meters (3 feet) from any accessible surface without regard to any intervening shielding.

Environmental Impact

This environmental assessment focuses on those aspects of the SNF security rulemaking where there is a potential for the requirements to affect the environment. The principal effect of this action is to revise the governing regulations pertaining to the physical protection requirements for SNF in transit and to make generally applicable security requirements similar to those previously imposed by the post-9/11 orders. The NRC has concluded that there will be no significant radiological environmental impacts associated with implementation of the security rule requirements as the proposed requirements are procedural and administrative in nature.

The implementation of the proposed rule's security requirements would not result in significant changes to the licensees' facilities, nor would such implementation result in any significant increase in radiological effluents released to the environment. The standards and requirements applicable to radiological releases and effluents are not affected by the security rulemaking and continue to apply. Similarly, the implementation of the proposed rule's security requirements would not affect occupational or public exposure requirements.

With regard to potential non-radiological impacts, implementation of the rule requirements does not have a significant impact on the environment. No major construction or other earth disturbing activities, on the part of affected licensees, is anticipated in connection with licensees' implementation of the proposed rule's requirements. In addition, the requirements do not affect any historic site and do not affect non-radiological plant effluents. Therefore, there are no significant non-radiological plant effluents. Therefore, there is no significant non-radiological environmental impact associated with this rule.

Accordingly, the NRC concludes that there is no significant environmental impact associated with the rulemaking action.

Alternatives to the Proposed Action

As an alternative to the proposed action, the NRC staff considered not taking the action to revise the security regulations (i.e., the no-action alternative). Not revising the security regulations would leave the current regulatory system in place. The No-Action Alternative is not expected to result in any significant impact to human health or the environment.

Alternative Use of Resources

There are no irreversible commitments of resources determined in this assessment.

Agencies and Persons Consulted

No agencies or persons outside the NRC were contacted in connection with the preparation of this draft environmental assessment. The NRC has sent a copy of the draft environmental assessment and the proposed rule to every State Liaison Officer and requested their comments on the environmental assessment.

Finding of No Significant Impact

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR Part 51, that the proposed amendments are not a major Federal action significantly affecting the quality of the human environment, and therefore, an environmental impact statement is not required. The proposed amendments would amend the physical protection requirements for SNF in transit. The proposed amendments are procedural and administrative in nature and would have no significant impact on human health or the environment. The NRC, on the basis of this environmental assessment, has made a finding of no significant impact.