

CHAPTER I - NUCLEAR REGULATORY COMMISSION

PART 73 - PHYSICAL PROTECTION OF PLANTS AND MATERIALS

Physical Protection of Irradiated Reactor Fuel in Transit

AGENCY: U.S. Nuclear Regulatory Commission

ACTION: Interim final rule.

SUMMARY: The U.S. Nuclear Regulatory Commission has decided to establish requirements for protection of spent fuel in transit. A recent study suggests that the sabotage of spent fuel shipments has the potential for producing serious radiological consequences in areas of high population density. It will be some time before confirmatory research relative to the estimated consequences resulting from a successful act of sabotage on spent fuel can be completed. In the meantime, the Commission believes that interim requirements for the protection of such shipments should be issued immediately. This rule is subject to reconsideration or revision based on public comments received subsequent to its publication. Concurrently, the NRC is issuing guidance documentation (NUREG-0561) to assist licensees in the implementation of these requirements. The Public is invited to submit its views and comments on both the Rule and the Guidance.

EFFECTIVE DATE: July 16, 1979

DATE: Comment period expires August 17, 1979.

ADDRESSES: Written comments should be submitted to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555,

ATTENTION: Docketing and Service Branch.

790727 0030

422 066

FOR FURTHER INFORMATION CONTACT: Mr. L. J. Evans, Jr., Regulatory Improvements Branch, Division of Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Phone - (301) 427-4181.

SUPPLEMENTARY INFORMATION: The U.S. Nuclear Regulatory Commission is amending 10 CFR 73 of its regulations to provide interim requirements for the protection of spent fuel in transit. This amendment is being published in effective form without benefit of public comment in the interest of the public health and safety.

Previous studies (NUREG-0194, Calculations of Radiological Consequences from Sabotage of Shipping Casks for Spent Fuel and High-Level Waste, February 1977; NUREG-0170, FES on the Transportation of Radioactive Material by Air and Other Modes, December 1977), estimated the health effects of a radiological release in a non-urban area resulting from a high-explosive assault on a spent fuel cask. The estimated risks were not considered so substantive as to warrant regulatory action. A subsequent study by Sandia Laboratories includes a chapter on the sabotage of spent fuel in urban areas of high population density (SAND-77-1927, Transport of Radionuclides in Urban Environs: A Working Draft Assessment). This study suggests that the sabotage of spent fuel shipments has the potential for producing serious radiological consequences in areas of high population density. The Commission has concluded that, in order to protect health and to minimize danger to life and property (Sections 161b and 161i(3) of the Atomic Energy Act of 1954, as amended), it is prudent and desirable to require certain interim safeguards measures for spent fuel shipments. The interim rule would be in effect until the results of confirmatory research are available and analyzed.

The focus of concern is on possible successful acts of sabotage in densely populated urban areas. Because of the possibility that spent fuel shipments could be hijacked and moved from low population areas to high population areas, the interim requirements apply to all shipments even though the planned shipment route may not pass through densely populated urban areas.

Prior to publication of this rule, informal contact was made with the carriers primarily involved in spent fuel shipments as well as with other interested parties, and their comments are known to the staff. It was ascertained that the imposition of these requirements would probably double the cost per mile rate for these shipments for an increase of approximately \$200,000 per year for the estimated 200 annual shipments involved.

Because spent fuel shipments are on-going and the time of sabotage cannot be predicted, the Commission is of the opinion that time is of the essence in this matter, and that health and safety considerations override the necessity for public comment before issuance of an effective rule. Accordingly, the Commission, for good cause, finds that notice and public procedure are unnecessary and contrary to the public interest.

Although this rule is being published in effective form without a prior public comment period, the public is invited to submit its views and comments. After reviewing these views and comments, the Commission may reconsider or modify the interim rule as it deems necessary.

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and sections 552 and 553 of Title 5 of the United States Code, the following amendments to Title 10, Chapter I, Code of Federal Regulations, Part 73, are published as a document subject to codification.

1. Section 73.1 of 10 CFR Part 73 is amended by adding a new paragraph (b)(5) as follows:

§73.1 Purpose and Scope

\* \* \* \* \*

(b)(5) This part also applies to shipments of irradiated reactor fuel of any quantity which has a total external radiation dose rate in excess of 100 rems per hour at a distance of 3 feet from any accessible surface without intervening shielding.

2. A new §73.37 is added to 10 CFR Part 73 to read as follows:

§73.37 Requirements for Physical Protection of Irradiated Reactor Fuel in Transit.

(a) GENERAL REQUIREMENTS - Each licensee who transports or delivers to a carrier for transport irradiated reactor fuel in any amount that is exempt from the requirements of §73.30 through 73.36 in accordance with §73.6 shall make arrangements to assure that:

(1) The Nuclear Regulatory Commission is notified in advance of each shipment in accordance with §73.72 of this Part, and that NRC has approved the route in advance of the shipment,

(2) arrangements have been made with law enforcement agencies along the route of shipments for their response to an emergency or a call for assistance,

(3) the route is planned to avoid, where practicable, heavily populated areas,

(4) the shipment is scheduled where practicable without any intermediate stops except for refueling and obtaining provisions, and that at all stops at least one individual maintains surveillance of the transport vehicle,

800 552

422 069

(5) individuals serving as escorts have successfully completed a training program in accordance with Appendix D of this Part,

(6) procedures for coping with threat and safeguards emergencies have been developed.

(b) SHIPMENTS BY ROAD - For shipments by road, the licensee shall make arrangements to assure that:

(1) Each shipment is accompanied by (i) at least one driver and one escort in the transport vehicle, or (ii) at least one driver in the transport vehicle and two escorts in a separate vehicle,

(2) the transport or separate vehicle is equipped with a radiotelephone and CB radio or approved equal communications equipment and that calls are made at least every 2 hours to a designated location to advise of the status of the shipment,

(3) the transport vehicle is equipped with features that permit immobilization of the cab or the cargo-carrying portion of the vehicle.

(c) SHIPMENTS BY RAIL - For shipments by rail, the licensee shall assure that:

(1) Each shipment is accompanied by at least one escort in the shipment car or in a separate car that will permit observation of the shipment car,

(2) two-way voice communication capability is available and that calls are made at least every 2 hours to a designated location to advise of the status of the shipment,

(3) at least one escort maintains visual surveillance of the shipment car during periods when the train is stopped on sidings or in rail yards.

(d) If it is not possible to avoid heavily populated areas, the Commission may require, depending on individual circumstances of the shipment, additional protective measures.

422 070

(e) A period of 60 days from the effective date of the rule is allowed for the implementation of requirements that involve equipment modification or training.

3. A new Appendix D is added to 10 CFR Part 73 to read as follows:

Appendix D - Physical Protection of Irradiated Reactor Fuel in Transit, Training Program Subject Schedule.

Pursuant to the provision of 73.37 of 10 CFR Part 73, each licensee who transports or delivers to a carrier for transport irradiated reactor fuel is required to assure that individuals used as shipment escorts have completed a training program. The subjects that are to be included in this training program are as follows:

Security Enroute

- Route planning and selection
- Vehicle operation
- Procedures at stops
- Detours and use of alternate routes

Communications

- Equipment operation
- Status reporting
- Contacts with law enforcement units
- Communications discipline
- Procedures for reporting incidents

422 071

Radiological Considerations

- Description of the radioactive cargo
- Function and characteristics of the shipping casks
- Radiation hazards
- Federal, State and local ordinances relative to the shipment of radioactive materials
- Responsible agencies

Response to Contingencies

- Accidents
- Severe weather conditions
- Vehicle breakdown
- Communications problems
- Radioactive "spills"
- Use of special equipment (flares, emergency lighting, etc.)

Response to Threats

- Reporting
- Calling for assistance
- Use of immobilization features
- Hostage situations
- Avoiding suspicious situations.


EFFECTIVE DATE: July 16, 1979

422 072

(Sec. 53, 161b, 161i, Pub. Law 83-703, 68 Stat 930, 948, 949; Sec. 201, Pub. Law 93-438, 88 Stat 1242-1243 (42 U.S.C. 2073, 2201, 5841)).

Dated at Washington, D.C. this 12<sup>th</sup> day of June, 1979.

For the Nuclear Regulatory Commission

  
\_\_\_\_\_  
Samuel J. Chilk  
Secretary of the Commission

422 073