

ATOMIC ENERGY COMMISSION

[10 CFR Part 73]

PHYSICAL PROTECTION OF PLANTS AND
MATERIALS

Physical Protection of Special Nuclear
Material in Transit

In view of the need for increased protection of special nuclear material (SNM) in the interest of the common defense and security, the Atomic Energy Commission is proposing amendments to its regulations in 10 CFR Part 73, "Physical Protection of Plants and Materials," which would provide for an increased level of physical protection for shipments by licensees of special nuclear material of high strategic value. This action is being

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taken in view of the increase in terrorist activities and the general availability of information concerning possible use of special nuclear material as a basis of terrorist activities.

The proposed amendments would apply to shipments of either uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope) uranium-233, or plutonium, or any combination of these materials, which is 5,030 grams or more computed by the formula, $\text{grams} = (\text{grams contained U-235}) + 2.5 (\text{grams U-233} + \text{grams plutonium})$.

The proposed amendments would require that shipment by road be made either in a truck or trailer with special design features to improve cargo security containing at least two armed guards accompanied by a separate escort vehicle with at least two armed guards, or that an armored car be used accompanied by two separate escort vehicles each containing two armed guards (total of six guards) when communication is not always available during the course of the shipment because of inadequate communication range, or that an armored car containing at least two armed guards be used accompanied by one escort vehicle with at least two armed guards when communication coverage is always available during the course of the shipment.

Other proposed changes would require (1) two armed guards to escort all air and sea shipments, (2) five armed guards to escort rail shipments, (3) use of U.S. registered carriers only for air and sea shipments, (4) two armed guards to monitor transfers, (5) seals at all times on cargo compartments of trucks or the outermost container of SNM, (6) open railroad cars only when the shipment weighs 5,000 pounds or more, and (7) submission of a revised plan updating existing transportation plans by licensees who ship at or above 10 CFR 73 threshold quantities and through licensees by carriers who supply transportation services. The Commission is considering alternatives which would discontinue the armored car option and would allow only shipment via specially designed truck with an escort vehicle. Also, alternatives to implement a continuous communication network for truck and rail shipments are being examined. It is expected that these measures could be required early in 1976.

The Commission has decided not to prepare an environmental impact statement for the proposed amendments to 10 CFR Part 73. Concurrently with the publication of this notice of proposed rule making, the Commission is making available in its Public Document Room at 1717 H Street NW., Washington, D.C. its "Environmental Impact Appraisal of Amendments to 10 CFR Part 73, Requirement for the Physical Protection of Strategic Nuclear Materials in Transit".

Pursuant to the Atomic Energy Act of 1954, as amended, and section 553 of title 5 of the United States Code, notice is hereby given that adoption of the following amendments to Title 10, Chapter

1, Code of Federal Regulations, Part 73 is contemplated. All interested persons who wish to submit written comments or suggestions for consideration in connection with the proposed amendments should send them to the Secretary of the Commission, U.S. Atomic Energy Commission, Washington, D.C. 20545, Attention: Docketing and Service Section by December 13, 1974. Copies of Comments on the proposed amendments may be examined at the Commission's Public Document Room at 1717 H Street NW, Washington, D.C.

1. Paragraph (g) is deleted and paragraphs (c) and (e) of § 73.30 are amended to read as follows:

§ 73.30 General requirements.

(c) Special nuclear material shall be shipped in containers which are sealed by tamper indicating type seals. The container shall also be locked if it is not in another container or vehicle which is locked. The outermost container or vehicle shall also be sealed by tamper indicating type seals. Only containers weighing 5,000 pounds or more shall be shipped in open railroad cars. This paragraph does not apply to shipments of quantities specified in § 73.1(b)(3).

(e) By (sixty days after publication) each licensee who has previously submitted a plan to ship quantities of special nuclear material in excess of those specified in § 73.1(b)(2) shall update his plan outlining the procedures that will be used to meet the new requirements of §§ 73.30(c), 73.31(c), 73.32 (b) and (c), 73.33(a), 73.34 (a), (b) and (c), and 73.35 (a) and (b).

2. Paragraph (f) is deleted and paragraph (c) of § 73.31 is amended to read as follows:

§ 73.31 Shipment by road.

(c) A shipment shall be accompanied by at least two guards in the vehicle containing the shipment. The shipment shall be further protected by one of the following methods:

(1) The shipment shall be made in a specially designed truck or trailer which reduces the vulnerability to theft. Design features of the truck or trailer shall permit immobilization of the van and provide barriers or deterrents to physical penetration of the cargo compartment. A separate escort vehicle, with at least two guards shall accompany the shipment. Guards shall maintain continuous vigilance for the presence of conditions or situations which might threaten the security of the shipment; take such action as circumstances might require to avoid interference with continuous safe passage of the cargo vehicle, provide assistance to, or summon aid for crew of cargo vehicles in case of emergency, check seals and locks at each stop where time permits, and observe the cargo vehicle and adjacent areas during stops. The vehicle containing the shipment shall be under continuous visual surveillance by at least two guards during rest stops. Continuous

radio communication capability shall be provided between the cargo vehicle and the escort vehicles. Escort vehicles shall also be equipped with a radiotelephone. The licensee may use his own employees as guards or he may use an agent.

(2) The shipment shall be made in an armored car accompanied by two separate escort vehicles with at least two guards in each vehicle when the ability to communicate by radiotelephone or radio is not always available during the course of the shipment because of inadequate communication range. When communication coverage is always available during the course of the shipment, armored car shipments may be made with only one separate escort vehicle containing at least two guards. The escorts' duties shall be the same as those specified in § 73.31(c)(1).

3. Paragraph (d) is deleted and paragraphs (b) and (c) of § 73.32 are amended to read as follows:

§ 73.32 Shipment by air.

(b) Shipments on cargo aircraft of either uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope), uranium-233 or plutonium, or any combination of these materials which is 5,000 grams or more computed by the formula, $\text{grams} = (\text{grams contained U-235}) + 2.5 (\text{grams U-233} + \text{grams plutonium})$ shall be made only on U.S. registered aircraft and shall be accompanied by two guards. Transfers of these shipments shall be minimized and shall be conducted in accordance with § 73.35.

(c) Export shipments shall be accompanied by two guards from the last terminal in the United States until the shipment is unloaded at a foreign terminal. They shall perform monitoring duties at foreign terminals as described in § 73.35, except that such guards need not be armed at foreign terminals.

4. Paragraph (c) is deleted and paragraph (a) of § 73.33 is amended to read as follows:

§ 73.33 Shipment by rail.

(a) A shipment by rail shall be escorted by five guards, in the shipment car or an escort car of the train, who shall keep the shipment cars under observation and who shall detain at stops when practicable and time permits to guard the shipment cars under observation and check car or container locks and seals. Radiotelephone communication shall be maintained with a licensee or his agent to relay position every 2 hours or less, and at scheduled stops in the event that radiotelephone coverage was not available in the last 5 hours before the stop. The licensee or agent with whom communications shall be maintained for different segments of the shipment shall be predesignated before a shipment is made. In the event no call is received in accordance with these requirements, the licensee or his agent shall immediately notify an appropriate

law enforcement authority and the appropriate Atomic Energy Commission Regulatory Operations Regional Office listed in Appendix A of this part.

5. Paragraph (e) is deleted and paragraphs (a), (b), and (c) of § 73.34 are amended to read as follows:

§ 73.34 Shipment by sea.

(a) Shipments shall be made on American flag vessels making the minimum ports of call. Transfers to and from other modes of transportation shall be in accordance with § 73.35, except that such guards need not be armed at foreign terminals.

(b) Export shipments shall be accompanied by two guards from the last port in the United States until the shipment is unloaded at a foreign port. They shall perform monitoring duties at foreign ports as described in § 73.35, except that such guards need not be armed at foreign terminals.

(c) The shipment shall be placed in a secure compartment which is locked and sealed. Locks and seals shall be periodically inspected in transit, if possible, by the two guards.

6. Paragraph (d) is deleted and paragraphs (a) and (b) of § 73.35 are amended to read as follows:

§ 73.35 Transfer of special nuclear material.

All transfers shall be monitored by two guards. Monitoring of special nuclear material transfers shall be conducted as follows:

(a) At scheduled intermediate stops where special nuclear material is not scheduled for transfer, the guards shall observe the opening of the cargo compartment and assure that the shipment is not removed. The guards shall maintain continuous visual surveillance of the cargo compartment. Continuous visual surveillance of the cargo compartment shall be maintained up to the time the vehicle is ready to depart.

(b) At points where special nuclear material is transferred from vehicle to storage, from one vehicle to another, or from storage to a vehicle, the guards shall keep the shipment under continuous visual surveillance by observing the opening of the cargo compartment of the incoming vehicle and assuring that the shipment is complete by checking locks and/or seals. Continuous visual surveillance of a shipment shall be maintained at all times it is in the terminal or in storage. Shipments shall be preplanned in order to avoid storage times in excess of 24 hours. Continuous visual surveillance of the cargo compartment shall be maintained up to the time the vehicle is ready to depart from the terminal.

(Sec. 161, Pub. L. 85-703, 68 Stat. 948 (42 U.S.C. 2201))

Dated Washington, D.C. the 7th day of November 1974.

For the Atomic Energy Commission.

GORDON M. GRANT,
Assistant Secretary
of the Commission.

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[10 CFR Part 73]

PHYSICAL PROTECTION OF PLANTS AND MATERIALS

Requirements for the Physical Protection of Nuclear Power Reactors

The Atomic Energy Commission has under consideration amendments to its regulations in 10 CFR Part 73, "Physical Protection of Plants and Materials," which, in the interest of the common defense and security and the public health and safety, would identify measures to be taken for the protection of all nuclear power reactors against industrial sabotage. Part 50 of the Commission's regulations now requires licensees to submit physical security plans developed, in part, to protect against sabotage. Guidance as to physical security criteria generally acceptable for the protection of nuclear power reactors against acts of industrial sabotage is provided by Regulatory Guide 1.17, "Protection of Nuclear Power Plants Against Industrial Sabotage," which references ANSI Standard N18.17, "Industrial Security for Nuclear Power Plants."

The proposed amendments to 10 CFR Part 73 would establish in a new § 73.55 specific requirements for nuclear power reactor licensees to establish a physical security organization, to provide access control to and within the nuclear power reactor using qualified and trained guards, and to establish other physical security measures including communications, liaison with local law enforcement authority, and visitor restrictions for non-employees.

The new § 73.55 would apply to persons who are licensed or who apply for a license to operate a nuclear power reactor regardless of the enrichment or type of special nuclear material to be used in the reactor. Such persons who store or possess special nuclear material of certain types, enrichments, and amounts (other than in a reactor core or in irradiated fuel) must also comply with the requirements of 10 CFR 73.50 and 73.60 which deal with the physical protection of special nuclear material. A proposed amendment to § 73.50 of 10 CFR Part 73 would clarify which persons licensed to operate nuclear reactors are required to meet the physical protection requirements of § 73.50.

In addition, an appropriate change would be made to § 73.70, records, to reflect the addition of § 73.55.

If the Commission adopts the proposed amendments to 10 CFR Part 73, each licensee would be given a period of 90 days following the publication in the

FEDERAL REGISTER to submit a physical security plan. In addition, each licensee would be given a period of 180 days after approval of a security plan or amended plan in which to fully implement such plans and comply with the requirements of these rules.

Concurrently with the publication for comments of this notice of proposed rule making, the Commission is making available in its Public Document Room at 1717 H Street NW., Washington, D.C. its "Environmental Impact Appraisal of Proposed Amendments to 10 CFR Part 73, Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors Against Industrial Sabotage." Since the requirements of the proposed rule would not significantly affect the quality of the human environment, the Commission has decided not to prepare an environmental impact statement for the proposed amendments to 10 CFR Part 73.

Pursuant to the Atomic Energy Act of 1954, as amended, and section 553 of Title 5 of the United States Code, notice is hereby given that adoption of the following amendments to 10 CFR Part 73 is contemplated. All interested persons who desire to submit written comments or suggestions with respect to the foregoing, or any other matter pertinent to the subject of this notice, should send them to the Secretary of the Commission, U.S. Atomic Energy Commission, Washington, D.C. 20545, Attention: Docketing and Service Section, by January 13, 1975.

Copies of comments on the proposed amendments may be examined in the Commission's Public Document Room at 1717 H Street NW., Washington, D.C.

PART 73—PHYSICAL PROTECTION OF PLANTS AND MATERIALS

1. The introductory language of § 73.50 is amended to read as follows:

§ 73.50 Requirements for physical protection of licensed activities.

In addition to any other requirements of this part, each licensee who is authorized to operate a fuel reprocessing plant pursuant to Part 50 of this chapter or who possesses or uses uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope), uranium-233, or plutonium alone or in any combination in a quantity of 5,000 grams or more computed by the formula, grams = (grams contained U-235) + 2.5 (grams U-233 + grams plutonium), including licensees who are authorized to operate a nuclear reactor pursuant to Part 50 of this chapter who possess or store such material shall comply with the following requirements. The requirements of this section do not apply to reactor licensees who possess such material only when it is inserted or located in the core of a nuclear reactor and/or who possess or store such material only when it is contained in irradiated fuel elements removed from the reactor core.

2. A new § 73.55 is added to read as follows:

§ 73.55 Requirements for physical protection of licensed activities in nuclear power reactors against industrial sabotage.

Each applicant for a license to operate a nuclear power reactor pursuant to Part 50 of this chapter shall include in the physical security plan required by § 50.34 (c) the information identified in paragraphs (a) through (g) of this section. Each licensee who is authorized to operate a nuclear power reactor licensed pursuant to Part 50 of this chapter shall submit an amended physical security plan describing how the licensee will comply with the following requirements by 180 days after publication of effective rule. The licensee shall implement this plan and comply with the provisions of this physical security section within a period of 180 days from the date of Commission approval of the amended physical security plan.

(a) Physical security organization.

(1) The licensee shall establish a security organization including guards, to protect this facility against industrial sabotage.

(2) At least one supervisor of the security organization shall be on site at all times.

(3) The licensee shall establish, maintain and follow written security procedures which document the structure of the security organization and which detail the duties of guards, watchmen, and other individuals responsible for security.

(4) The licensee shall not permit an individual to act as a guard or watchman unless such individual has been properly trained and qualified and has demonstrated: (i) an understanding of the licensee's security procedures, and (ii) the ability to execute all duties required of him by such procedures. Each guard and watchman shall be requalified at least annually. Such requalification shall be documented.

(b) Physical barriers.

(1) The licensee shall locate vital equipment only within a vital area, which in turn, shall be located within a protected area such that access to vital equipment requires passage through at least two physical barriers. More than one vital area may be located within a single protected area.

(2) The physical barrier at the perimeter of the protected area shall be separated from any other barrier designated as a physical barrier within the protected area, and the intervening space monitored or periodically checked to detect the presence of persons or vehicles so that the facility security organization can respond to suspicious activity or to the breaching of any physical barrier.

(3) An isolation zone shall be maintained around the physical barrier at the perimeter of the protected area and any part of a building used as part of that physical barrier. The isolation zone shall

be monitored to detect the presence of individuals or vehicles within the zone so as to allow response by armed members of the licensee security organization to be initiated at the time of penetration of the protected area. Parking facilities, both for employees and visitors, shall be located outside the isolation zone.

(4) Isolation zones and clear areas between barriers shall be provided with illumination sufficient for the monitoring and observation requirements of paragraphs (b) (2), (b) (3) and (g) (3) of this section.

(5) Windows in walls and doors of the control room as well as the doors themselves, shall provide bullet penetration resistance. In addition, a means shall be provided for quickly locking all doors leading into the control room.

(c) Access requirements.

(1) The licensee shall control all points of personnel and vehicle access into a protected area. Identification and search of all personnel shall be made and authorization shall be checked at such points. At these control points, the search function shall be physically separate from the identification function and shall proceed progressively from the detection of firearms and explosives to identification and admission, if approved. The search shall be conducted either by a physical search or by the use of equipment capable of detecting such devices. During any access control function the individual(s) performing the identification and controlling admittance shall be housed in a suitable structure capable of providing physical protection to the occupants to assure their ability to respond or to summon assistance.

(2) At the point of personnel and vehicle access into a protected area, all hand-carried packages shall be searched for devices such as firearms, explosives, and incendiary devices, or other items which could be used for industrial sabotage.

(3) All packages for delivery into the protected area shall be checked for proper identification and authorization. To the extent practicable all vehicles shall be off loaded outside the protected area. All such cargo shall be checked for items which could be used for sabotage purposes prior to entry into the protected area. If vehicle access into the protected area is required, the vehicle and cargo shall be searched upon entry for explosives and incendiary devices or other items which could be used for industrial sabotage. Either the driver of the vehicle permitted access into the protected area shall possess an AEC personnel security clearance, or the vehicle shall be driven by an employee of the licensee while within the protected area.

(4) A picture badge identification system shall be used for all individuals who are authorized access to protected areas without escort. An individual not employed by the licensee but who requires frequent and extended access to protected and vital areas may be authorized access to such areas without escort provided that he receives a picture badge

upon entrance into the protected area which must be returned upon exit from the protected area and which indicates:

(i) non-employee—no escort required;
(ii) areas to which access is authorized and (iii) the period for which access has been authorized.

(5) Individuals not authorized by the licensee to enter protected areas without escort shall be escorted by a watchman or other individual designated by the licensee, while in a protected area and shall be badged to indicate that an escort is required. In addition, each such individual shall be required to register his name, date, time, purpose of visit, employment affiliation, citizenship, name and badge number of escort, and name of the individual to be visited.

(6) The licensee shall control all points of personnel and vehicle access into vital areas. Access to vital areas shall be permitted for individuals who are authorized access to vital equipment and who require such access to perform their duties. Authorization for access to vital areas for such individuals shall be indicated by a badge identification system. Unoccupied vital areas shall be protected by an active intrusion alarm system.

(7) Access to containment shall be through doors or hatches of substantial construction and installation and shall be locked or otherwise secured to offer penetration resistance and impede both surreptitious and forced entry. Any time frequent access is permitted to containment such as during refueling or major maintenance, positive access control to containment shall be exercised by the licensee, with a guard or watchman.

(8) Appropriate barriers shall be provided to obstruct ready access to vital areas such as the containment by ground vehicles (e.g., trucks). Any time vehicle access is permitted, positive access control shall be exercised by the licensee using guards or watchmen.

(9) Visiting by non-employees within vital areas for the purpose of general familiarization and other non-work-related activities shall not be authorized except for good cause shown to the licensee.

(10) No vehicles used primarily for the conveyance of individuals except designated emergency or security vehicles shall be permitted within a protected area except under emergency conditions.

(11) Keys, locks, combinations and related equipment used to control access to protected and vital areas shall be controlled to reduce to the extent practicable the probability of compromise and promptly changed whenever there is evidence that they may have been compromised.

(d) Detection aids.

(1) All alarms required pursuant to this part shall annunciate in a continuously manned central alarm station located within the protected area and in at least one other continuously manned station, not necessarily on site, such that a single act cannot remove the capability of calling for assistance or

otherwise responding to an alarm. The on site central alarm station shall be considered a vital area. The walls, doors, ceilings and any windows in the walls and/or in the doors shall provide bullet penetration resistance. Where practicable, the on site central alarm station shall be located within a building such that it is not visible from the isolation zone.

(2) All alarms shall be self-checking and tamper indicating. The annunciation of an alarm at the on site central alarm station shall indicate the type of alarm (e.g., intrusion alarm, emergency exit alarm, etc.) and location. All intrusion alarms, emergency exit alarms, alarm systems, and line supervisory systems shall at minimum meet the performance and reliability levels indicated by GSA Interim Federal Specification W-A-00450 B (GSA-FSS).

(3) All emergency exits in each protected area and each vital area shall be alarmed.

(e) *Communication requirements.*

(1) Each guard or watchman on duty shall be capable of maintaining continuous communication with an individual in a continuously manned central alarm station within the protected area who shall be capable of calling for assistance from other guards and watchmen and from local law enforcement authorities.

(2) The alarm stations required by paragraph (d)(1) of this section shall have conventional telephone service for communication with the law enforcement authorities as described in paragraph (e)(1) of this section.

(3) To provide the capability of continuous communication, radio or microwave transmitted two-way voice communication, either directly or through an intermediary shall be established in addition to conventional telephone service, between local law enforcement authorities and the facility and shall terminate in a continuously manned central alarm station within the protected area.

(4) Non-portable communications equipment required by this section shall remain operable from independent power sources in the event of the loss of primary power.

(f) *Testing and maintenance.*

Each licensee shall test and maintain intrusion alarms, emergency alarms, communications equipment, physical barriers, and other security related devices or equipment utilized pursuant to this section as follows:

(1) All alarms, communication equipment, physical barriers, and other security related devices or equipment shall be maintained in operable and effective condition.

(2) Each intrusion alarm shall be functionally tested for operability and required performance at the beginning and end of each interval during which it is used for security, but not less frequently than once every seven (7) days.

(3) Communications equipment required for communications on site shall be tested for operability and performance not less frequently than once at the be-

ginning of each security personnel work shift. Communications equipment required for communications off site shall be tested for operability and performance not less than once a day.

(g) *Response requirement.*

(1) The licensee shall establish liaison with local law enforcement authorities. In developing his physical security plan, the licensee shall take account of the probable size and response time of the local law enforcement authority assistance.

(2) Upon detection of abnormal presence of activity of persons or vehicles within an isolation zone, a protected area, or a vital area, or upon evidence of intrusion into a protected area or vital area, the facility security organization shall (i) determine whether or not a threat exists, (ii) assess the extent of that threat, if any, and (iii) take immediate measures to neutralize the threat, either by appropriate action by facility guards or by calling for assistance from local law enforcement authorities, or both.

(3) To facilitate initial response to detection of penetration of the protected area and assessment of the possible existence of a threat while affording protection of the security organization members who may be responding, a capability of observing the isolation zone and the clear area adjacent to the physical barrier at the perimeter of the protected area shall be provided, preferably by means of closed circuit television, or by other suitable means which limit exposure of responding personnel to possible attack.

3. The prefatory language of § 73.70 is changed to read as follows:

Each licensee subject to the provisions of §§ 73.30 through 73.36 and/or § 73.50 and/or § 73.55 and/or § 73.60 shall keep the following records:

(Sec. 161, Pub. L. 83-703, 68 Stat. 948, Pub. L. 93-377, 88 Stat. 475 (42 U.S.C. 2201))

Dated at Washington, D.C. this 7th day of November 1974.

For The Atomic Energy Commission.

GORDON M. GRANT,
Assistant Secretary
of the Commission.

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