

§ 37.73

(d) The transferor shall keep a copy of the verification documentation as a record for 3 years.

§ 37.73 Applicability of physical protection of category 1 and category 2 quantities of radioactive material during transit.

(a) For shipments of category 1 quantities of radioactive material, each shipping licensee shall comply with the requirements for physical protection contained in §§ 37.75(a) and (e); 37.77; 37.79(a)(1), (b)(1), and (c); and 37.81(a), (c), (e), (g) and (h).

(b) For shipments of category 2 quantities of radioactive material, each shipping licensee shall comply with the requirements for physical protection contained in §§ 37.75(b) through (e); 37.79(a)(2), (a)(3), (b)(2), and (c); and 37.81(b), (d), (f), (g), and (h). For those shipments of category 2 quantities of radioactive material that meet the criteria of § 71.97(b) of this chapter, the shipping licensee shall also comply with the advance notification provisions of § 71.97 of this chapter.

(c) The shipping licensee shall be responsible for meeting the requirements of this subpart unless the receiving licensee has agreed in writing to arrange for the in-transit physical protection required under this subpart.

(d) Each licensee that imports or exports category 1 quantities of radioactive material shall comply with the requirements for physical protection during transit contained in §§ 37.75(a)(2) and (e); 37.77; 37.79(a)(1), (b)(1), and (c); and 37.81(a), (c), (e), (g), and (h) for the domestic portion of the shipment.

(e) Each licensee that imports or exports category 2 quantities of radioactive material shall comply with the requirements for physical protection during transit contained in §§ 37.79(a)(2), (a)(3), and (b)(2); and 37.81(b), (d), (f), (g), and (h) for the domestic portion of the shipment.

§ 37.75 Preplanning and coordination of shipment of category 1 or category 2 quantities of radioactive material.

(a) Each licensee that plans to transport, or deliver to a carrier for transport, licensed material that is a category 1 quantity of radioactive material outside the confines of the licens-

10 CFR Ch. I (1-1-14 Edition)

ee's facility or other place of use or storage shall:

(1) Preplan and coordinate shipment arrival and departure times with the receiving licensee;

(2) Preplan and coordinate shipment information with the governor or the governor's designee of any State through which the shipment will pass to:

(i) Discuss the State's intention to provide law enforcement escorts; and

(ii) Identify safe havens; and

(3) Document the preplanning and coordination activities.

(b) Each licensee that plans to transport, or deliver to a carrier for transport, licensed material that is a category 2 quantity of radioactive material outside the confines of the licensee's facility or other place of use or storage shall coordinate the shipment no-later-than arrival time and the expected shipment arrival with the receiving licensee. The licensee shall document the coordination activities.

(c) Each licensee who receives a shipment of a category 2 quantity of radioactive material shall confirm receipt of the shipment with the originator. If the shipment has not arrived by the no-later-than arrival time, the receiving licensee shall notify the originator.

(d) Each licensee, who transports or plans to transport a shipment of a category 2 quantity of radioactive material, and determines that the shipment will arrive after the no-later-than arrival time provided pursuant to paragraph (b) of this section, shall promptly notify the receiving licensee of the new no-later-than arrival time.

(e) The licensee shall retain a copy of the documentation for preplanning and coordination and any revision thereof, as a record for 3 years.

§ 37.77 Advance notification of shipment of category 1 quantities of radioactive material.

As specified in paragraphs (a) and (b) of this section, each licensee shall provide advance notification to the NRC and the governor of a State, or the governor's designee, of the shipment of licensed material in a category 1 quantity, through or across the boundary of the State, before the transport, or delivery to a carrier for transport of the

Nuclear Regulatory Commission

§ 37.77

licensed material outside the confines of the licensee's facility or other place of use or storage.

(a) *Procedures for submitting advance notification.* (1) The notification must be made to the NRC and to the office of each appropriate governor or governor's designee. The contact information, including telephone and mailing addresses, of governors and governors' designees, is available on the NRC's Web site at <http://nrc-stp.ornl.gov/special/designee.pdf>. A list of the contact information is also available upon request from the Director, Division of Intergovernmental Liaison and Rulemaking, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Notifications to the NRC must be to the NRC's Director, Division of Security Policy, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. The notification to the NRC may be made by email to RAMQC_SHIPMENTS@nrc.gov or by fax to 301-816-5151.

(2) A notification delivered by mail must be postmarked at least 7 days before transport of the shipment commences at the shipping facility.

(3) A notification delivered by any means other than mail must reach NRC at least 4 days before the transport of the shipment commences and must reach the office of the governor or the governor's designee at least 4 days before transport of a shipment within or through the State.

(b) *Information to be furnished in advance notification of shipment.* Each advance notification of shipment of category 1 quantities of radioactive material must contain the following information, if available at the time of notification:

(1) The name, address, and telephone number of the shipper, carrier, and receiver of the category 1 radioactive material;

(2) The license numbers of the shipper and receiver;

(3) A description of the radioactive material contained in the shipment, including the radionuclides and quantity;

(4) The point of origin of the shipment and the estimated time and date that shipment will commence;

(5) The estimated time and date that the shipment is expected to enter each State along the route;

(6) The estimated time and date of arrival of the shipment at the destination; and

(7) A point of contact, with a telephone number, for current shipment information.

(c) *Revision notice.* (1) The licensee shall provide any information not previously available at the time of the initial notification, as soon as the information becomes available but not later than commencement of the shipment, to the governor of the State or the governor's designee and to the NRC's Director of Nuclear Security, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

(2) A licensee shall promptly notify the governor of the State or the governor's designee of any changes to the information provided in accordance with paragraphs (b) and (c)(1) of this section. The licensee shall also immediately notify the NRC's Director, Division of Security Policy, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001 of any such changes.

(d) *Cancellation notice.* Each licensee who cancels a shipment for which advance notification has been sent shall send a cancellation notice to the governor of each State or to the governor's designee previously notified and to the NRC's Director, Division of Security Policy, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. The licensee shall send the cancellation notice before the shipment would have commenced or as soon thereafter as possible. The licensee shall state in the notice that it is a cancellation and identify the advance notification that is being cancelled.

(e) *Records.* The licensee shall retain a copy of the advance notification and any revision and cancellation notices as a record for 3 years.

§ 37.79

10 CFR Ch. I (1–1–14 Edition)

(f) *Protection of information.* State officials, State employees, and other individuals, whether or not licensees of the Commission or an Agreement State, who receive schedule information of the kind specified in § 37.77(b) shall protect that information against unauthorized disclosure as specified in § 73.21 of this chapter.

[78 FR 17007, Mar. 19, 2013; 78 FR 31821, May 28, 2013]

§ 37.79 Requirements for physical protection of category 1 and category 2 quantities of radioactive material during shipment.

(a) *Shipments by road.* (1) Each licensee who transports, or delivers to a carrier for transport, in a single shipment, a category 1 quantity of radioactive material shall:

(i) Ensure that movement control centers are established that maintain position information from a remote location. These control centers must monitor shipments 24 hours a day, 7 days a week, and have the ability to communicate immediately, in an emergency, with the appropriate law enforcement agencies.

(ii) Ensure that redundant communications are established that allow the transport to contact the escort vehicle (when used) and movement control center at all times. Redundant communications may not be subject to the same interference factors as the primary communication.

(iii) Ensure that shipments are continuously and actively monitored by a telemetric position monitoring system or an alternative tracking system reporting to a movement control center. A movement control center must provide positive confirmation of the location, status, and control over the shipment. The movement control center must be prepared to promptly implement preplanned procedures in response to deviations from the authorized route or a notification of actual, attempted, or suspicious activities related to the theft, loss, or diversion of a shipment. These procedures will include, but not be limited to, the identification of and contact information for the appropriate LLEA along the shipment route.

(iv) Provide an individual to accompany the driver for those highway shipments with a driving time period greater than the maximum number of allowable hours of service in a 24-hour duty day as established by the Department of Transportation Federal Motor Carrier Safety Administration. The accompanying individual may be another driver.

(v) Develop written normal and contingency procedures to address:

(A) Notifications to the communication center and law enforcement agencies;

(B) Communication protocols. Communication protocols must include a strategy for the use of authentication codes and duress codes and provisions for refueling or other stops, detours, and locations where communication is expected to be temporarily lost;

(C) Loss of communications; and

(D) Responses to an actual or attempted theft or diversion of a shipment.

(vi) Each licensee who makes arrangements for the shipment of category 1 quantities of radioactive material shall ensure that drivers, accompanying personnel, and movement control center personnel have access to the normal and contingency procedures.

(2) Each licensee that transports category 2 quantities of radioactive material shall maintain constant control and/or surveillance during transit and have the capability for immediate communication to summon appropriate response or assistance.

(3) Each licensee who delivers to a carrier for transport, in a single shipment, a category 2 quantity of radioactive material shall:

(i) Use carriers that have established package tracking systems. An established package tracking system is a documented, proven, and reliable system routinely used to transport objects of value. In order for a package tracking system to maintain constant control and/or surveillance, the package tracking system must allow the shipper or transporter to identify when and where the package was last and when it should arrive at the next point of control.

Nuclear Regulatory Commission

Pt. 37, App. A

by the licensee pertaining to its receipt, possession, use, acquisition, import, export, or transfer of category 1 or category 2 quantities of radioactive material.

§ 37.107 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

- (1) The Atomic Energy Act of 1954, as amended;
- (2) Title II of the Energy Reorganization Act of 1974, as amended; or
- (3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

- (1) For violations of—
 - (i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;
 - (ii) Section 206 of the Energy Reorganization Act;
 - (iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;
 - (iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under Section 186 of the Atomic Energy Act of 1954, as amended.

§ 37.109 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in this part 37 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in this part 37 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§ 37.1, 37.3, 37.5, 37.7, 37.9, 37.11, 37.13, 37.107, and 37.109.

APPENDIX A TO PART 37—CATEGORY 1 AND CATEGORY 2 RADIOACTIVE MATERIALS

TABLE 1—CATEGORY 1 AND CATEGORY 2 THRESHOLD

The terabecquerel (TBq) values are the regulatory standard. The curie (Ci) values specified are obtained by converting from the TBq value. The curie values are provided for practical usefulness only.

Radioactive material	Category 1 (TBq)	Category 1 (Ci)	Category 2 (TBq)	Category 2 (Ci)
Americium-241	60	1,620	0.6	16.2
Americium-241/Be	60	1,620	0.6	16.2
Californium-252	20	540	0.2	5.40
Cobalt-60	30	810	0.3	8.10
Curium-244	50	1,350	0.5	13.5
Cesium-137	100	2,700	1	27.0
Gadolinium-153	1,000	27,000	10	270
Iridium-192	80	2,160	0.8	21.6
Plutonium-238	60	1,620	0.6	16.2
Plutonium-239/Be	60	1,620	0.6	16.2
Promethium-147	40,000	1,080,000	400	10,800
Radium-226	40	1,080	0.4	10.8
Selenium-75	200	5,400	2	54.0
Strontium-90	1,000	27,000	10	270
Thulium-170	20,000	540,000	200	5,400
Ytterbium-169	300	8,100	3	81.0

NOTE: *Calculations Concerning Multiple Sources or Multiple Radionuclides*

The "sum of fractions" methodology for evaluating combinations of multiple sources or multiple radionuclides is to be used in determining whether a location meets or ex-

ceeds the threshold and is thus subject to the requirements of this part.

I. If multiple sources of the same radionuclide and/or multiple radionuclides are aggregated at a location, the sum of the ratios of the total activity of each of the radionuclides must be determined to verify

whether the activity at the location is less than the category 1 or category 2 thresholds of Table 1, as appropriate. If the calculated sum of the ratios, using the equation below, is greater than or equal to 1.0, then the applicable requirements of this part apply.

II. First determine the total activity for each radionuclide from Table 1. This is done by adding the activity of each individual source, material in any device, and any loose or bulk material that contains the radionuclide. Then use the equation below to calculate the sum of the ratios by inserting the total activity of the applicable radionuclides

from Table 1 in the numerator of the equation and the corresponding threshold activity from Table 1 in the denominator of the equation. Calculations must be performed in metric values (i.e., TBq) and the numerator and denominator values must be in the same units.

R_1 = total activity for radionuclide 1

R_2 = total activity for radionuclide 2

R_N = total activity for radionuclide n

AR_1 = activity threshold for radionuclide 1

AR_2 = activity threshold for radionuclide 2

AR_N = activity threshold for radionuclide n

$$\sum_{i=1}^n \left[\frac{R_1}{AR_1} + \frac{R_2}{AR_2} + \frac{R_n}{AR_n} \right] \geq 1.0$$

PART 39—LICENSES AND RADIATION SAFETY REQUIREMENTS FOR WELL LOGGING

Subpart A—General Provisions

Sec.

39.1 Purpose and scope.

39.2 Definitions.

39.5 Interpretations.

39.8 Information collection requirements: OMB approval.

Subpart B—Specific Licensing Requirements

39.11 Application for a specific license.

39.13 Specific licenses for well logging.

39.15 Agreement with well owner or operator.

39.17 Request for written statements.

Subpart C—Equipment

39.31 Labels, security, and transportation precautions.

39.33 Radiation detection instruments.

39.35 Leak testing of sealed sources.

39.37 Physical inventory.

39.39 Records of material use.

39.41 Design and performance criteria for sources.

39.43 Inspection, maintenance, and opening of a source or source holder.

39.45 Subsurface tracer studies.

39.47 Radioactive markers.

39.49 Uranium sinker bars.

39.51 Use of a sealed source in a well without surface casing.

39.53 Energy compensation source.

39.55 Tritium neutron generator target sources.

Subpart D—Radiation Safety Requirements

39.61 Training.

39.63 Operating and emergency procedures.

39.65 Personnel monitoring.

39.67 Radiation surveys.

39.69 Radioactive contamination control.

Subpart E—Security, Records, Notifications

39.71 Security.

39.73 Documents and records required at field stations.

39.75 Documents and records required at temporary jobsites.

39.77 Notification of incidents and lost sources; abandonment procedures for irretrievable sources.

Subpart F—Exemptions

39.91 Applications for exemptions.

Subpart G—Enforcement

39.101 Violations.

39.103 Criminal penalties.

AUTHORITY: Atomic Energy Act secs. 53, 57, 62, 63, 65, 69, 81, 82, 161, 181, 182, 183, 186, 223, 234 (42 U.S.C. 2073, 2077, 2092, 2093, 2095, 2099, 2111, 2112, 2201, 2231, 2232, 2233, 2236, 2273, 2282); Energy Reorganization Act secs. 201, 202, 206 (42 U.S.C. 5841, 5842, 5846); Government Paperwork Elimination Act sec. 1704 (44 U.S.C. 3504 note).

SOURCE: 52 FR 8234, Mar. 17, 1987, unless otherwise noted.

Nuclear Regulatory Commission

§ 71.97

(iv) The failure mode, mechanism, and effect of each failed component, if known;

(v) A list of systems or secondary functions that were also affected for failures of components with multiple functions;

(vi) The method of discovery of each component or system failure or procedural error;

(vii) For each human performance-related root cause, a discussion of the cause(s) and circumstances;

(viii) The manufacturer and model number (or other identification) of each component that failed during the event; and

(ix) For events occurring during use of a packaging, the quantities and chemical and physical form(s) of the package contents.

(3) An assessment of the safety consequences and implications of the event. This assessment must include the availability of other systems or components that could have performed the same function as the components and systems that failed during the event.

(4) A description of any corrective actions planned as a result of the event, including the means employed to repair any defects, and actions taken to reduce the probability of similar events occurring in the future.

(5) Reference to any previous similar events involving the same packaging that are known to the licensee or certificate holder.

(6) The name and telephone number of a person within the licensee's organization who is knowledgeable about the event and can provide additional information.

(7) The extent of exposure of individuals to radiation or to radioactive materials without identification of individuals by name.

(d) *Report legibility.* The reports submitted by licensees and/or certificate holders under this section must be of sufficient quality to permit reproduction and micrographic processing.

[69 FR 3796, Jan. 26, 2004, as amended at 75 FR 73945, Nov. 30, 2010]

§ 71.97 Advance notification of shipment of irradiated reactor fuel and nuclear waste.

(a)(1) As specified in paragraphs (b), (c), and (d) of this section, each licensee shall provide advance notification to the governor of a State, or the governor's designee, of the shipment of licensed material, within or across the boundary of the State, before the transport, or delivery to a carrier, for transport, of licensed material outside the confines of the licensee's plant or other place of use or storage.

(2) As specified in paragraphs (b), (c), and (d) of this section, after June 11, 2013, each licensee shall provide advance notification to the Tribal official of participating Tribes referenced in paragraph (c)(3)(iii) of this section, or the official's designee, of the shipment of licensed material, within or across the boundary of the Tribe's reservation, before the transport, or delivery to a carrier, for transport, of licensed material outside the confines of the licensee's plant or other place of use or storage.

(b) Advance notification is also required under this section for the shipment of licensed material, other than irradiated fuel, meeting the following three conditions:

(1) The licensed material is required by this part to be in Type B packaging for transportation;

(2) The licensed material is being transported to or across a State boundary en route to a disposal facility or to a collection point for transport to a disposal facility; and

(3) The quantity of licensed material in a single package exceeds the least of the following:

(i) 3000 times the A_1 value of the radionuclides as specified in appendix A, Table A-1 for special form radioactive material;

(ii) 3000 times the A_2 value of the radionuclides as specified in appendix A, Table A-1 for normal form radioactive material; or

(iii) 1000 TBq (27,000 Ci).

(c) *Procedures for submitting advance notification.* (1) The notification must be made in writing to:

(i) The office of each appropriate governor or governor's designee;

(ii) The office of each appropriate Tribal official or Tribal official's designee; and

(iii) The Director, Division of Security Policy, Office of Nuclear Security and Incident Response.

(2) A notification delivered by mail must be postmarked at least 7 days before the beginning of the 7-day period during which departure of the shipment is estimated to occur.

(3) A notification delivered by any other means than mail must reach the office of the governor or of the governor's designee or the Tribal official or Tribal official's designee at least 4 days before the beginning of the 7-day period during which departure of the shipment is estimated to occur.

(i) A list of the names and mailing addresses of the governors' designees receiving advance notification of transportation of nuclear waste was published in the FEDERAL REGISTER on June 30, 1995 (60 FR 34306).

(ii) The list of governor's designees and Tribal official's designees of participating Tribes will be published annually in the FEDERAL REGISTER on or about June 30th to reflect any changes in information.

(iii) A list of the names and mailing addresses of the governors' designees and Tribal officials' designees of participating Tribes is available on request from the Director, Division of Intergovernmental Liaison and Rule-making, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

(4) The licensee shall retain a copy of the notification as a record for 3 years.

(d) *Information to be furnished in advance notification of shipment.* Each advance notification of shipment of irradiated reactor fuel or nuclear waste must contain the following information:

(1) The name, address, and telephone number of the shipper, carrier, and receiver of the irradiated reactor fuel or nuclear waste shipment;

(2) A description of the irradiated reactor fuel or nuclear waste contained in the shipment, as specified in the regulations of DOT in 49 CFR 172.202 and 172.203(d);

(3) The point of origin of the shipment and the 7-day period during which departure of the shipment is estimated to occur;

(4) The 7-day period during which arrival of the shipment at State boundaries or Tribal reservation boundaries is estimated to occur;

(5) The destination of the shipment, and the 7-day period during which arrival of the shipment is estimated to occur; and

(6) A point of contact, with a telephone number, for current shipment information.

(e) *Revision notice.* A licensee who finds that schedule information previously furnished to a governor or governor's designee or a Tribal official or Tribal official's designee, in accordance with this section, will not be met, shall telephone a responsible individual in the office of the governor of the State or of the governor's designee or the Tribal official or the Tribal official's designee and inform that individual of the extent of the delay beyond the schedule originally reported. The licensee shall maintain a record of the name of the individual contacted for 3 years.

(f) *Cancellation notice.* (1) Each licensee who cancels an irradiated reactor fuel or nuclear waste shipment for which advance notification has been sent shall send a cancellation notice to the governor of each State or to the governor's designee previously notified, each Tribal official or to the Tribal official's designee previously notified, and to the Director, Division of Security Policy, Office of Nuclear Security and Incident Response.

(2) The licensee shall state in the notice that it is a cancellation and identify the advance notification that is being canceled. The licensee shall retain a copy of the notice as a record for 3 years.

[60 FR 50264, Sept. 28, 1995, as amended at 67 FR 3586, Jan. 25, 2002; 68 FR 14529, Mar. 26, 2003; 68 FR 23575, May 5, 2003; 68 FR 58818, Oct. 10, 2003; 74 FR 62683, Dec. 1, 2009; 75 FR 73945, Nov. 30, 2010; 77 FR 34204, June 11, 2012; 78 FR 17021, Mar. 19, 2013]

the event such a shipment fails to arrive at its destination at the estimated time, or in the case of an export shipment, the licensee who exported the shipment, shall immediately notify by telephone and telegraph or teletype, the Director, Division of Security Policy, Office of Nuclear Security and Incident Response, and the licensee or other person who delivered the material to a carrier for transport. The licensee who made the physical protection arrangements shall also immediately notify by telephone and telegraph, or teletype, the Director, Division of Security Policy, Office of Nuclear Security and Incident Response of the action being taken to trace the shipment.

(c) Each licensee who makes arrangements for physical protection of a shipment of formula quantities of strategic special nuclear material as required by §§ 73.25 and 73.26 shall immediately conduct a trace investigation of any shipment that is lost or unaccounted for after the estimated arrival time and file a report with the Commission as specified in § 73.71.

[44 FR 68192, Nov. 28, 1979, as amended at 67 FR 3586, Jan. 25, 2002; 68 FR 14530, Mar. 26, 2003; 68 FR 23575, May 5, 2003; 74 FR 62684, Dec. 1, 2009]

§ 73.28 Security background checks for secure transfer of nuclear materials.

Licensees are excepted from the security background check provisions in Section 170I of the AEA if they have not received Orders from the Nuclear Regulatory Commission containing requirements for background checks for trustworthiness and reliability that include fingerprinting and criminal history record checks as a prerequisite for unescorted access to radioactive materials.

[72 FR 3027, Jan. 24, 2007]

§ 73.35 Requirements for physical protection of irradiated reactor fuel (100 grams or less) in transit.

Each licensee who transports, or delivers to a carrier for transport, in a single shipment, a quantity of irradiated reactor fuel weighing 100 grams (0.22 pounds) or less in net weight of irradiated fuel, exclusive of cladding or

other structural or packaging material, which has a total external radiation dose rate in excess of 1 Gray (100 rad) per hour at a distance of 1 meter (3.3 feet) from any accessible surface without intervening shielding, shall follow the physical protection requirements for category 1 quantities of radioactive material in subpart D of part 37 of this chapter.

[78 FR 17021, Mar. 19, 2013]

§ 73.37 Requirements for physical protection of irradiated reactor fuel in transit.

(a) *Performance objectives.* (1) Each licensee who transports, or delivers to a carrier for transport, in a single shipment, a quantity of irradiated reactor fuel¹ in excess of 100 grams (0.22 lbs) in net weight of irradiated fuel, exclusive of cladding or other structural or packaging material, which has a total external radiation dose rate in excess of 1 Gy (100 rad) per hour at a distance of 1 meter (3.3 feet) from any accessible surface without intervening shielding, shall establish and maintain, or make arrangements for, and assure the proper implementation of, a physical protection system for shipments of such material that will achieve the following objectives:

(i) Minimize the potential for theft, diversion, or radiological sabotage of spent nuclear fuel shipments; and

(ii) Facilitate the location and recovery of spent nuclear fuel shipments that may have come under the control of unauthorized persons.

(2) To achieve these objectives, the physical protection system shall:

(i) Provide for early detection and assessment of attempts to gain unauthorized access to, or control over, spent nuclear fuel shipments;

(ii) Delay and impede attempts at theft, diversion, or radiological sabotage of spent nuclear fuel shipments; and

(iii) Provide for notification to the appropriate response forces of any attempts at theft, diversion, or radiological sabotage of a spent nuclear fuel shipment.

¹For purposes of 10 CFR 73.37, the terms “irradiated reactor fuel” and “spent nuclear fuel” are used interchangeably.

§ 73.37

10 CFR Ch. I (1–1–14 Edition)

(b) *General requirements.* To achieve the performance objectives of paragraph (a) of this section, a physical protection system established and maintained, or arranged for, by the licensee shall include the following elements:

(1) *Preplan and coordinate spent nuclear fuel shipments.* Each licensee shall:

(i) Ensure that each armed escort, as defined in § 73.2, is instructed on the use of force sufficient to counter the force directed at the person, including the use of deadly force when the armed escort has a reasonable belief that the use of deadly force is necessary in self-defense or in the defense of others, or any other circumstances, as authorized by applicable Federal and State laws. This deadly force training requirement does not apply to members of local law enforcement agencies (LLEAs) performing escort duties for spent nuclear fuel shipments.

(ii) Preplan and coordinate shipment itineraries to ensure that the receiver at the final delivery point is present to accept the shipment.

(iii) Ensure written certification of any transfer of custody.

(iv) Preplan and coordinate shipment information no later than 2 weeks prior to the shipment or prior to the first shipment of a series of shipments with the governor of a State, or the governor's designee, of a shipment of spent nuclear fuel through or across the boundary of the State, in order to:

(A) Minimize intermediate stops and delays;

(B) Arrange for State law enforcement escorts;

(C) Arrange for positional information sharing when requested; and

(D) Develop route information, including the identification of safe havens.

(v) Arrange with local law enforcement authorities along the shipment route, including U.S. ports where vessels carrying spent nuclear fuel shipments are docked, for their response to a security-related emergency or a call for assistance.

(vi) Preplan and coordinate with the NRC to obtain advance approval of the routes used for road and rail shipments of spent nuclear fuel, and of any U.S. ports where vessels carrying spent nu-

clear fuel shipments are scheduled to stop. In addition to the requirements of this section, routes used for shipping spent nuclear fuel shall comply with the applicable requirements of the DOT regulations in Title 49 of the *Code of Federal Regulations* (49 CFR), in particular those identified in § 71.5 of this chapter. The advance approval application shall provide:

(A) For road shipments, the route shall include locations of safe havens that have been coordinated with the appropriate State(s).

(B) The NRC approval shall be obtained prior to the 10-day advance notification requirement in § 73.72 of this part.

(C) Information to be supplied to the NRC shall include, but is not limited to, the following:

(1) Shipper, consignee, carriers, transfer points, modes of shipment; and

(2) A statement of shipment security arrangements, including, if applicable, points where armed escorts transfer responsibility for the shipment.

(vii) Document the preplanning and coordination activities.

(viii) Ensure the protection of Safeguards Information relative to spent nuclear fuel in transit in accordance with §§ 73.21 and 73.22 of this part, especially the information described in § 73.22(a)(2), which would include, at a minimum, the protection of the following information:

(A) The preplanning and coordination activities;

(B) Transportation physical security plan;

(C) Schedules and itineraries for specific spent nuclear fuel shipments until the information is no longer controlled as Safeguards Information, that is until at least 10 days after the shipment has entered or originated within the state; or for the case of a shipment in a series of shipments whose schedules are related, a statement that schedule information must be protected until 10 days after the last shipment in the series has entered or originated within the state and an estimate of the date on which the last shipment in the series will enter or originate within the state;

Nuclear Regulatory Commission

§ 73.37

(D) Vehicle immobilization features, intrusion alarm devices, and communications;

(E) Arrangements with and capabilities of local police response forces, and locations of safe havens identified along the transportation route;

(F) Limitations of communications during transport;

(G) Procedures for response to security contingency events;

(H) Information concerning the tactics and capabilities required to defend against attempted sabotage, or theft and diversion of irradiated reactor fuel, or related information; and

(I) Engineering or safety analyses, security-related procedures or scenarios and other information related to the protection of the transported material if the unauthorized disclosure of such analyses, procedures, scenarios, or other information could reasonably be expected to have a significant adverse effect on the health and safety of the public or the common defense and security by significantly increasing the likelihood of theft, diversion, or sabotage of spent nuclear fuel in transit.

(2) *Advance notifications.* Prior to the shipment of spent nuclear fuel moving through or across the boundary of any State, outside the confines of the licensee's facility or other place of use or storage, a licensee subject to this section shall provide notification to the NRC, under § 73.72 of this part, and the governor of the State(s), or the governor's designee(s), of the spent nuclear fuel shipment. After June 11, 2013, the compliance date of the Tribal notification final rule, a licensee subject to this section shall notify the Tribal official or Tribal official's designee of each participating Tribe referenced in § 71.97(c)(3) of this chapter prior to the transport of spent fuel within or across the Tribal reservation. Contact information for each State, including telephone and mailing addresses of governors and governors' designees, and participating Tribes, including telephone and mailing addresses of Tribal officials and Tribal official's designees, is available on the NRC Web site at: <http://nrc-stp.ornl.gov/special/designee.pdf>. A list of the contact information is also available upon request from the Director, Division of Intergovern-

mental Liaison and Rulemaking, U.S. Nuclear Regulatory Commission, Washington, DC 20555. The licensee shall comply with the following criteria in regard to each notification:

(i) *Procedures for submitting advance notification.* (A) The notification must be in writing and sent to the office of each appropriate governor or the governor's designee and each appropriate Tribal official or the Tribal official's designee.

(B) A notification delivered by mail must be postmarked at least 10 days before transport of a shipment within or through the State or Tribal reservation.

(C) A notification delivered by any other method must reach the office of the governor or the governor's designee and any Tribal official or Tribal official's designee at least 7 days before transport of a shipment within or through the State.

(ii) *Information to be furnished in advance notification of shipment.* The notification must include the following information:

(A) The name, address, and telephone number of the shipper, carrier and receiver of the shipment and the license number of the shipper and receiver;

(B) A description of the shipment as specified by DOT in 49 CFR 172.202 and 172.203(d); and

(C) A listing of the routes to be used within the State or Tribal reservation.

(iii) *Separate enclosure.* The licensee shall provide the following information, under § 73.22(f)(1), in a separate enclosure to the written notification:

(A) The estimated date and time of departure from the point of origin of the shipment;

(B) The estimated date and time of entry into the State or Tribal reservation;

(C) The estimated date and time of arrival of the shipment at the destination;

(D) For the case of a single shipment whose schedule is not related to the schedule of any subsequent shipment, a statement that schedule information must be protected under the provisions of §§ 73.21 and 73.22 until at least 10 days after the shipment has entered or originated within the State or Tribal reservation; and

§ 73.37

10 CFR Ch. I (1-1-14 Edition)

(E) For the case of a shipment in a series of shipments whose schedules are related, a statement that schedule information must be protected under the provisions of §§ 73.21 and 73.22 of this part until 10 days after the last shipment in the series has entered or originated within the State or Tribal reservation, and an estimate of the date on which the last shipment in the series will enter or originate within the State or Tribal reservation.

(iv) *Revision notice.* A licensee shall notify by telephone a responsible individual in the office of the governor or in the office of the governor's designee and the office of the Tribal official or in the office of the Tribal official's designee of any schedule change that differs by more than 6 hours from the schedule information previously furnished under paragraph (b)(2)(iii) of this section, and shall inform that individual of the number of hours of advance or delay relative to the written schedule information previously furnished.

(v) *Cancellation notice.* Each licensee who cancels a shipment for which advance notification has been sent shall send a cancellation notice to the governor or to the governor's designee of each State previously notified, each Tribal official or the Tribal official's designee previously notified, and to the NRC's Director, Division of Security Policy, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555. The licensee shall state in the notice that it is a cancellation and identify the advance notification that is being canceled.

(vi) *Records.* The licensee shall retain a copy of the preplanning and coordination activities, advance notification, and any revision or cancellation notice as a record for 3 years under § 73.70 of this part.

(3) *Transportation physical protection program.* (i) The transportation physical protection program established under paragraph (a)(1) of this section shall include armed escorts to protect spent nuclear fuel shipments and a movement control center, as defined in § 73.2 of this part, staffed and equipped to monitor and control spent nuclear fuel shipments, to communicate with

local law enforcement authorities, and to respond to safeguards contingencies.

(ii) The movement control center must be staffed continuously by at least one individual who will actively monitor the progress of the spent nuclear fuel shipment and who has the authority to coordinate the physical protection activities.

(iii) The movement control center personnel must monitor the shipment continuously, *i.e.*, 24-hours per day, from the time the shipment commences, or if delivered to a carrier for transport, from the time of delivery of the shipment to the carrier, until safe delivery of the shipment at its final destination, and must immediately notify the appropriate agencies in the event of a safeguards event under the provisions of § 73.71 of this part.

(iv) The movement control center personnel and the armed escorts must maintain a written log for each spent nuclear fuel shipment, which will include information describing the shipment and significant events that occur during the shipment. The log must be available for review by authorized NRC personnel for a period of at least 3 years following completion of the shipment.

(v) The licensee shall develop, maintain, revise and implement written transportation physical protection procedures which address the following:

(A) Access controls to ensure no unauthorized persons have access to the shipment and Safeguards Information;

(B) Roles and responsibilities of the movement control center personnel, drivers, armed escorts and other individuals relative to the security of the shipment;

(C) Reporting of safeguards events under § 73.71 of this part;

(D) Communications protocols that include a strategy for the use of authentication and duress codes, the management of refueling or other stops, detours, and the loss of communications, temporarily or otherwise; and

(E) Normal conditions operating procedures.

(vi) The licensee shall retain as a record the transportation physical protection procedures for 3 years after the

close of period for which the licensee possesses the spent nuclear fuel.

(vii) The transportation physical protection program shall:

(A) Provide that escorts (other than members of local law enforcement agencies serving as armed escorts, or ship's officers serving as unarmed escorts) have successfully completed the training required by appendix D of this part, including the equivalent of the weapons training and qualifications program required of guards, as described in sections III and IV of appendix B of this part, to assure that each such individual is fully qualified to use the assigned weapons;

(B) Provide that shipment escorts communicate with the movement control center at random intervals, not to exceed 2 hours, to advise of the status of the shipment for road and rail shipments, and for sea shipments while shipment vessels are docked at U.S. ports; and

(C) Provide that at least one armed escort remains alert at all times, maintains constant visual surveillance of the shipment, and periodically reports to the movement control center at regular intervals not to exceed 30 minutes during periods when the shipment vehicle is stopped, or the shipment vessel is docked.

(4) *Contingency and response procedures.* (i) In addition to the procedures established under paragraph (b)(3)(v) of this section, the licensee shall establish, maintain, and follow written contingency and response procedures to address threats, thefts, and radiological sabotage related to spent nuclear fuel in transit.

(ii) The licensee shall ensure that personnel associated with the shipment shall be appropriately trained regarding contingency and response procedures.

(iii) The licensee shall retain the contingency and response procedures as a record for 3 years after the close of period for which the licensee possesses the spent nuclear fuel.

(iv) The contingency and response procedures must direct that, upon detection of the abnormal presence of unauthorized persons, vehicles, or vessels in the vicinity of a spent nuclear fuel shipment or upon detection of a delib-

erately induced situation that has the potential for damaging a spent nuclear fuel shipment, the armed escort will:

(A) Determine whether or not a threat exists;

(B) Assess the extent of the threat, if any;

(C) Implement the procedures developed under paragraph (b)(4)(i) of this section;

(D) Take the necessary steps to delay or impede threats, thefts, or radiological sabotage of spent nuclear fuel; and

(E) Inform local law enforcement agencies of the threat and request assistance without delay, but not to exceed 15 minutes after discovery.

(c) *Shipments by road.* In addition to the provisions of paragraph (b) of this section, the physical protection system for any portion of a spent nuclear fuel shipment by road shall provide that:

(1) The transport vehicle is:

(i) Occupied by at least two individuals, one of whom serves as an armed escort, and escorted by an armed member of the local law enforcement agency in a mobile unit of such agency; or

(ii) Led by a separate vehicle occupied by at least one armed escort, and trailed by a third vehicle occupied by at least one armed escort.

(2) As permitted by law, all armed escorts are equipped with a minimum of two weapons. This requirement does not apply to local law enforcement agency personnel who are performing escort duties.

(3) The transport vehicle and each escort vehicle are equipped with redundant communication abilities that provide 2-way communications between the transport vehicle, the escort vehicle(s), the movement control center, local law enforcement agencies, and one another. To ensure that 2-way communication is possible at all times, alternate communications should not be subject to the same failure modes as the primary communication.

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

(5) The transport vehicle driver has been familiarized with, and is capable

§ 73.37

10 CFR Ch. I (1-1-14 Edition)

of implementing, transport vehicle immobilization, communications, and other security procedures.

(6) Shipments are continuously and actively monitored by a telemetric position monitoring system or an alternative tracking system reporting to a movement control center. A movement control center shall provide positive confirmation of the location, status, and control over the shipment. The movement control center shall implement preplanned procedures in response to deviations from the authorized route or a notification of actual, attempted, or suspicious activities related to the theft, loss, diversion, or radiological sabotage of a shipment. These procedures shall include, but not be limited to, the identification of and contact information for the appropriate local law enforcement agency along the shipment route.

(d) *Shipments by rail.* In addition to the provisions of paragraph (b) of this section, the physical protection system for any portion of a spent nuclear fuel shipment by rail shall provide that:

(1) A shipment car is accompanied by two armed escorts (who may be members of a local law enforcement agency), at least one of whom is stationed at a location on the train that will permit observation of the shipment car while in motion.

(2) As permitted by law, all armed escorts are equipped with a minimum of two weapons. This requirement does not apply to local law enforcement agency personnel who are performing escort duties.

(3) The train operator(s) and each escort are equipped with redundant communication abilities that provide 2-way communications between the transport, the escort vehicle(s), the movement control center, local law enforcement agencies, and one another. To ensure that 2-way communication is possible at all times, alternate communications should not be subject to the same failure modes as the primary communication.

(4) Rail shipments are monitored by a telemetric position monitoring system or an alternative tracking system reporting to the licensee, third-party, or railroad movement control center. The movement control center shall provide

positive confirmation of the location of the shipment and its status. The movement control center shall implement preplanned procedures in response to deviations from the authorized route or to a notification of actual, attempted, or suspicious activities related to the theft, diversion, or radiological sabotage of a shipment. These procedures shall include, but not be limited to, the identification of and contact information for the appropriate local law enforcement agency along the shipment route.

(e) *Shipments by U.S. waters.* In addition to the provisions of paragraph (b) of this section, the physical protection system for any portion of a spent nuclear fuel shipment traveling on U.S. waters shall provide that:

(1) A shipment vessel while docked at a U.S. port is protected by:

(i) Two armed escorts stationed on board the shipment vessel, or stationed on the dock at a location that will permit observation of the shipment vessel; or

(ii) A member of a local law enforcement agency, equipped with normal local law enforcement agency radio communications, who is stationed on board the shipment vessel, or on the dock at a location that will permit observation of the shipment vessel.

(2) As permitted by law, all armed escorts are equipped with a minimum of two weapons. This requirement does not apply to local law enforcement agency personnel who are performing escort duties.

(3) A shipment vessel while within U.S. territorial waters shall be accompanied by an individual, who may be an officer of the shipment vessel's crew, who will assure that the shipment is unloaded only as authorized by the licensee.

(4) Each armed escort is equipped with redundant communication abilities that provide 2-way communications between the vessel, the movement control center, local law enforcement agencies, and one another. To ensure that 2-way communication is possible at all times, alternate communications should not be subject to the same failure modes as the primary communication.

(f) *Investigations.* Each licensee who makes arrangements for the shipment of spent nuclear fuel shall immediately conduct an investigation, in coordination with the receiving licensee, of any shipment that is lost or unaccounted for after the designated no-later-than arrival time in the advance notification.

(g) State officials, State employees, Tribal officials, Tribal employees, and other individuals, whether or not licensees of the NRC, who receive information of the kind specified in paragraph (b)(2)(iii) of this section and any other Safeguards Information as defined in § 73.22(a) of this part shall protect that information against unauthorized disclosure as specified in §§ 73.21 and 73.22 of this part.

[78 FR 29550, May 20, 2013]

§ 73.38 Personnel access authorization requirements for irradiated reactor fuel in transit.

(a) *General.* (1) Each licensee who transports, or delivers to a carrier for transport, in a single shipment, a quantity of spent nuclear fuel as described in § 73.37(a)(1) of this part shall comply with the requirements of this section, as appropriate, before any spent nuclear fuel is transported or delivered to a carrier for transport.

(2) Each licensee shall establish, implement, and maintain its access authorization program under the requirements of this section.

(i) Each licensee shall be responsible for the continuing effectiveness of the access authorization program.

(ii) Each licensee shall ensure that the access authorization program is reviewed at an appropriate frequency to confirm compliance with the requirements of this section and that prompt comprehensive actions are taken to correct any noncompliance that is identified.

(iii) The review shall evaluate all program performance objectives and requirements.

(iv) Each review report must document conditions that are adverse to the proper performance of the access authorization program, the cause of the condition(s), and when appropriate, recommended corrective actions, and corrective actions taken. The licensee

shall review the audit findings and take any additional corrective actions necessary to preclude repetition of the condition, including reassessment of the deficient areas where indicated.

(3) By August 19, 2013, each licensee that is subject to this provision shall implement the requirements of this section through revisions to its physical security plan or transportation security plan.

(b) *General performance objective.* The licensee's access authorization program must ensure that the individuals specified in paragraph (c) of this section are trustworthy and reliable such that they do not constitute an unreasonable risk to public health and safety or the common defense and security.

(c) *Applicability.* (1) Licensees shall subject the following individuals to an access authorization program:

(i) Any individual to whom a licensee intends to grant unescorted access to spent nuclear fuel in transit, including employees of a contractor or vendor;

(ii) Any individual whose duties and responsibilities permit the individual to take actions by physical or electronic means that could adversely impact the safety, security, or emergency response to spent nuclear fuel in transit (*i.e.*, movement control personnel, vehicle drivers, or other individuals accompanying spent nuclear fuel shipments);

(iii) Any individual whose duties and responsibilities include implementing a licensee's physical protection program under § 73.37, including but not limited to, non-LLEA armed escorts;

(iv) Any individual whose assigned duties and responsibilities provide access to spent nuclear fuel shipment information that is considered to be Safeguards Information under § 73.22(a)(2); and

(v) The licensee access authorization program reviewing official.

(2) Fingerprinting, and the identification and criminal history records checks required by Section 149 of the Atomic Energy Act of 1954, as amended, and other elements of the background investigation are not required for the following individuals prior to granting access authorization relative to spent nuclear fuel in transit: