

Title:	Number:	Revision
Transportation Security Plan For [Company Name] (US Focus)	[Identifying Number]	
		Effective Date:

1. Scope

- 1.1. Federal regulations require all shippers and carriers of certain highly hazardous materials to develop and implement transportation security plans (TSP), including risk assessments. This TSP is intended to meet the requirements in Title 49 CFR 172.800 and 33 CFR for enhancing the security of radioactive and other hazardous materials transported in commerce and to define [Company Name]’s method of compliance with U.S. Nuclear Regulatory Commission Title 10 Part 37 Sub-part D regulation. [COMPANY NAME] routinely conducts Class 7 radioactive material shipments, including Category 1 and 2 quantities of radioactive materials.
- 1.2. When [COMPANY NAME] shipments of radioactive materials originate from outside the US, [COMPANY NAME] will implement transportation security measures compatible with those required by the country of origin. When a country of origin does not have a regulatory scheme in place for the security of radioactive materials in transit, [COMPANY NAME] will implement security measures that, at a minimum, meet the implementation guidance identified in the International Atomic Energy Agency’s (IAEA) Nuclear Security Series, No. 9, Security in the Transport of Radioactive Material. Existing [COMPANY NAME] operating procedures may be used to implement these requirements outside of the United States.
- 1.3. The key elements of the TSP are as follows:
 - 1.3.1. Identify and Prioritize Security Risks
 - 1.3.1.1. Assess the potential risks from the transportation of highly hazardous materials as identified in 49 CFR 172.800.
 - 1.3.1.2. Respond to risks with positive and well considered actions to prevent theft, diversion, or sabotage of hazardous material by individuals or groups.
 - 1.3.2. Access Control
 - 1.3.2.1. Address the possibility that unauthorized persons may attempt to gain access to hazardous materials or transport vehicles being prepared for transportation.
 - 1.3.3. Personnel Security
 - 1.3.3.1. Confirm information provided by employees and conduct background investigations for those employees whose work assignment involve access to, or handling of, the hazardous materials covered by the plan.

Title:	Number:	Revision
Transportation Security Plan For [Company Name] (US Focus)	[Identifying Number]	
		Effective Date:

1.3.4. En Route Security

- 1.3.4.1. Address threats to the safety of the hazardous material during preparation for shipment, en route transportation, and storage incidental to movement.
- 1.3.4.2. Address emergency response communications and activities.

- 1.4. This TSP is in addition to requirements by federal agencies (e.g., Nuclear Regulatory Commission [NRC]) and associated commitments made for the physical security of the facility used by [COMPANY NAME] to store hazardous materials when not in transit. Portions of the [Company Name]’s facility security plan may be used to ensure onsite personnel security, unauthorized access, and en route security.
- 1.5. This TSP applies to all facilities within the same company. Facility-specific addendums may be added based on any security risks specific to that facility.
- 1.6. The receipt of hazardous materials by [COMPANY NAME] or the recipient is not a part of this TSP.

2. Responsibilities

- 2.1. Senior Manager/Executive – has the overall responsibility of the [COMPANY NAME] Security Program.
- 2.2. Radiation Safety Officer – acts as the [COMPANY NAME] liaison to federal and state agencies and local law enforcement; ensures the plan is reviewed on an annual basis.
- 2.3. Operations Manager – ensures equipment related to physical security systems is maintained at an operational level and implementation procedures are up to date; ensures employees working under this plan have the appropriate training and level of access.
- 2.4. Employee – Each employee that is involved in the preparation for and the shipment of hazardous material must take appropriate actions to preclude the unauthorized use, theft, or sabotage of hazardous material in transport.
- 2.5. Company Driver – Each driver is responsible for detection, identifying risks, and reporting and mitigating actions if hazardous material is stolen or released to the environment.
- 2.6. Carrier – Each transportation carrier is responsible for having a TSP which addresses transportation security considerations from the moment of arrival of hazardous material onsite, throughout the hazardous material acceptance process, during transportation, and during storage incidental to transport. The carrier is also responsible for implementing regulations for commercial driver licenses hazardous

Title:	Number:	Revision
Transportation Security Plan For [Company Name] (US Focus)	[Identifying Number]	
		Effective Date:

material endorsements. (Note: This responsibility applies to both contract carriers and Company carriers.)

3. Definitions

3.1. Category 1 and 2 quantities of the radioisotopes shipped by [COMPANY NAME] coincide with the values in table below. A complete list of isotopes is provided in Appendix 1 of this Security Plan.

Radionuclides	Category 1		Category 2	
	Terabecquerels (TBq)	Curies (Ci ¹)	Terabecquerels (TBq)	Curies (Ci ¹)
Include Company Specific Radionuclides	(Insert values for those radionuclides shipped by the Company)			
1	The regulatory standard values are given in terabecquerels. Curie values are provided for practical usefulness only and are rounded after conversion.			

3.2. Highway Route Control Quantities (HRCQ) – means a quantity within a single package which exceeds 3000 times the A1 value for special form or 3000 times the A2 value for normal form or 1000 TBq (27,000 Ci), whichever is the least.

3.3. Local law enforcement agency (LLEA) means a public or private organization that has been approved by a federal, state, or local government to carry firearms, make arrests, and is authorized and has the capability to provide an armed response in the jurisdiction where the licensed category 1 or category 2 quantity of radioactive material is used, stored, or transported.

3.4. Lost or missing licensed material means licensed material whose location is unknown. It includes material that has been shipped but has not reached its destination and whose location cannot be readily traced in the transportation system.

3.5. Movement control center means a location that is remote from transport activity and maintains position information on the movement of radioactive material, receives reports of attempted attacks or thefts, provides a means for reporting these and other problems to appropriate agencies, and can request and coordinate appropriate aid.

3.6. No-later-than arrival time means the date and time that the shipping licensee and receiving licensee have established as the time at which an investigation will be initiated if the shipment has not arrived at the receiving facility. The no-later-than-arrival time may not be more than 6 hours after the estimated arrival time for shipments of category 2 quantities of radioactive material.

Title:	Number:	Revision
Transportation Security Plan For [Company Name] (US Focus)	[Identifying Number]	
		Effective Date:

- 3.7. Safe haven means a readily recognizable and readily accessible site at which security is present or from which, in the event of an emergency, the transport crew can notify and wait for LLEA.
- 3.8. Telemetric position monitoring system means a data transfer system that captures information by instrumentation and/or measuring devices about the location and status of a transport vehicle or package between the departure and destination locations.
- 3.9. Trustworthiness and reliability are characteristics of an individual considered dependable in judgment, character, and performance, such that unescorted access to category 1 or category 2 quantities of radioactive material by that individual does not constitute an unreasonable risk to the public health and safety or security. A determination of trustworthiness and reliability for this purpose is based upon the results from a background investigation.

4. Transportation Security Risk Assessment

- 4.1. A Transportation Security Risk Assessment has been developed to evaluate and manage the risks associated with transportation of hazardous materials. Revisions to the risk assessment model and subsequent risk assessments will be accomplished when a new task that introduces a different risk is identified.
- 4.2. In some instances, [COMPANY NAME] will be responsible for ensuring the physical protection requirements of incoming shipments are met; for example, imports of Co-60 sources or bulk Co-60 shipments.
- 4.3. The table below describes the types of radioactive shipments originating from the [COMPANY NAME] facility, as well as shipments that originate from off-site locations where [COMPANY NAME] is the shipper.

Risk Analysis Specific to Radioactive Material Shipments					
Product	Description	Typical Activity	Package Type	Risk	Security Plan Required

Title:	Number:	Revision
Transportation Security Plan For [Company Name] (US Focus)	[Identifying Number]	
		Effective Date:

List Company specific products

5. Transportation Contracts

- 5.1. [CARRIER NAME(s)] is (are) the primary carrier(s) utilized by [COMPANY NAME] to transport radioactive materials below Category 2 levels from the [COMPANY NAME] facility.
- 5.2. Category 2 quantities of radioactive material shipped from the [COMPANY NAME] facility is typically transported by common freight carrier, such as FedEx Freight, that has established package tracking systems.
- 5.3. Category 1 quantities of radioactive material are typically transported by [CARRIER NAME(s)] but may be transported by any carrier that provides written confirmation that their security measures comply with those required by Title 10 Code of Federal Regulations Part 37 Subpart D.

6. Training

- 6.1. Each shipper and transporter of highly hazardous materials—as defined in 49 CFR 172.800—is required to develop, implement, and update the following minimum transportation security training to hazmat employees:
 - 6.1.1. Security Awareness Training module; and
 - 6.1.2. In-Depth Transportation Security Training module (which will include the Transportation Security Plan).
- 6.2. Both training modules will supplement the existing hazmat employee training program consistent with the intent of and frequency specified in 49 CFR 172.704. Requalification training will be provided at the same frequency as other hazmat employee training.
- 6.3. Employees that will be assigned duties that require 49 CFR 172 Subpart H training must receive this training within 90 days of employment or prior to driving or accompanying a Category 1 or 2 shipment.

Title:	Number:	Revision
Transportation Security Plan For [Company Name] (US Focus)	[Identifying Number]	
		Effective Date:

7. License Verification

- 7.1. Prior to transferring a Category 1 quantity of radioactive material, [COMPANY NAME] will verify with the NRC’s license verification system or the license issuing authority that the transferee’s license authorizes the receipt of the type, form, and quantity of radioactive material to be transferred and that the licensee is authorized to receive radioactive material at the location requested for delivery. If verification is conducted by contacting the license issuing authority, [COMPANY NAME] will document the verification.
- 7.2. Prior to transferring a Category 2 quantity of radioactive material, [COMPANY NAME] will verify with the NRC’s license verification system or the license issuing authority that the transferee’s license authorizes the receipt of the type, form, and quantity of radioactive material to be transferred. If the verification is conducted by contacting the license issuing authority, [COMPANY NAME] will document the verification.
- 7.3. [COMPANY NAME] will maintain documentation of the verification for a period of at least 3 years from the date verification was made.

8. Preplanning and Coordination

- 8.1. Prior to shipping a Category 1 quantity of radioactive material, [COMPANY NAME] will:
 - 8.1.1. Preplan and coordinate shipment arrival and departure times with the receiving licensee.
 - 8.1.2. Preplan and coordinate shipment information with the governor or the governor’s designee of any state or country through which the shipment will pass to:
 - 8.1.2.1. Discuss the state’s or country’s intention to provide law enforcement escorts; and
 - 8.1.2.2. Identify safe havens; and
 - 8.1.2.3. Document the preplanning and coordination activities.
- 8.2. Prior to shipping a Category 2 quantity of radioactive material, [COMPANY NAME] will coordinate the shipment no-later-than arrival time and the expected shipment arrival with the receiving licensee. [COMPANY NAME] will document the coordination activities.
 - 8.2.1. If during the transport of category 2 quantity of radioactive material, [COMPANY NAME] determines that the shipment will arrive after the

Title:	Number:	Revision
Transportation Security Plan For [Company Name] (US Focus)	[Identifying Number]	
		Effective Date:

coordinated no-later-than arrival time [COMPANY NAME] will promptly notify the receiving licensee of the new no-later-than arrival time.

- 8.3. [COMPANY NAME] will retain a copy of the documentation for preplanning and coordination and any revision thereof, as a record for 3 years.
- 8.4. When [COMPANY NAME] receives a Category 2 quantity of radioactive material from an NRC or Agreement State licensee, [COMPANY NAME] will confirm receipt of the shipment with the originating licensee. [COMPANY NAME] will notify the originating licensee if the shipment has not arrived by the no-later-than arrival time.

9. Advance Notification of Category 1 Quantity Shipments

- 9.1. [COMPANY NAME] will 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 states before the transports or delivery to a carrier for transport.
- 9.2. [COMPANY NAME] will notify the NRC and the office of each appropriate governor or governor's designee. Contact information, including telephone and mailing addresses, of governors and governors’ designees, is available on the NRC website at <http://nrc-stp.ornl.gov/special/designee.pdf> .
- 9.3. The notification to the NRC may be made via e-mail to RAMQC_SHIPMENTS@nrc.gov or HOO.HOC@nrc.gov or by fax to (301) 816-5151.
- 9.4. [COMPANY NAME] will deliver notifications via email or fax at least 4 days before the transport of the shipment commences.
- 9.5. Notifications made by mail are not the preferred method of notification; if necessary, notifications will be postmarked at least 7 days prior to commencing the shipment.
- 9.6. Each advance notification of shipment of category 1 quantities of radioactive material must contain the following information, if available at the time of notification:
 - 9.6.1. The name, address, and telephone number of the shipper, carrier, and receiver of the category 1 radioactive material;
 - 9.6.2. The license numbers of the shipper and receiver;
 - 9.6.3. A description of the radioactive material contained in the shipment, including the radionuclides and quantity;
 - 9.6.4. The point of origin of the shipment and the estimated time and date that shipment will commence;

Title:	Number:	Revision
Transportation Security Plan For [Company Name] (US Focus)	[Identifying Number]	
		Effective Date:

- 9.6.5. The estimated time and date that the shipment is expected to enter each state along the route;
- 9.6.6. A point of contacts with a telephone numbers for current shipment information.
- 9.7. [COMPANY NAME] will 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.
- 9.8. [COMPANY NAME] will provide any changes to the information previously provided in accordance with the procedure described above promptly to the governor of the state or the governor’s designee and the NRC’s Director, Division of Security Policy, Office of Nuclear Security and Incident Response.
- 9.9. [COMPANY NAME] will send a notice of cancelation 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 if a shipment for which advance notification has been sent is canceled.
 - 9.9.1. [COMPANY NAME] will send the cancellation notice before the shipment would have commenced or as soon thereafter as possible.
 - 9.9.2. [COMPANY NAME] will state in the notice that it is a cancellation and identify the advance notification that is being cancelled.
- 9.10. [COMPANY NAME] will retain a copy of the advance notification and any revision and cancellation notices as a record for 3 years.
- 9.11. [COMPANY NAME] will mark documents pertaining to the transport of category 1 quantities of radioactive materials as “Official Use Only – Security Related Information” and will control these documents as such.
- 9.12. Import and Export Notifications will be made in accordance with 10 CFR §110.50

10. Physical Protection of Category 1 and 2 Quantities of Radioactive Material During Shipments by Road

- 10.1. [COMPANY NAME] will establish a movement control center that maintains position information from a remote location for Category 1 shipments transported by the [COMPANY NAME].
 - 10.1.1. The [COMPANY NAME] movement control center will monitor shipments 24 hours a day, 7 days a week

Title:	Number:	Revision
Transportation Security Plan For [Company Name] (US Focus)	[Identifying Number]	
		Effective Date:

- 10.1.2. The [COMPANY NAME] control center will have the ability to communicate immediately in an emergency with the appropriate LLEA.
- 10.1.3. When a third-party carrier is used, the movement control center will be manned by the third-party carrier.
- 10.2. The carrier will establish redundant communications, not subject to the same interference factors as the primary communication, that allows the transport to contact the escort vehicle (when used) and movement control center at all times.
- 10.3. The carrier transport vehicle will be continuously and actively monitored by a telemetric position monitoring system or an alternative tracking system reporting to a movement control center to maintain positive confirmation of the location, status, and control over the shipment.
- 10.4. The [COMPANY NAME] movement control center will 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 contact information for the appropriate LLEA along the shipment route and identified safe havens.
- 10.5. The carrier will 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.
- 10.6. [COMPANY NAME] will use escorts when required by state or foreign country regulation or contractual agreement.
- 10.7. [COMPANY NAME] will develop written normal and contingency procedures to address:
 - 10.7.1. Notifications to the communication center and LLEA;
 - 10.7.2. Communication protocols with a strategy for using authentication and duress codes and provisions for refueling or other stops, detours, and locations where communication is expected to be temporarily lost;
 - 10.7.3. Loss of communications; and
 - 10.7.4. Responses to an actual or attempted theft or diversion of a shipment.
- 10.8. [COMPANY NAME] shall ensure that drivers, accompanying personnel, and movement control center personnel have access to the normal and contingency procedures for the shipment of category 1 quantities of radioactive materials.

Title:	Number:	Revision
Transportation Security Plan For [Company Name] (US Focus)	[Identifying Number]	
		Effective Date:

- 10.9. When transporting category 2 quantities of radioactive material, [Carrier] will maintain constant control and/or surveillance during transit and maintain a capability for immediate communication to summon appropriate response or assistance.
- 10.10. When [COMPANY NAME] delivers a category 2 quantity of radioactive material to a carrier for transport in a single shipment, [COMPANY NAME] will:
 - 10.10.1. 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. 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.
 - 10.10.2. Use carriers that maintain constant control and/or surveillance during transit and have the capability for immediate communication to summon appropriate response or assistance; and
 - 10.10.3. Use carriers that have established tracking systems that require an authorized signature prior to releasing the package for delivery or return.

11. Imports and Exports of Category 1 and 2 Quantities of Radioactive Materials

- 11.1. [COMPANY NAME] will implement physical protection controls described in this TSP to meet the requirements of 10 CFR Part 37 Subpart D during the domestic portion of transit. During the portion of the shipment conducted outside of the United States, [COMPANY NAME] will implement physical protection controls during transit as required by the foreign country regulations or, as a minimum, equivalent to those described in IAEA NSS No. 9 when foreign transport security regulations do not exist.

12. Shipments by Rail

- 12.1. [COMPANY NAME] when shipping category 1 or category 2 quantities of radioactive material by rail, the requirements of §37.79 (b) shall be implemented prior to the first shipment.

13. Investigations

- 13.1. [COMPANY NAME] will immediately investigate upon the discovery that a category 1 shipment is lost or missing.
- 13.2. [COMPANY NAME] will immediately investigate, in coordination with the receiving licensee, of any Category 2 shipment that has not arrived by the designated no-later-than arrival time.

Title:	Number:	Revision
Transportation Security Plan For [Company Name] (US Focus)	[Identifying Number]	
		Effective Date:

14. Reporting of Events

- 14.1. [COMPANY NAME] will notify the appropriate LLEA and the NRC Operations Center within 1 hour of determining that a shipment of category 1 quantities of radioactive material is lost or missing.
 - 14.1.1. The appropriate LLEA is the agency in the area of the shipment’s last confirmed location.
 - 14.1.2. During the investigation required by Section 13, [COMPANY NAME] will coordinate with and provide agreed upon updates to the NRC Operations Center on the status of the investigation.
- 14.2. [COMPANY NAME] will notify the NRC Operations Center within 4 hours of its determination that a shipment of category 2 quantities of radioactive material is lost or missing. If after 24 hours the radioactive material has not been located and secured, [COMPANY NAME] will immediately notify the NRC Operations Center.
- 14.3. [COMPANY NAME] will notify the designated LLEA along the shipment route as soon as possible upon discovery of suspicious activities or an actual or attempted theft or diversion of a shipment of a category 1 quantity of radioactive material.
 - 14.3.1. As soon as possible after notifying the LLEA, [COMPANY NAME] will notify the NRC Operations Center.
- 14.4. [COMPANY NAME] will notify the NRC Operations Center as soon as possible upon discovery of suspicious activity or an actual or attempted theft or diversion of a shipment of a category 2 quantity of radioactive material.
- 14.5. [COMPANY NAME] will notify the NRC Operations Center and the LLEA as soon as possible upon recovery of any lost or missing category 1 quantities of radioactive material.
- 14.6. [COMPANY NAME] will notify the NRC Operations Center as soon as possible upon recovery of any lost or missing category 2 quantities of radioactive material.
- 14.7. [COMPANY NAME] will submit a written report within 30 days of making the initial telephonic notification required by paragraphs 14.1 through 14.4. The report must be submitted using a method described in §37.7. In addition, [COMPANY NAME] will provide one copy of the written report addressed to the Director, Division of Security Policy, Office of Nuclear Security and Incident Response. The report must set forth the following information:
 - 14.7.1. A description of the licensed material involved, including kind, quantity, and chemical and physical form;
 - 14.7.2. A description of the circumstances under which the loss or theft occurred;

Title:	Number:	Revision
Transportation Security Plan For [Company Name] (US Focus)	[Identifying Number]	
		Effective Date:

- 14.7.3. A statement of disposition, or probable disposition, of the licensed material involved;
- 14.7.4. Actions that have been taken, or will be taken, to recover the material; and
- 14.7.5. Procedures or measures that have been, or will be, adopted to ensure against a recurrence of the loss or theft of licensed material.
- 14.7.6. After filing the written report, the licensee shall also report any additional substantive information on the loss or theft within 30 days after the licensee learns of such information.
- 14.8. [COMPANY NAME] shall notify other governmental agencies, including Agreement State regulatory bodies of events as required by Agreement State regulations, contractual obligations, or as agreed upon during the preplanning and coordination process. Additional notification requirements will be documented on [implementing document(s)].

Title:	Number:	Revision
Transportation Security Plan For [Company Name] (US Focus)	[Identifying Number]	
		Effective Date:

Appendix 1 – Category 1 and Category 2 Threshold				
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