

**U.S. Department of Energy**  
Washington, D.C.

**ORDER**

DOE 5610.12

7-26-94

SUBJECT: PACKAGING AND OFFSITE TRANSPORTATION OF NUCLEAR COMPONENTS, AND SPECIAL ASSEMBLIES ASSOCIATED WITH THE NUCLEAR EXPLOSIVE AND WEAPON SAFETY PROGRAM

1. PURPOSE. Establish the Department of Energy (DOE) policy, requirements, objectives, authorities, procedures, and responsibilities for the safe packaging and offsite transportation of nuclear components, and special assemblies associated with the nuclear weapons program requiring the use of the Transportation Safeguards System. This Order is part of the DOE 5610-series which implements the DOE Nuclear Explosive and Weapon Safety Program conducted in the interest of national security or in support of mutual defense treaty obligations and agreements.
2. CANCELLATION. DOE 5610.1, PACKAGING AND TRANSPORTING OF NUCLEAR EXPLOSIVES, NUCLEAR COMPONENTS, AND SPECIAL ASSEMBLIES, of 9-11-79.
3. SCOPE. Except for the exclusion in paragraph 5, the provisions of this Order apply to all Departmental Elements, including DOE management and operating contractors, their subcontractors, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, and Sandia National Laboratories, supporting the nuclear weapons program activities.
4. APPLICABILITY. This Order applies to the packaging and offsite transportation in the Transportation Safeguards System of nuclear components, and special assemblies made by or under the direction or supervision of the Office of Defense Programs and which are required to be escorted by Federal Officers or personnel designated by or under the authority of DOE, pursuant to Section 161k of the United States Atomic Energy Act of 1954, as amended. Shipments transported under this Order are limited to nuclear components, special assemblies associated with the DOE Nuclear Explosive and Weapon Safety Program and other materials specifically designated by the Manager, Albuquerque Operations Office, which, by law, require the application of the Transportation Safeguards System.
5. EXCLUSIONS. The provisions of this Order do not apply to the following:
  - a. DOE facilities, projects, and programs which operate under license from the Nuclear Regulatory Commission (NRC).
  - b. Packaging and transportation of radioactive or other hazardous materials for shipment, conducted pursuant to DOE 1540.3A and 5480.3.
  - c. Air shipments of plutonium (which are governed by Public Law 94-187 and 10 CFR 871).

**DISTRIBUTION:**  
All Departmental Elements

**INITIATED BY:**  
Assistant Secretary for  
Defense Programs

6. APPLICATION TO CONTRACTS.

- a. Except for the exclusions in paragraph 5, this Order includes requirements that are to be applied to the universe of contractors involved with work under the direction of the Assistant Secretary for Defense Programs in support of the nuclear weapons program and awarded a management and operating contract.
- b. The Operations Offices shall incorporate the responsibilities to be applied to these contractors into respective contracts. If this is not practicable, identify the paragraphs in the directive that describe what the contractor is required to do.

7. IMPLEMENTATION. The provisions of this Order must be fully implemented within 12 months from its effective date.8. REFERENCES. See Attachment 1.9. DEFINITIONS. See Attachment 2.10. POLICY.

- a. Nuclear components, and special assemblies associated with the nuclear weapons program shall be transported by the Transportation Safeguards System in a configuration certified or authorized pursuant to this Order, and in a manner that ensures the safety and health of DOE workers, the public, and the environment. It is the goal of DOE that the level of safety and health required for DOE transportation operations be equivalent to, or greater than, that provided by compliance to applicable Federal, State, tribal, and local regulations. The risk to the public due to DOE transportation operations shall be minimized by the implementation of positive measures.
- b. Radioactive material shipments using either: (1) DOE/Office of Environment, Safety, and Health packaging certified under DOE 5480.3, or (2) NRC certified packaging meeting the 10 CFR 71 requirements, or (3) Department of Transportation (DOT) specification packaging shall be reviewed and approved by the Albuquerque Operations Office prior to shipment in the Transportation Safeguards System, for compatibility with the Transportation Safeguards System loading, unloading, tiedown and other requirements.

11. OBJECTIVE.

- a. The objective of this Order is to promulgate DOE policy such that all measures reasonably practicable for the safe packaging and offsite transport of nuclear components, and special assemblies associated with the nuclear weapons program are implemented.

Safety review and offsite transportation operations shall be conducted through a systematic process that considers and evaluates all aspects of operations, identifies risks, and analyzes those operations in terms of worker and public safety, health, and protection of the environment.

- b. To attain this objective, all Nuclear Explosive and Weapon Safety shipments conducted under the authority of this Order shall be approved by the Manager, Albuquerque Operations Office, with either an Offsite Transportation Certificate or an Offsite Transportation Authorization. Figure 1 illustrates the approval process for both types of packaging.

(1) Offsite Transportation Certificate.

- (a) An Offsite Transportation Certificate is a DOE document, approved and issued by the Manager, Albuquerque Operations Office, certifying a specific packaging for nuclear weapons-related cargo requiring shipment in Transportation Safeguards System, for use either on a one-time basis or up to 5 years. It is issued if a DOE package meets applicable requirements of 10 CFR 71 or 49 CFR 100-178.
- (b) The Offsite Transportation Certificate shall be supported by the Safety Analysis Report for Packaging, with the Safety Analysis Report for Packaging review documented in a Safety Evaluation Report.

(2) Offsite Transportation Authorization.

- (a) An Offsite Transportation Authorization is a DOE document, approved and issued by the Manager, Albuquerque Operations Office, authorizing a weapons-related shipment campaign requiring the use of Transportation Safeguards System, for a specific package and loading configuration, specific routes, and campaign duration.
- (b) If expeditious shipment is warranted by an emergency or other extreme case, the initiating organization may request the Manager, Albuquerque Operations Office, to waive the formal Offsite Transportation Authorization review/approval process, in total or in part. The Manager, Albuquerque Operations Office, must be assured, however, that safety levels commensurate with those resulting from the formal Offsite Transportation Authorization process are achieved. Only the Manager, Albuquerque Operations Office, may approve justifications for an expeditious shipment request and authorize the shipment; Manager, Albuquerque Operations Office cannot delegate this authority.

- (3) The Offsite Transportation Authorization approval process shall not be used merely to bypass the requirements of Offsite Transportation Certificate.

## 12. RESPONSIBILITIES AND AUTHORITIES.

- a. The Secretary of Energy has the ultimate responsibility for the safe transport of all items covered by this Order.
- b. The Associate Deputy Secretary for Field Management is responsible for management, coordination, and oversight of the Operations Offices and shall ensure that line managers apply appropriate safety principles to the packaging and offsite transportation operations authorized by this Order.
- c. Assistant Secretary for Defense Programs shall implement the Secretary's policy and identify pertinent line-management responsibilities.
- d. Assistant Secretary for Environment, Safety, and Health shall:
  - (1) Provide DOE certificates for packaging of hazardous and radioactive materials in accordance with DOE 5480.3;
  - (2) Provide independent oversight of environmental protection, worker safety and health, and public safety and health related to DOE operations;
- e. The Deputy Assistant Secretary for Military Applications and Stockpile Support, Defense Programs is the Headquarters official responsible for all matters relating to the packaging and offsite transportation of nuclear components, and special assemblies associated with Nuclear Explosive and Weapon Safety. Specifically, the Deputy Assistant Secretary shall:
  - (1) Provide overall program management, oversight, and direction, including coordination of the operating and capital budgets;
  - (2) Provide proactive oversight of the packaging certification program by:
    - (a) Nominating a Military Applications and Stockpile Support staff member, on a case-by-case basis, to observe Transportation Safety Review Panel review activities;

- (b) Conducting safety appraisals of this program at least once in 2 years, and ensuring that corrective actions are taken;
  - (c) Periodically reviewing this Order to assure continued compliance with Federal laws and Department of Energy directives;
  - (d) Maintaining a copy of all Safety Evaluation Reports, Offsite Transportation Certificates, Offsite Transportation Authorizations and Transportation Safety Risk Assessments supporting offsite weapon transportation program.
- f. Director, Office of Security Affairs, Nonproliferation and National Security shall:
  - (1) Establish and implement policy for the classification and declassification of Restricted Data, Formerly Restricted Data, and National Security Information and the control of certain unclassified sensitive information within DOE's jurisdiction; e.g., Unclassified Controlled Nuclear Information;
  - (2) Establish DOE-wide policy in matters associated with the protection of classified information, work, or materials, and with the authority to make arrests and carry firearms for the protection of shipments, facilities, and installations under the cognizance of the Department.
- g. Director, Office of Naval Reactors, Nuclear Energy shall, in accordance with the responsibility and authorities assigned by Executive Order 12344 (42 U.S.C. 7158) and to ensure consistency throughout the joint Navy-DOE organization of the Naval Nuclear Propulsion Program, implement and oversee all policy and practices pertaining to this DOE Order for activities under the cognizance of Naval Reactors.
- h. Manager, Pittsburgh Naval Reactors Office shall:
  - (1) Establish and implement special arrangements for shipments of Category I and Category II quantities (as defined in DOE 5633.3A) of Special Nuclear Material to or from facilities of the Naval Nuclear Propulsion Program;
  - (2) Coordinate with the Albuquerque Operations Office, Transportation Safeguards Division for appropriate support of shipments containing Category I or II quantities of Special Nuclear Material to or from facilities of the Naval Nuclear Propulsion Program.

\*\*\*\*\* DATABASE NOTE:  
ATTACHMENT OF FIGURE 1 - PROCESSES FOR CERTIFICATION/AUTHORIZATION OF  
PACKAGING (PAGE 6) IS NOT INCLUDED IN DATABASE, DUE TO ITS FORMAT.

Figure 1

Processes for Certification/Authorization of Packaging

i. Managers, Operations Offices shall:

- (1) Implement DOE offsite transportation policy and assure safe transport of nuclear components, and special assemblies associated with the nuclear weapons program authorized by this Order;
- (2) Ensure that transportation requests, with Safety Analysis Report for Packaging or Transportation Safety Risk Assessment or other required supporting documents, are submitted to the Albuquerque Operations Office at least 6 months prior to the first required shipment date;
- (3) Provide qualified individuals to serve as members on a Transportation Safety Review Panel, when requested by the Albuquerque Operations Office;
- (4) Comment on guides, methodology, and reviews when requested by the Albuquerque Operations Office;
- (5) Maintain a copy of all approved Offsite Transportation Certificates, Offsite Transportation Authorizations, and supporting documentation applicable to shipments by their respective contractors;
- (6) On a 24-month cycle, minimum, conduct appraisals of packaging and offsite transportation safety programs under their cognizance to verify compliance with this Order, and implement and track corresponding corrective actions.
- (7) Ensure that all personnel who support and/or perform packaging and transportation operations are appropriately trained and knowledgeable of the regulations to meet the requirements of this Order;
- (8) Ensure that each site has personnel assigned and trained to oversee compliance with this Order;
- (9) Review base technology programs at Area Offices and contractor locations for transportation packaging; maintain records of these reviews;
- (10) Ensure that procurement activities are conducted in compliance with applicable requirements;
- (11) Provide support for the conduct of safety appraisals at the Operations Offices conducted by external organizations.

j. Manager, Albuquerque Operations Office, in addition to responsibilities and authorities in paragraph 12i, shall:

- (1) Approve Offsite Transportation Certificates and Offsite Transportation Authorizations; ensure an Offsite Transportation Authorization is not issued when an Offsite Transportation Certificate is feasible; transmit approved Offsite Transportation Certificates and Offsite Transportation Authorizations (or the record of disapproval) to Deputy Assistant Secretary for Military Applications and Stockpile Support, the appropriate Operations/Area Offices along with the Safety Evaluation Report;
- (2) Manage the day-to-day activities related to packaging and offsite transportation of nuclear weapon components, special assemblies, and radioactive materials associated with the nuclear weapons program;
- (3) Every 5 years or as dictated by programmatic requirements, review and update the Defense Program Transportation Risk Assessment Report, and Transportation Safety Analysis Report, in order to assess the risk to public safety and the environment from shipments of cargo in Transportation Safeguards System in support of the nuclear weapons program;
- (4) Develop and maintain a review and approval process for packaging configurations within the Transportation Safeguards System in support of the nuclear weapons program utilizing DOE certified, under DOE 5480.3, NRC certified or DOT specification packaging.
- (5) Issue supplemental directives and guides to implement this Order.
- (6) Implement procedures and guidelines for Operations Offices to conduct safety and/or risk analyses of requested transportation configurations and to ensure that the report of that analysis is usable by the Transportation Safety Review Panel in its review of the Offsite Transportation Certificate/ Offsite Transportation Authorization request;
- (7) Develop and implement personnel training programs and procedures that assure the safe packaging and transportation of nuclear components, special assemblies, and radioactive material associated with the nuclear weapons program;
- (8) Maintain a copy of:
  - (a) All currently approved Offsite Transportation Certificates and Offsite Transportation Authorizations along with Safety Analysis Report for Packaging, Safety Evaluation Reports, Transportation Safety Risk Assessments, and other supporting documents;



- (b) All current certificates for NRC, and DOE/Office of Environment, Safety, and Health approved (under DOE 5480.3) packaging which are approved by the Manager, Albuquerque Operations Office, for use in Transportation Safeguards System in support of the nuclear weapons program;
- (9) Annually provide a listing to Deputy Assistant Secretary for Military Applications and Stockpile Support and all Operations Offices of all certified packaging and authorized transportation configurations reviewed and approved by the Manager, Albuquerque Operations Office, for use in Transportation Safeguards System in support of the nuclear weapons program;
- (10) Establish and maintain the capability for technical and safety oversight of the packaging and offsite transportation system in support of the nuclear weapons transportation program;
- (11) Conduct appraisals of the packaging and offsite transportation program activities at other Operations Offices at least every 24 months to verify compliance with this Order;
- (12) Ensure that all shipments, to include expeditious shipments outside the formal Offsite Transportation Authorization process, comply with the applicable provisions of this Order.
- (13) The Manager, Albuquerque Operations Office, must specifically authorize the use of any vehicle other than the ones certified under an Offsite Transportation Certificate or Offsite Transportation Authorization.

BY ORDER OF THE SECRETARY OF ENERGY:

ARCHER L. DURHAM  
Assistant Secretary for  
Human Resources and Administration

#### REFERENCES

1. ATOMIC ENERGY ACT OF 1954 (42 U.S.C 2011, et. seq.), as amended, which establishes a program for Government control of the possession, use and production of atomic energy and Special Nuclear Material, whether owned by the Government or others.
2. Title 10 CFR, ENERGY, Part 71 "Packaging and Transportation of Radioactive Material," which establishes requirements for packaging, preparation for shipment, and transportation of licensed material; and procedures and standards for NRC approval of packaging and shipping procedures for fissile material and for a quantity of other licensed material in excess of a Type A quantity.
3. Title 10 CFR, ENERGY, Part 871, "Air Transportation of Plutonium," which establishes the conditions for authorizing the air transportation of plutonium under a national security exemption or a public health and safety exemption.
4. Title 49 CFR, TRANSPORTATION, Parts 100-178, which contains current regulations issued by the Department of Transportation under Subtitle B, Chapter I--Research and Special Programs Administration--governing transportation of hazardous materials.
5. Public Law 94-187, Sections 501-502, "Air Transportation of Plutonium," which precludes air transport of plutonium except under rules promulgated for national security, medical shipments, and half-life considerations.
6. DOE 1540.2, HAZARDOUS MATERIALS PACKAGING FOR TRANSPORTATION ADMINISTRATIVE PROCEDURES, of 9-30-86, which establishes administrative procedures for the certification and use of radioactive and other hazardous materials packaging by the Department of Energy.
7. DOE 1540.3A, BASE TECHNOLOGY FOR RADIOACTIVE MATERIAL TRANSPORTATION PACKAGING SYSTEMS, of 7-8-92, which provides Departmental policies and responsibilities for coordination and planning base technology for radioactive material transportation packaging systems.
8. DOE 5000.3B, OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS INFORMATION, of 1-19-93, which sets forth the policy, assigns responsibility, and provides criteria and instructions for reporting all unclassified occurrences.
9. DOE 5480.1B, ENVIRONMENT, SAFETY, AND HEALTH PROGRAM FOR DEPARTMENT OF ENERGY OPERATIONS, of 9-23-86, which establishes the Office of Environment, Safety, and Health program for DOE.

10. DOE 5480.3, SAFETY REQUIREMENTS FOR PACKAGING AND TRANSPORTATION OF HAZARDOUS MATERIAL, HAZARDOUS SUBSTANCES, AND HAZARDOUS WASTE, of 7-9-85, which sets forth requirements for packaging and transportation of hazardous materials shipments.
11. DOE 5480.11, RADIATION PROTECTION FOR OCCUPATIONAL WORKERS, of 12-21-88, which establishes radiation protection standards and program requirements for DOE and DOE-contractor operations with respect to the protection of the worker from ionizing radiation.
12. DOE 5480.23, NUCLEAR SAFETY ANALYSIS REPORTS, of 4-10-92, which sets forth provisions to be applied to DOE-owned nuclear facilities and operations.
13. DOE 5610.10, NUCLEAR EXPLOSIVE AND WEAPON SAFETY PROGRAM, of 10-10-90, which provides safety policy and assignments of responsibilities for the nuclear weapons program, and is the lead Order for other Orders containing specific safety requirements that will establish a comprehensive safety program.
14. DOE 5610.11, NUCLEAR EXPLOSIVE SAFETY, of 10-10-90, which sets forth policy, assigns responsibilities, and establishes requirements, standards, and safety rules for the prevention of accidental or unauthorized nuclear explosive detonations.
15. DOE 5610.13, JOINT DEPARTMENT OF ENERGY/DEPARTMENT OF DEFENSE NUCLEAR WEAPON SYSTEM SAFETY, SECURITY, AND CONTROL ACTIVITIES, of 10-10-90, which sets forth provisions to be applied to the Joint DOE-Department of Defense Nuclear Weapon Program Interface.
16. DOE 5610.14, TRANSPORTATION SAFEGUARDS SYSTEM OPERATIONS, of 5-12-93, which sets forth provisions to be applied to the operation of the Transportation Safeguards System.
17. DOE 5632.2A, PHYSICAL PROTECTION OF SPECIAL NUCLEAR MATERIAL AND VITAL EQUIPMENT, of 2-9-88, which sets forth provisions for the protection of Special Nuclear Material and vital equipment.
18. DOE 5632.5, PHYSICAL PROTECTION OF CLASSIFIED MATTER, of 2-3-88, which sets forth provision for the protection of classified matter.
19. DOE 5633.3A, CONTROL AND ACCOUNTABILITY OF NUCLEAR MATERIALS, of 2-12-93, which prescribes DOE minimum requirements and procedures for control and accountability of nuclear materials at DOE-owned and leased facilities and DOE-owned nuclear materials at other facilities which are exempt from licensing by the Nuclear Regulatory Commission.
20. DOE 5700.6C, QUALITY ASSURANCE, of 8-21-91, which establishes quality assurance requirements for DOE and its contractors.

21. Joint DOE/DOD Technical Publication 20-11, GENERAL FIRE FIGHTING GUIDANCE (U).
22. Joint DOE/DOD Technical Publication 45-51 series, TRANSPORTATION OF NUCLEAR WEAPON MATERIAL (U).
23. Energy Research & Development Administration (ERDA), Research, Development and Test Standard, RDT-F8-11T, FUEL SHIPPING CONTAINER TIE-DOWN FOR TRUCK TRANSPORT, of 1-75, which describes general requirements, methods of tiedown, and arrangement of tiedown members for package assemblies up to 25 tons and within certain dimensional limits.

DEFINITION OF TERMS

1. CAMPAIGN. A series of shipments, made over a predetermined time period in support of a common objective, which have similar cargo, packaging, tiedown configuration, and conveyance. The approval to conduct a shipment campaign may further specify route restrictions or administrative positive measures.
2. CATEGORY. A designation (Category I, II, III, or IV) of a quantity of Special Nuclear Material or of a Special Nuclear Material location based on the attractiveness level of the material and the amount of material present. DOE 5633.3A, Chapter I, paragraph 2b, provides precise guidance for determining nuclear material categories.
3. GENERAL SAFETY RESTRICTIONS. Procedures to ensure safety and protection to workers, the public, property, and the environment.
4. HAZARDOUS COMPONENTS. Those parts of nuclear explosives or special assemblies that contain hazardous, other than radioactive materials.
5. HAZARDOUS MATERIALS. A substance, or a material including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated in 49 CFR 172.101.
6. JOINT-TEST ASSEMBLIES (JTAs). A DOE-developed configuration based on DOE-DOD requirements for use in a joint flight test program comprised of a joint test subassembly and War Reserve (WR) weapon components. The physical appearance and characteristics of a JTA approximates a War Reserve configuration to the extent practicable.
7. LINE MANAGER. The individual responsible for all activities pertaining to programs under his/her cognizance.
8. LABORATORY TEST UNIT (LTU). Special Non-war Reserve units that are related to the War Reserve parent but do not have the combination of high explosive and fissile material.
9. MIXED LOAD. Any transportation configuration where nuclear components, special assemblies, or radioactive materials are shipped with items containing high explosive (HE) or insensitive high explosive (IHE). The term does not apply to a single special assembly that contains both explosive and radioactive or hazardous materials.
10. NUCLEAR COMPONENTS. Those parts of a nuclear explosive or special assembly, or test part or subassembly that contain fissile and/or radioactive and other materials.

11. NUCLEAR CRITICALITY SAFETY. The implementation of procedures and the application of limits to ensure that fissile material remain in a subcritical state. Protection against the consequences of an inadvertent nuclear chain reaction, preferably by prevention of the reaction (Ref. ANS/ANSI 8.1).
12. NUCLEAR EXPLOSIVE. Any assembly containing fissile and/or fusionable materials and main charge high explosive parts that may be capable of producing a nuclear yield.
13. NUCLEAR EXPLOSIVE-LIKE ASSEMBLY (NELA). An assembly which represents a nuclear explosive in its basic configuration (main charge and pit) and any subsequent level of assembly up to its final configuration, or which represents a weaponized nuclear explosive such as a warhead, bomb, reentry vehicle, or artillery shell. A Nuclear Explosive-like Assembly in any configuration does not contain an arrangement of high explosive and fissile material capable of producing a nuclear yield.
14. NUCLEAR MATERIAL COURIERS (NMC). Armed, "Q" cleared, Transportation Safeguards System Federal Officers who have been authorized under Section 161k of the Atomic Energy Act of 1954, as amended, or other appropriate statutory authority, to carry firearms, make arrests without warrant, and use deadly force in accordance with 10 CFR 1047.4 (Limited Arrest and Use of Force by Protective Force Officers). The Nuclear Material Couriers are charged with the responsibility for the safe secure movement of nuclear weapons, weapons components, radioactive materials associated with the nuclear weapons program, and other identified cargo/matter/materials requiring in-transit safeguards protection. Nuclear Material Couriers possess a commercial drivers license with the hazardous materials endorsement and receive related biannual training in transportation of hazardous material.
15. OFFSITE. The areas outside the boundaries and jurisdiction of a DOE facility to which the general public has free and unlimited access.
16. OFFSITE TRANSPORTATION AUTHORIZATION (OTA). A DOE document, approved and issued by the Manager, Albuquerque Operations Office, authorizing a weapon-related shipment campaign on a limited basis for a specific package and loading configuration, specific routes, and campaign duration.
17. OFFSITE TRANSPORTATION CERTIFICATE (OTC). A DOE document, approved and issued by the Manager, Albuquerque Operations Office, authorizing a specific packaging for weapons-related transportation activities involving quantities of radioactive and other hazardous materials, for use either on a one-time basis or up to 5 years.
18. PACKAGE. The packaging together with its contents as presented for transport.

19. PACKAGING. The assembly of components necessary to comply with the packaging requirements of Title 49 CFR. It may consist of one or more receptacles, absorbent materials, spacing structures, thermal insulation, radiation shielding, and devices for cooling or absorbing mechanical shocks. The conveyance, tiedown system, and auxiliary equipment may sometimes be designated as part of the packaging.
20. POSITIVE MEASURES. Design features, safety rules, procedures, or other controls used individually or collectively to reduce risk and enhance system safety.
21. RADIOACTIVE MATERIAL. Any material having a specific activity greater than 0.002 microcuries per gram.
22. RADIOACTIVE MATERIALS ASSOCIATED WITH THE NUCLEAR WEAPONS PROGRAM. Type B quantities of weapons-grade Special Nuclear Material, Category I or II quantities of special nuclear material, tritium, and other materials specifically designated by the Manager, Albuquerque Operations Office.
23. RISK. The combination of the probability of an incident releasing radioactive and/or hazardous materials and the consequences of the release on the public and the environment which, taken over all events relating to system operation, provides a meaningful picture of the adverse impact of the operation.
24. SAFEGUARDS. An integrated system of physical protection, material accounting, and material control measures designed to deter, prevent, detect, and respond to unauthorized access, possession, use, or sabotage of nuclear material.
25. SAFE-SECURE TRAILER (SST). A specially modified semi-trailer, pulled by an armored tractor, which is used to transport materials in support of the nuclear weapons program.
26. SAFETY ANALYSIS REPORT FOR PACKAGING (SARP). A document that provides a comprehensive technical evaluation of packaging. The report identifies design, testing, operational procedures, maintenance procedures, and a quality assurance program to demonstrate compliance with NRC safety standards or equivalent standards established by DOE for approving packaging and issuing Offsite Transportation Certificates.
27. SAFETY EVALUATION REPORT (SER). A document that provides the final results of the Transportation Safety Review Panel's safety evaluation and independent review of the Safety Analysis Report for Packaging and/or Transportation Safety Risk Assessment.
28. SHIPMENT. An operational or logistic action involving offsite movement of nuclear weapon components, special assemblies, or related radioactive and hazardous materials by DOE in Transportation Safeguards System, or

any Albuquerque Operations Office approved conveyance made under the supervision of the Transportation Safeguards Division.

29. SPECIAL ASSEMBLY. A major assembly of nuclear weapon components which does not comprise a complete nuclear explosive or nuclear test device and is not capable of producing a nuclear detonation. Special assemblies include Joint-test Assemblies (JTAs), Laboratory Test Units (LTUs), Nuclear Explosive-like Assemblies (NELAs), and trainers (Type units).
30. SPECIAL NUCLEAR MATERIAL (SNM). Plutonium, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Nuclear Regulatory Commission, pursuant to the provisions of Section 51 of the Atomic Energy Act, determines to be Special Nuclear Material, but does not include source material; or any materials artificially enriched by any of the foregoing, but does not include source materials. (Reference: Atomic Energy Act, 42 U.S.C. 2014)
31. TRANSPORTATION REQUEST. A formal request by a DOE organization or contractor to the Manager, Albuquerque Operations Office, to obtain an Offsite Transportation Certificate or Offsite Transportation Authorization.
32. TRANSPORTATION SAFEGUARDS SYSTEM (TSS). A DOE system, managed and operated by the Albuquerque Operations Office, administered by the Transportation Safeguards Division, under the programmatic direction of the Deputy Assistant Secretary for Military Application and Stockpile Support, used for the safe and secure movement of nuclear explosives, nuclear components, special assemblies, Special Nuclear Material, and other cargo deemed appropriate by responsible program elements and approved by the Albuquerque Operations Office. Such operations are authorized by Congress under the Atomic Energy Act and its revisions.
33. TRANSPORTATION SAFETY ANALYSIS REPORT (TSAR). A formal Safety Analysis Report for a transportation system. It describes the design, operation, and maintenance of the system and assesses accident response.
34. TRANSPORTATION SAFETY REVIEW PANEL (TSRP). A committee, chaired by a Federal employee and composed of persons with appropriate expertise, that performs technical reviews to verify compliance with this Order and makes recommendations for offsite transportation certification or authorization.
35. TRANSPORTATION SAFETY RISK ASSESSMENT (TSRA). Formal documentation to systematically describe a transportation system and identify and assess hazards and risks associated with the planned operation.
36. TYPE A1/A2 QUANTITY. The maximum activity of a radioactive isotope which can be transported in a "Type A" package. A list of these activity levels, by isotope, is contained in 10 CFR 71, Appendix A. A1



values apply to "special form radioactive material;" i.e., material that is either a single solid piece or contained in a sealed capsule. A2 values apply to "normal form radioactive material;" i.e., material which does not qualify as special form radioactive material.

37. TYPE B PACKAGE. A Type B packaging together with its radioactive contents.
38. TYPE B QUANTITY. A quantity of radioactive material or mixture of radioactive isotopes which has an activity level higher than the maximum A1 or A2 activity level allowed by 10 CFR 71, Appendix A.
39. WEAPONS-GRADE RADIOACTIVE MATERIAL. Uranium that contains greater than 20 percent of the isotope U-235 or plutonium that contains less than 7 percent of the isotope Pu-240.