

Code of PNRI Regulations
Part 27

**Security Requirements in the Transport
of Radioactive Material**

Nuclear Regulatory Division/PNRI
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CPR Part 27

SECURITY REQUIREMENTS IN THE TRANSPORT OF RADIOACTIVE MATERIAL

I. GENERAL PROVISIONS

Section 1. Purpose.

- (a) The requirements of this Part are issued pursuant to Section 2 of Republic Act No. 5207, as amended, which provides as a matter of policy, to protect the public against the unauthorized use of radioactive material and associated facilities.
- (b) The main objectives of the requirements of this Part are:
 - (1) To achieve and maintain a high level of security during transport of radioactive material that is commensurate with the potential hazard posed by the material; and
 - (2) To prevent unauthorized access or damage to, and loss, theft, sabotage, or unauthorized transfer of radioactive material during transport.
- (c) The requirements of this Part shall be used in conjunction with other requirements of the Code of PNRI Regulations (CPR) covering licensing, radiation safety and security and other regulatory controls relating to transport of radioactive material.
- (d) Nothing in this Part shall be construed to limit actions as may be appropriate and necessary to protect the health and safety of the radiation workers, general public and the environment as a consequence of a malicious act involving radioactive material.

Section 2. Scope.

- (a) The requirements of this Part shall apply to the transport of radioactive material in the Philippines by air, land or water, including loading, unloading, and in storage incidental to transport.
- (b) The requirements of this Part shall apply to intervention measures undertaken by the licensee in the event of transport security incident or emergency involving radioactive material.
- (c) The requirements of this Part do not apply to:
 - (1) Nuclear material as defined in the Convention on the Physical Protection of Nuclear Material, except for sources incorporating Plutonium-239, such as in PuBe neutron sources;

- (2) Radioactive waste in general, but are applicable to disused radioactive sources;
 - (3) Natural material and ores containing naturally occurring radionuclides that are not intended to be processed for the purpose of using these radionuclides, provided further that, the activity concentration of the material does not exceed ten (10) times the activity concentration for exempt material;
 - (4) Radioactive material that is an integral part of the means of transport (e.g. nuclear-propelled vehicles);
 - (5) Radioactive material being moved within an establishment which is subject to appropriate security requirements in force in the establishment and where the movement does not involve public roads or railways;
 - (6) Radioactive material implanted or incorporated into a person or live animal either for diagnostic or therapeutic purposes; and
 - (7) Radioactive material in consumer products which have received regulatory approval, following the sale of such products to the end user.
- (d) The requirements of this Part shall apply to radioactive materials within any practice to include disused sources or any other radioactive material as specified by PNRI regulations, order or amendment of the requirements of this Part.
- (e) Nothing in this Part relieves any person from complying with applicable requirements of other government agencies having jurisdiction over transport of radioactive material.

Section 3. Specific Exemptions.

PNRI may, upon application by a licensee or upon its own initiative, grant such exemptions from the requirements in this Part as it determines are authorized by the Act and are in the public interest, and will not endanger life, property and the environment nor compromise the national security and defense.

Section 4. Definitions.

As used in this Part:

- (a) “**Act**” means the Republic Act No. 5207, as amended, otherwise known as the Atomic Energy Regulatory and Liability Act of 1968;
- (b) “**Administrative Measures**” means the use of policies, procedures, instructions, sanctions, access control rules, confidentiality rules and techniques that direct personnel to securely and safely manage radioactive material;
- (c) “**Basic Security level**” means the level of security for transport of radioactive material package that is below the enhance security level but above the level of security for transport of radioactive material requiring only prudent management practices as specified in Appendix I to this Part;

- (d) **“Carrier”** means any person, including freight forwarders, engaged in the transport of radioactive material by land, air or water, as a common or contract carrier, or private entity;
- (e) **“CPR or Code”** means the Code of PNRI Regulations;
- (f) **“Consignee”** means any PNRI licensee who is entitled to take delivery of a consignment;
- (g) **“Consignment”** means any package or packages, or load of radioactive material, presented by a consignor for transport;
- (h) **“Consignor”** means any PNRI licensee who prepares a consignment for transport, or is named consignor in the transport documents;
- (i) **“Conveyance”** means
 - (1) for transport by road or rail: any vehicle;
 - (2) for transport by water: any vessel, or any hold, compartment, or defined deck area of a vessel; and
 - (3) for transport by air: any aircraft.
- (j) **“Delay”** means security measures to impede or hinder the progress of an intruder;
- (k) **“Deterrence”** means security measures sufficient to deter a reasonable individual from attempting unauthorized access;
- (l) **“Diversion”** means the unauthorized movement of radioactive material subject to this Part to a location different from the material’s authorized destination inside or outside of the site at which the material is used or stored;
- (m) **“Enhanced Security Level”** means the level of security for transport of a radioactive material package that is at or above the radioactivity threshold specified in Appendix I to this Part;
- (n) **“Event”** means any occurrence incident to transport that is unintended by the workers or is deliberate on the part of workers or others, the consequences or potential consequences of which are not negligible from the point of view of security;
- (o) **“Export”** means the physical transfer of one or more radioactive material covered by this Part originating from the Philippines into an importing state, or to a recipient in an importing state;
- (p) **“Import”** means the physical transfer of one or more radioactive material covered by this Part, into the Philippines or to a recipient in the Philippines and originating from an exporting state;
- (q) **“Licensee”** means a holder of a valid license issued by PNRI;
- (r) **“Law Enforcement Agency (LEA)”** means any police organization that has authority to carry firearms and make arrests, and is authorized and has the capability to provide an armed response in the jurisdiction where the licensed radioactive material is transported or in in-transit storage;
- (s) **“Malicious Act”** means a deliberate act to remove radioactive material from authorized control (e.g. theft) or an act directed against radioactive material (e.g.

sabotage) that could endanger workers, the public and the environment by exposure to radiation or the release or dispersal of radioactive material, including the deliberate dispersion of radioactive material to cause economic and social disruption;

- (t) **"Mobile Device"** means a piece of equipment containing radioactive material that is either mounted on wheels or casters, or otherwise equipped for moving without a need for disassembly or dismounting; or designed to be hand carried. Mobile devices do not include stationary equipment installed in a fixed location;
- (u) **"Package"** means the packaging together with its radioactive contents as presented for transport;
- (v) **"Packaging"** means the assembly of components necessary to enclose the radioactive contents completely and perform the required containment and other safety functions;
- (w) **"Person"** means:
 - (1) any individual, firm, partnership, association, trust, estate, private or public body, whether corporate or not, or government agency other than PNRI, or any province, city, municipality, or any political subdivision or entity within the Philippines; and
 - (2) any legal successor, representative, agent or agency of the foregoing.
- (x) **"Radioactive Content"** means the radioactive material together with any contaminated or activated solids, liquids and gases within the packaging;
- (y) **"Radioactive Material"** means any material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the basic values specified in Appendix A in CPR Part 3, Standards for Protection Against Radiation;
- (z) **"Radioactive Source"** means radioactive material that is permanently sealed in a capsule or closely bonded, is in solid form and is not exempt from regulatory control. It also means any radioactive material released if the radioactive source is leaking or broken, but does not mean material encapsulated for disposal, or nuclear material within the nuclear fuel cycle of research and power reactors;
- (aa) **"Readiness Review"** means a systematic review carried out by a licensee prior to undertaking a shipment as part of a good security management program to ensure overall functioning of a security system. A readiness review is used to demonstrate that security measures are in place and functional prior to starting shipment operations;
- (bb) **"Response Force"** means persons, on-site or off-site who are qualified, authorized, and appropriately equipped and trained to counter an attempted unauthorized removal of radioactive material or an act of sabotage;
- (cc) **"Sabotage"** means a deliberate act directed against radioactive material during transport or in-transit storage that could directly or indirectly endanger the health and safety of personnel, the public and the environment by exposure to radiation or release of radioactive material;
- (dd) **"Security"** means the prevention and detection of, and response to, theft, sabotage, unauthorized access, illegal transfer or other malicious acts involving nuclear material, other radioactive substances or their associated facilities;

- (ee) **“Security Culture”** means the assembly of characteristics and attitudes in organizations and of individuals which establish that security issues receive the attention warranted by their significance;
- (ff) **“Security Manager”** means a person duly designated by the licensee as the point of contact for the implementation of security requirements;
- (gg) **“Security System”** means a system designed by the licensee which satisfies the requirements specified in the requirements of this Part as documented in the Transport Security Plan;
- (hh) **“Transport Control Center (TCC)”** means an operations center that is remote from transport activity and that maintains continuous conveyance location and security status information for a shipment of radioactive material;
- (ii) **“Transport Security Plan”** means a document prepared by the licensee that presents a detailed description of the security arrangements during transport of radioactive material;
- (jj) **“Shipment”** means the specific movement of a consignment from origin to destination;
- (kk) **“Storage”** means the interim holding of radioactive material incidental to transport;
- (ll) **“Technical Measures”** means the physical barriers installed to protect radioactive material or devices in transport from unauthorized personnel and to deter, or to prevent inadvertent or unauthorized access to, or removal of, radioactive material;
- (mm) **“Threat”** means a characterization of an adversary capable of causing undesirable consequences, including the objectives, motivation and capabilities, e.g. number of potential attackers, equipment, training and attack plan.;
- (nn) **“Threat Assessment”** means an analysis that documents the credible motivations, intentions and capabilities of potential adversaries that could cause undesirable consequences with regard to radioactive material in transport;
- (oo) **“Trustworthiness”** means the characteristics of an individual considered dependable in judgment, character and performance, such that unescorted access to radioactive material by that individual does not constitute an unreasonable risk to the public health and safety or security. A determination of trustworthiness for this purpose is based upon the results from a background investigation;
- (pp) **“Unescorted Access”** means solitary access to packages or the devices that contain the material including unescorted access to the cargo area of a conveyance;
- (qq) **“Worker”** means any individual engaged full time or part time in the transport of radioactive material.

Note: Terms defined in the Act and in other Parts of the CPR shall have the same meaning when used in this Part to the extent that such terms are not specifically defined in this Part.

Section 5. Interpretation.

Except as specifically authorized by PNRI in writing, no interpretation of the meaning of the requirements in this Part by any officer or employee of PNRI other than a written interpretation by the Director, will be recognized to be binding upon the PNRI.

Section 6. General Obligations.

No person shall engage in the transport of radioactive material except as authorized in a license issued by PNRI pursuant to a specific regulation of the CPR and unless the requirements of this Part are complied with.

Section 7. Access to Premises and Information.

For purposes of implementing its licensing and regulatory functions pursuant to the Act, authorized representatives of PNRI, in coordination with other relevant regulatory agencies, may access premises, facilities and conveyances used in the transport of radioactive material subject to this Part in order to obtain information about the status of security and verify compliance with regulatory requirements.

Section 8. Resolution of Conflicts.

PNRI may initiate the appropriate steps toward the resolution of a conflict, if any, between the requirements contained in this Part and other laws and regulations.

Section 9. Additional Requirements.

PNRI may impose additional requirements by regulation, administrative order, or conditions of a license, in addition to those established in this Part, as it deems appropriate or necessary to protect health and safety of radiation workers, the general public and the environment, and will not endanger property nor compromise the national security and defense.

Section 10. Transport Requirements Addressed by Other National Modal Agencies.

PNRI may apply, as may be practicable, specific provisions of the International Maritime Dangerous Goods (IMDG) Code, Safety of Life at Sea (SOLAS), International Civil Aviation Organization (ICAO) Technical Instructions, International Ship and Ports Facility Security (ISPS) Code, and relevant requirements adopted by other national modal agencies on transport, including the Office for Transportation Security National Transport Security Program (OTS NTSP).

Section 11. Communication.

All communications and reports concerning the requirements of this Part shall be addressed to the Director, Philippine Nuclear Research Institute (PNRI), Commonwealth Avenue, Diliman, Quezon City.

II. ADMINISTRATIVE REQUIREMENTS

Section 12. Responsibilities of the Licensee.

- (a) The licensee shall bear the responsibility for establishing and implementing the administrative and technical measures that are needed to ensure the security of radioactive material during transport and to comply with all applicable requirements of this Part and the conditions of the license.
- (b) The licensee shall bear full responsibility for the actions of any organization that may be contracted to undertake transport operations on its behalf. The licensee shall:
 - (1) Identify all workers whose assigned tasks could substantially affect the security of radioactive material during transport;
 - (2) Ensure that workers authorized by reference in the license are permitted to fulfill required assignments and tasks;
 - (3) Ensure that workers meet the requirements for training and trustworthiness as specified in this Part;
 - (4) Notify PNRI of its intention to introduce any change in the transport arrangements which could have implications to security;
 - (5) Not carry out any change in the transport arrangements which could have implications to security unless specifically authorized by PNRI; and
 - (6) If transporting a package with radioactive content meeting the enhanced security level:
 - (i) appropriately develop, adopt, implement and comply with the provisions of a transport security plan as specified in this Part;
 - (ii) have an emergency response and contingency plan in place to respond to malicious acts involving radioactive material in transport, including measures for the recovery of lost or stolen material and mitigating consequences; and
 - (iii) appropriately incorporate the emergency response and contingency plan into the transport security plan as specified in this Part.
- (c) The licensee shall designate a Security Manager in key assignments related to the security in the transport of radioactive material.

Section 13. Security Manager.

- (a) The Security Manager shall be responsible for the development and implementation of the transport security plan.
- (b) The Security Manager shall provide analysis and advice to ensure that security requirements are being implemented in a manner that does not compromise safety.
- (c) The Security Manager shall coordinate with the licensee's Radiation Safety Officer in matters related to radiation safety during transport of radioactive material.
- (d) The Security Manager shall be the single point of contact responsible for all security related actions during the actual transport of radioactive material.

Section 14. Security Culture.

The licensee shall promote security culture and establish a management system, commensurate with the size and nature of the transport operation, which ensures that:

- (a) Policies and procedures are established that identify security, along with safety, as being of the highest priority;
- (b) Problems affecting security are promptly identified and corrected in a manner commensurate with their importance;
- (c) The responsibilities of each individual for security are clearly identified and each individual is suitably trained and qualified;
- (d) Clear lines of authority for decisions on security are defined;
- (e) Organizational arrangements and lines of communications are established that result in an appropriate flow of information on security at, and between, the various levels in the entire organization of the licensee, and other concerned parties; and
- (f) Sensitive information relative to the security of the radioactive material is identified and protected according to this Part.

Section 15. Personnel Access Authorization.

- (a) The licensee shall subject the following individuals to access authorization measures:
 - (1) Individuals whose assigned duties require unescorted access to the packages or devices containing radioactive material;
 - (2) Individuals whose assigned duties provide access to the packages or devices containing radioactive material;
 - (3) Licensee personnel transporting the radioactive material, if the licensee transports its own radioactive material;
 - (4) Vehicle drivers and accompanying individuals, for road shipments;
 - (5) Individuals assigned to man the Transport Control Center (TCC); and
 - (6) Reviewing officials, including evaluators, assessors and inspectors.
- (b) The licensee shall grant unescorted access to the packages or devices containing radioactive material only to individuals determined to be trustworthy.
- (c) The licensee shall ensure that the requirements in Section 24 of this Part are met.

Section 16. Confidentiality and Information Security.

- (a) The licensee shall establish an information management system, commensurate with the security level of the transport operation, which ensures that the:

- (1) Confidentiality of information that it receives in confidence from another party is protected;
 - (2) Information received in confidence from another party is only provided to a third party with the consent of the first party; and
 - (3) Confidentiality of information, the unauthorized disclosure of which could compromise the effectiveness of the transport security system.
- (b) Information and documents that can be used to identify transport routes, schedules, specific security measures or weaknesses in the transport security system shall be controlled and distributed only on a need-to-know basis taking into account the national regulations on classified documents. These information and documents include:
- (1) Specific routes, shipment schedules (dates and times), and in-transit storage locations;
 - (2) Transport security plan (if applicable) and associated documents;
 - (3) Transport security system(s) and associated documents;
 - (4) Temporary or permanent weaknesses in the security system(s); and
 - (5) Transport emergency response and contingency plan.

Section 17. *Trustworthiness of Individuals Involved in Transport Operation.*

- (a) The licensee shall take measures to determine the trustworthiness of the following:
 - (1) Individuals specified in Section 15 of this Part; and
 - (2) Individuals requiring access to the security sensitive information specified in Section 16 of this Part.
- (b) The licensee shall cause its personnel to take appropriate background checks and psychological examinations from reputable institutions.
- (c) The measures to determine trustworthiness shall be appropriate to the security level applicable to the transport operation.

Section 18. *Training Requirements.*

- (a) The licensee shall conduct training for personnel responsible for the implementation of the transport security plan.
- (b) The Security Manager shall receive training on security in the transport of radioactive material.
- (c) The licensee shall ensure that workers, commensurate with responsibilities and roles and on a need-to-know basis:
 - (1) Are instructed in the licensee's transport security plan and implementing procedures, the responsibilities, and the appropriate response to security incidents;

- (2) Receive training on security awareness that addresses the nature of security related threats and includes:
 - (i) the transport security plan;
 - (ii) emergency response and contingency plan; and
 - (iii) other associated plans.
- (d) The licensee with dedicated security personnel shall train the security personnel in the timely notification of affected Law Enforcement Agency (LEA) during emergencies.
- (e) Personnel subject to the training requirements of this Part shall complete the training before being allowed unescorted access to radioactive material.
- (f) The licensee shall require workers to undertake periodic retraining. The retraining shall address:
 - (1) Any significant change in the transport security plan;
 - (2) Reports on relevant threats, problems or lessons learned;
 - (3) Relevant results from readiness reviews and inspections by PNRI or other responsible groups or organizations; and
 - (4) Relevant results from the licensee's own reviews and evaluations.
- (g) Training records shall be maintained for three (3) years and shall include training topics, training dates, and the list of personnel who attended the training.

Section 19. Transport Control Center (TCC).

The licensee transporting a package with radioactive content meeting the enhanced security level shall establish or contract a service provider for a Transport Control Center (TCC) that is capable of maintaining continuous conveyance location and security status information for a shipment of radioactive material. The TCC shall:

- (a) Be remote from the transport activity;
- (b) Maintain communication with the conveyance, consignor/consignee, carrier and, when appropriate, guards and the response forces;
- (c) Receive reports of attempted attacks or thefts;
- (d) Provide a means for reporting these and other problems to appropriate agencies; and
- (e) Be capable of requesting and coordinating appropriate aid for an incident including providing responders with appropriate information about the shipment.

Section 20. Performance Testing and Verification of Compliance.

The licensee who regularly undertakes transport operation at the enhanced security level and has an established generic transport security plan shall conduct performance testing of transport security systems to verify compliance with the requirements of this Part and the conditions of the license. Testing shall include drills and exercises in which

personnel exhibit their understanding and ability to perform their required tasks at least annually or as deemed necessary by PNRI.

III. TECHNICAL REQUIREMENTS

Section 21. Levels of Security in Transport for Radioactive Material Packages.

The following three security levels shall be used in specifying appropriate transport security measures for packages of radioactive material on the basis of their potential consequences:

- (a) Prudent Management Practices: for consignments of excepted packages with contents not exceeding the activity allowed for non-special form material and radioactive material specified as LSA-I and SCO-I;
- (b) Basic Security Level: for consignments of packages that are below the enhanced security level, that is, below the radioactivity threshold, but above the level of security for consignments requiring only prudent management practices as specified in Appendix I to this Part; and
- (c) Enhanced Security Level: for consignments that include at least one package that is at or above the radioactivity threshold as specified in Appendix I to this Part.

Section 22. Transport Security Level Performance Objectives.

Security arrangements for every transport operation shall meet the performance objectives required for the transport security level of the radioactive material being transported.

- (a) For radioactive material requiring only prudent management practices, while in transport and during storage in transit, measures shall be established that:
 - (1) Ensure safe handling of the radioactive material as required in CPR Part 4; and
 - (2) Adequately protect the radioactive material as an asset.
- (b) For radioactive material requiring the basic security level, while in transport and during storage in transit, measures shall be established that:
 - (1) Deter unauthorized access to the radioactive material;
 - (2) Detect unauthorized access and acquisition of the radioactive material by verifying the presence of the radioactive material at regular intervals;
 - (3) Delay unauthorized access and acquisition of the radioactive material; and
 - (4) Provide for response to any attempt directed toward, or actual, unauthorized access to radioactive material, or to other malicious acts involving radioactive material, with a capability to initiate recovery of the radioactive material and mitigate radiological consequences.

- (c) For radioactive material requiring the enhanced security level, while in transport and during storage in transit, measures shall be established that:
 - (1) Deter unauthorized access to the radioactive material;
 - (2) Detect, in a timely manner, unauthorized access and acquisition of the radioactive material by providing a system to monitor the movement of the conveyance;
 - (3) Delay unauthorized access and acquisition of the radioactive material;
 - (4) Provide for timely response to any attempt directed toward, or actual, unauthorized access to radioactive material, or to other malicious acts involving radioactive material, with a capability to recover the radioactive material and mitigate radiological consequences;
 - (5) Provide communication capability among consignor, carrier(s) and consignee for security related information; and
 - (6) Maintain continuous attendance or control of the conveyance.

Section 23. Transport Security Measures.

- (a) The licensee shall meet the security performance objectives of a transport security level by:
 - (1) Complying with the requirements of this Part that are applicable to the appropriate transport security level, as specified in Section 23(b) through (e) below; or
 - (2) Adopting other transport security measures for review and approval by PNRI. The licensee shall demonstrate to PNRI that the transport security measures used meet the applicable performance objectives listed in Section 22 of this Part.
- (b) The licensee shall use an appropriate combination of administrative and technical measures that accomplish the following requirements to achieve the performance objectives:
 - (1) Provide for early detection and assessment of attempts to gain unauthorized access to, or control over, radioactive material shipments;
 - (2) Delay and impede attempts at theft, diversion, or radiological sabotage of radioactive material shipments until response forces arrive; and
 - (3) Provide for notification to the appropriate response forces of any attempts at theft, diversion, or radiological sabotage of a radioactive material shipment.
- (c) The licensee shall comply with the requirements presented in Appendix II to this Part according to the level of security of the transport operation.
- (d) The measures shall be part of an integrated concept of safety and security involving industrial safety arrangements, radiation protection measures and appropriate design

to achieve the necessary level of protection against unauthorized access to, or acquisition of, radioactive material during transport and in-transit storage.

- (e) Additional security measures may be imposed by PNRI as it deems appropriate or necessary to ensure security during transport of radioactive material or protect national interest.

Section 24. Access Control Requirements.

- (a) Access to radioactive material shall be commensurate with the transport security level of the radioactive material.
- (b) The licensee shall control access to the radioactive material at all times during transport and in-transit storage and limit access to such radioactive material only to individuals who have prior written approval from the licensee.
- (c) The licensee shall maintain current a list of individuals who are granted unescorted access to the radioactive material and shall document the basis for assuring that the individuals are trustworthy.
- (d) The identity of all individuals accessing the location of the radioactive material shall be verified.

Section 25. Additional Measures for Mobile Devices.

If transporting mobile devices, such as radiographic exposure devices (radiography cameras), source changers, well logging equipment, gauges or controllers, storage containers, lead pigs for holding sources during a source exchange, and onsite or offsite transportation packages, containing radioactive material, the licensee shall:

- (a) Have at least two (2) independent technical measures to secure the material from unauthorized removal when the device is not under direct control and constant surveillance by the licensee; and
- (b) For devices in or on a vehicle or trailer, the licensee shall maintain direct control or constant surveillance.

Section 26. Specific or Increased Transport Security Threat.

- (a) The licensee shall closely coordinate with PNRI for any response planning to an increased threat of malevolent use regarding radioactive material.
- (b) If the licensee becomes aware, or suspects that there is a specific threat targeting the radioactive material or its in-transit storage location, security measures shall be increased in accordance with the threat, and may include:
 - (1) Ensuring that PNRI is made aware of the suspected threat;
 - (2) Reviewing licensee security procedures, and radiation safety practices with the law enforcement and emergency response personnel;
 - (3) Providing a twenty-four (24)-hour guard, a CCTV system, or an intrusion detection system, where applicable to in-transit storage; and

- (4) Making sure that emergency response procedures are current, including ensuring that local medical facilities are available where there are personnel trained and equipped to handle radiological emergencies.
- (c) Increased security measures shall be continued until such time as it is determined that the specific threat is no longer present.

Section 27. Emergency Response and Contingency Plan.

- (a) The licensee transporting a package with radioactive content meeting the enhanced security level shall develop an emergency response and contingency plan to address the following:
 - (1) Immediate notifications to the TCC, PNRI, law enforcement agencies and other appropriate authorities in accordance with Section 36 of this Part;
 - (2) Communication protocols, including a strategy for the use of authentication and duress codes and provisions for refueling or other stops, detours, and locations where communication is expected to be temporarily lost;
 - (3) Loss of communications;
 - (4) Responses to an actual or attempted theft or diversion of a shipment, or any suspicious activities related to a shipment;
 - (5) Response to a specific or increased security threat in accordance with Section 26 of this Part; and
 - (6) Timely reports to PNRI in accordance with Section 35 of this Part.
- (b) The emergency response and contingency plan, in conjunction with other relevant plans and procedures, shall be exercised by way of conducting drills as appropriate, evaluated and updated at least once a year or as deemed necessary by PNRI.

Section 28. Transport Security Plan.

- (a) A transport security plan shall be developed by the licensee for:
 - (1) Transport of every radioactive material requiring the enhanced security level; and
 - (2) Any shipment deemed necessary by PNRI in the light of the risks posed and the current national threat assessment.
- (b) The transport security plan shall contain, as a minimum, the information detailed in Appendix III to this Part.
- (c) The transport security plan shall be tested or evaluated as appropriate and evaluated and updated at least once a year or as deemed necessary by PNRI.
- (d) Identified deficiencies in the transport security plan or security systems shall be promptly remedied and reported in accordance with Section 35 of this Part.

- (e) The licensee shall retain a copy of the current transport security plan as a record until PNRI terminates the license and, if any portion of the plan is superseded, retain the superseded material for five (5) years.

Section 29. Readiness Review.

- (a) The licensee shall undertake a readiness review of the critical elements in the transport of:
 - (1) Radioactive material requiring the enhanced security level; and
 - (2) Any radioactive material shipment deemed necessary by PNRI in the light of the risks posed and the current national threat assessment.
- (b) The licensee shall undertake a readiness review of the following elements in the transport of radioactive material, as defined in the transport security plan, to demonstrate that adequate security measures are in place and functional prior to start of shipment operations:
 - (1) Administrative Measures;
 - (2) Responsibilities;
 - (3) Transport Security Measures;
 - (4) Emergency Response and Contingency Plan.
- (c) The licensee, upon identifying that one or more elements are deficient through the readiness review described in Section 29(a) above, shall undertake follow-on corrective actions and determine if such corrective actions are sufficient. Shipment shall not be undertaken until all corrective actions have been adequately accomplished.
- (d) The licensee shall undertake the readiness review in at least two (2) stages and shall initiate the review with sufficient time prior to the planned start of a shipment to allow needed corrective actions to be identified and acted upon.
 - (1) First stage – performed one or more days prior to shipment; and
 - (2) Second stage (final/pre-shipment review) – performed on the day of the shipment, prior to departure.
- (e) The licensee in coordination with PNRI shall perform the readiness review.

IV. REQUIREMENTS FOR ACQUISITION AND DISTRIBUTION OF RADIOACTIVE MATERIAL

Section 30. Transport Authorization.

- (a) Except for persons exempt, no person shall transfer, import or export radioactive material except as authorized in a license issued pursuant to PNRI regulations.
- (b) The licensee transporting radioactive material domestically or internationally shall comply with the requirements in CPR Part 4 and of this Part.

- (c) The licensee shall secure from PNRI a written authorization to transport, as specified in CPR Part 4 and the requirements of this Part prior to conduct of transport operations.

Section 31. Advance Notification of Shipment.

- (a) The licensee shall provide advance notification to the consignee of a planned shipment of radioactive material. The advance notification shall include the following:
 - (1) Name, address and telephone number of the shipper, carrier and receiver of the shipment;
 - (2) License number of the shipper and receiver;
 - (3) Description of the radioactive material contained in the shipment, including the radionuclides and quantity;
 - (4) Point of origin of the shipment and the estimated time and date that shipment will commence;
 - (5) Estimated time and date of arrival of the shipment at the destination; and
 - (6) Contact and telephone number for the point of contact.
- (b) The licensee shall confirm the capability and readiness of the consignee to accept delivery at the expected time, prior to the commencement of transport.
- (c) The licensee shall provide the same or similar advance notification described in Section 31(a) to PNRI and, when required, to the competent authorities of the receiving and/or transit state.
- (d) If a shipment for which an advance notification has been provided, as per Section 31(c) above, has been cancelled, the licensee shall send a cancellation notice to PNRI and, if applicable, to the competent authorities of the receiving and/or transit state. 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) The licensee shall retain a copy of the advance notification, any revision and cancellation notices and any other associated records for three (3) years.

Section 32. Import of Radioactive Material.

- (a) Import of radioactive material shall comply with the requirements in CPR Part 4 and this Part.
- (b) A licensee intending to import radioactive material requiring the enhanced security level shall coordinate security arrangements with the Bureau of Customs, port authorities and other national modal agencies on transport prior to conduct of transport operations.

- (c) Arrangements shall be made for prompt transfer and/or loading of a radioactive material consignment at the port area to the carrier taking control of the shipment for subsequent transport.

Section 33. *Export of Radioactive Material.*

- (a) Export of radioactive material shall comply with the requirements in CPR Part 4 and this Part.
- (b) A licensee intending to export radioactive material requiring the enhanced security level shall coordinate security arrangements with the Bureau of Customs, port authorities and other national modal agencies on transport prior to conduct of transport operations.
- (c) The licensee shall require the consignee to notify the licensee on receipt of radioactive material within the expected delivery time. The licensee shall provide the same or similar notification to PNRI.

V. RECORDING AND REPORTING REQUIREMENTS

Section 34. *Inventories and Records.*

- (a) Radioactive material shall be inventoried and accounted for before and after shipment, and additionally, if applicable, at regular intervals during in-transit storage, depending on the length of storage.
- (b) The licensee shall maintain records of the following:
 - (1) Transport security plan;
 - (2) Readiness reviews;
 - (3) Inventories;
 - (4) Emergency exercises, including drills;
 - (5) Advance notifications;
 - (6) Revision or cancellation notices, if any;
 - (7) Correspondence related to transport of radioactive material;
 - (8) Copies of transport documents, including documentation of receipt or non-receipt; and
 - (9) Event/incident reports.
- (c) The licensee shall maintain adequate safeguards against tampering with and loss of records.
- (d) Signed and authenticated records required by this Part shall be retained for a period of three (3) years, kept legible throughout the retention period, and made available for PNRI inspection, upon reasonable notification.

Section 35. *Reporting Requirements.*

- (a) In addition to any reporting required by the other relevant Parts of the CPR, the licensee shall make the following reports to PNRI:
 - (1) Inventory data as specified in Section 34(a) of this Part;

- (2) Unusual events or incidents, such as:
 - (i) failures of transport packaging or containers, which may have security implications,
 - (ii) discovery of any unaccounted radioactive material,
 - (iii) unauthorized access to the radioactive material,
 - (iv) loss of control over the radioactive material,
 - (v) actual or attempted theft or sabotage of radioactive material, and
 - (vi) receipt of specific or general malicious threats;
 - (3) Identified security system vulnerabilities and corrective actions taken; and
 - (4) Any intentions to introduce modifications to any transport arrangement whenever the modifications could have significant implications for security.
- (b) Any event or incident specified in Section 35(a)(2) above shall be reported in writing within a period of ten (10) working days following proper notification according to Section 36 of this Part.
- (c) All other reports required by this Part shall be made in writing within a period of thirty (30) days.

Section 36. Notification of Incidents.

- (a) The licensee shall notify PNRI within twenty-four (24) hours by an appropriate method of any events or incidents specified in Section 35(a)(2)(i) through (iii) of this Part.
- (b) The licensee shall notify both the LEA and PNRI of events or incidents specified in Section 35(a)(2)(iv) through (vi) of this Part as follows:
- (1) The licensee shall immediately notify the LEA, through telephone, after determining that an unauthorized access resulted in an actual or attempted theft, sabotage or diversion of a radioactive material or situations that pose a potential risk to the health and safety of the general public and the environment. The licensee shall notify PNRI as soon as possible after initiating a response, but not at the expense of causing delay or interfering with the LEA response to the event; and
 - (2) The licensee shall immediately notify the LEA, through telephone, any suspicious activity related to possible theft, sabotage or diversion of radioactive material. The licensee shall notify PNRI as soon as possible after notifying the LEA.
- (c) The initial notifications required in Section 36(a) and (b) above shall be followed within a period of ten (10) working days by a written report submitted to PNRI by an appropriate method in accordance with Section 35 of this Part. The report must include sufficient information for PNRI assessment and evaluation, including identification of any necessary corrective actions to prevent future instances.

Section 37. Feedback of Operating Experiences.

The licensee shall ensure that information on normal operational performance, abnormal conditions, and events that may affect the security of radioactive material during

transport, including best practices and deficiencies identified during the transport operations, is made available to PNRI.

VI. ENFORCEMENT

Section 38. Inspections.

- (a) The licensee shall afford PNRI opportunity to conduct inspection of transport security measures implemented.
- (b) The licensee shall make available to PNRI for inspection records specified in Section 34 and Section 35 of this Part pertaining to the shipment of radioactive material.

Section 39. Violations.

- (a) A notice of violation shall be issued to the licensee who may be found to have violated the requirements of this Part, or any order or rule issued hereunder.
- (b) PNRI may revoke, suspend or modify a license to use radioactive material, or prohibit the possession of radioactive material, upon finding a lapse in the security of radioactive material during transport or non-compliance with applicable requirements of this Part.
- (c) Any person who willfully violates, attempts to violate, or conspires to violate, any provision of this Part, rule or order issued pursuant to this Part, may be guilty of a crime, and upon conviction, may be punished by a fine or imprisonment, or both, as provided by Sections 64 and 65 of Republic Act No. 5207.

VII. EFFECTIVITY

Section 40. Effective Date.

The requirements of this Part shall take effect fifteen (15) days following the publication of this Part in the Official Gazette.

Approved : **(Sgd.)ALUMANDA M. DELA ROSA, Ph.D.**
Director, PNRI

Date : 30 August 2013

APPENDIX I. TRANSPORT SECURITY RADIOACTIVITY THRESHOLD

To specify which radioactive material packages shall be transported under which level, it is necessary to define the radioactivity threshold that would constitute a “high consequence” radioactive material.

(a) **Radioactivity Threshold.** The following definition of radioactivity threshold shall be used to facilitate the undertaking of transport security measures:

- (1) for radioactive sources and other forms of radioactive material containing radionuclides covered by CPR Part 26, $10 \times D$, where D refers to the D -value for the radionuclide, per package (this includes Category 1 and Category 2 sources or Security Level A and Security Level B sources; see Table 1 below);
- (2) for all other radionuclides, $3000 \times A_2$ per package, where A_2 refers to the maximum activity of radioactive material, other than special form radioactive material that is permitted in a Type A package; or
- (3) for mixtures of radionuclides, the determination of whether or not the radioactivity threshold has been met or exceeded can be calculated by summing the ratios of activity present for each radionuclide divided by the radioactivity threshold for that radionuclide. If the sum of the fractions is less than 1, then the radioactivity threshold for the mixture has not been exceeded, that is,

$$\sum_i \frac{A_i}{T_i} < 1$$

where A_i is the activity of radionuclide i that is present in a package (TBq),
 T_i is the transport security threshold for radionuclide i (TBq).

Table 1. RADIOACTIVITY THRESHOLD PER RADIONUCLIDE

Radionuclide	Radioactivity Threshold 10 × D (TBq)
Am-241	0.6
Au-198	2
Cd-109	200
Cf-252	0.2
Cm-244	0.5
Co-57	7
Co-60	0.3
Cs-137	1
Fe-55	8000
Ge-68	7
Gd-153	10
Ir-192	0.8
Ni-63	600
Pd-103	900
Pm-147	400
Po-210	0.6
Pu-238	0.6
Pu-239	0.6
Ra-226	0.4
Ru-106	3
Se-75	2
Sr-90	10
Tl-204	200
Tm-170	200
Yb-169	3

- (b) **Transport Security Levels.** The levels shall be defined as follows. Refer to Figure 1 below.
- (1) Prudent Management Practices: the level for consignments of the following low risk materials:
 - (i) excepted packages with an activity level not exceeding the level permitted for the radionuclide when it is not in special form; and
 - (ii) material of low activity concentration and low level contaminated objects (LSA-I and SCO-I).
 - (2) Basic Security Level: the level for consignments of radioactive material below the radioactivity threshold, as defined in (a) above, but above the low risk material requiring only prudent management practices.
 - (3) Enhanced Security Level: the level for consignments of radioactive material at or above the radioactivity threshold, as defined in (a) above.

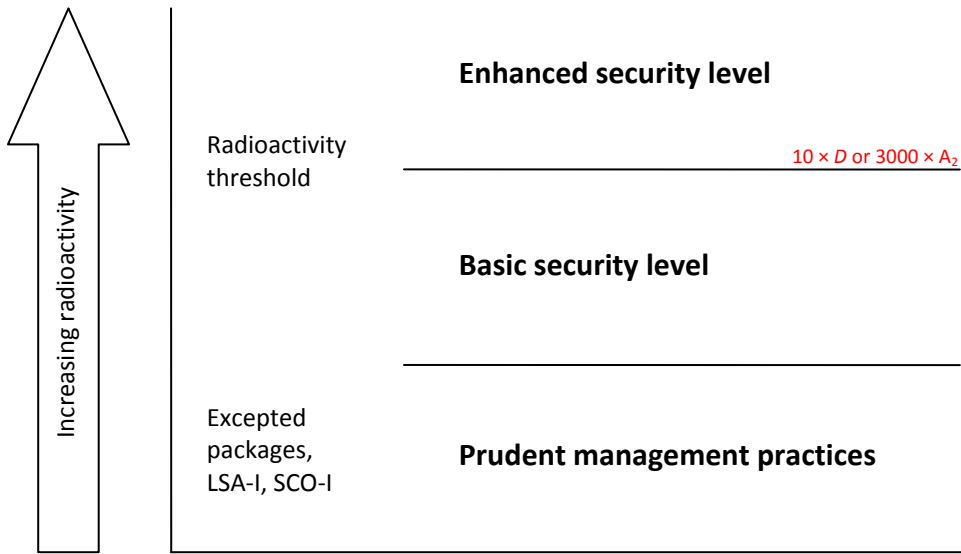


Figure 1. Incremental transport security levels

APPENDIX II. SECURITY MEASURES FOR RADIOACTIVE MATERIAL TRANSPORT

The following security measures shall be used to protect radioactive material against theft, sabotage, or other malicious acts during its transport. These measures shall be considered by the licensee as representing a minimum set of measures. Application of the additional security measures in (a) below may be imposed by PNRI as it deems appropriate or necessary to the transport of particularly vulnerable radioactive material or at a time of increased threat. Moreover, these measures, along with the other provisions of this Part, shall supplement the requirements for international shipment, as presented in (b) below.

Table 2. SECURITY MEASURES FOR RADIOACTIVE MATERIAL DURING TRANSPORT

ENHANCED SECURITY LEVEL		BASIC SECURITY LEVEL	PRUDENT MANAGEMENT PRACTICES
Category 1	Category 2	Category 3	Category 4 and 5
General Security Provisions <ul style="list-style-type: none"> – Transport authorization from PNRI – Threat information considerations, including specific or increased threat – Security during in-transit use/storage, as appropriate with respect to category – Response procedures – Additional security measures, if required, as specified in (a) below 			Safe transport requirements specified in CPR Part 4 Authority to Transport from PNRI Basic protection measures as an asset Normal commercial practices
Packages and Conveyances Considerations <ul style="list-style-type: none"> – Packages of radioactive material should be carried in secure and closed or sheeted conveyance, unless there are overriding safety or operational considerations – Packages individually weighing more than 2000 kg that are sealed and secured to the conveyance may be transported on an open conveyance – Locks and seals should be employed where appropriate and their integrity should be verified before dispatch and on arrival by workers who are specifically and previously authorized by licensed consignor/consignee to undertake this verification 			
Security Manager <ul style="list-style-type: none"> – Duly designated personnel responsible for the security in the transport of radioactive material 			
Security Training <ul style="list-style-type: none"> – General security awareness training for all workers – Basic security training for the security manager – Periodic retraining, if applicable – Training/retraining records 			
Trustworthiness Determination <ul style="list-style-type: none"> – Determination of trustworthiness of workers commensurate with their responsibilities 			
Exchange of Security Related Information <ul style="list-style-type: none"> – Exchange of security related information where the exchange does not conflict with information security requirements 			
Personnel Identity Verification <ul style="list-style-type: none"> – Means of positive identification of workers 			

<p>Security Verification of Conveyances</p> <ul style="list-style-type: none"> – Security inspections of conveyances to ensure that security measures remain effective during transport 	
<p>Incident Notification</p> <ul style="list-style-type: none"> – Proper and timely notification to LEA and PNRI, as applicable 	
<p>Written Instructions on Basic Details of Emergency Contacts</p> <ul style="list-style-type: none"> – Contact details of LEA, PNRI, etc. 	
<p>Written Instructions on Security Measures</p> <ul style="list-style-type: none"> – Instructions on operation of security devices and on how to respond to a security incident during transport 	
<p>Emergency Response and Contingency Plan</p> <ul style="list-style-type: none"> – Comprehensive Emergency Response and Contingency Plan 	
<p>Transport Security Plan</p> <ul style="list-style-type: none"> – Comprehensive security plan – Appropriate emergency response and contingency plan should be incorporated – Periodic review, if applicable – If transport activities are subcontracted, contractual arrangements to develop and comply with a transport security plan should be ensured 	
<p>Advance Notification</p> <ul style="list-style-type: none"> – Consignor’s advance notification to the consignee – Consignee’s confirmation of capability and readiness to accept delivery – Consignee’s notification to the consignor on receipt or non-receipt – Consignor’s advance shipment notification to PNRI and the competent authorities of receiving and/or transit state 	
<p>Transport Control Center (TCC)</p> <ul style="list-style-type: none"> – An operations center remote from the transport activity that maintains continuous conveyance location and security status information for a shipment of radioactive material 	
<p>Communications from the Conveyance</p> <ul style="list-style-type: none"> – Capability for personnel to communicate with the TCC as specified in the security plan 	
<p>Tracking System</p> <ul style="list-style-type: none"> – Tracking system to monitor the movement of conveyances containing radioactive material – Availability to the appropriate parties of information about status changes 	
<p>Readiness Review</p> <ul style="list-style-type: none"> – Review to demonstrate that security measures are in place and functional prior to shipment 	

- (a) **Additional Security Measures.** In certain circumstances, PNRI may consider enhancing the foregoing baseline security measures in view of the design basis threat, the assessment of the prevailing threat or the nature of the material being transported.

- (b) **International Shipment.** For air transport, shipment shall be carried out in accordance with the applicable security provisions of the Convention on International Civil Aviation, ICAO and the Technical Instructions for the Safe Transport of Dangerous Goods by Air, ICAO. For maritime transport, shipment shall be carried out in accordance with the applicable security provisions of the International Ship and Port Facility Security Code and of the International Maritime Dangerous Goods Code as required by the International Convention for the Safety of Life at Sea. Before an international shipment is undertaken, adequate provisions to confirm that the security requirements of the receiving state and any transit states will be met shall be established.

APPENDIX III. FORMAT AND CONTENT OF TRANSPORT SECURITY PLAN

A transport security plan is required for transport of radioactive material at the enhanced security level. Moreover, a transport security plan may be required if PNRI determines a significant security threat on radioactive material not at the enhanced security level in the light of risks posed and the current national threat assessment.

The transport security plan shall be tested and evaluated annually against the security performance objectives. A review of the plan shall be based upon the results of the test. Any identified deficiencies in the plan or security systems shall be promptly remedied and reported accordingly. The following information would typically need to be included in the plan:

Chapter I. INTRODUCTION

- 1.1 Background
- 1.2 Scope
- 1.3 Objectives
- 1.4 National Regulatory and Other Documents

Chapter II. SECURITY MANAGEMENT

- 2.1 Roles and Responsibilities/Structure of Transport Security Organization
- 2.2 Confidentiality and Information Security
- 2.3 Training Program
- 2.4 Transport Control Center
- 2.5 Performance Testing and Verification of Compliance Program
- 2.6 Trustworthiness of Individuals Involved in Transport Operation

Chapter III. SECURITY MEASURES AND PROCEDURES

- 3.1 Policies and Procedures
- 3.2 Primary and Alternate Routes
- 3.3 Access Control Measures
- 3.4 Security System

Chapter IV. EMERGENCY RESPONSE AND CONTINGENCY PLAN

- 4.1 Non-tactical and Tactical Emergency Response
- 4.2 Incident Communication
- 4.3 Notification of Relevant Agencies