



NUCLEAR SECURITY EVENTS WITH RADIOACTIVE SOURCES WITHOUT MALICIOUS EVENT



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June, 2024

Temporary loss of regulatory control radioactive sources

IMPORTANT FACTS TO AVOID LOSS OF REGULATORY CONTROL OF RADIOACTIVE SOURCES WITHOUT MALICIOUS INTENT

1. SAFETY TRAINING

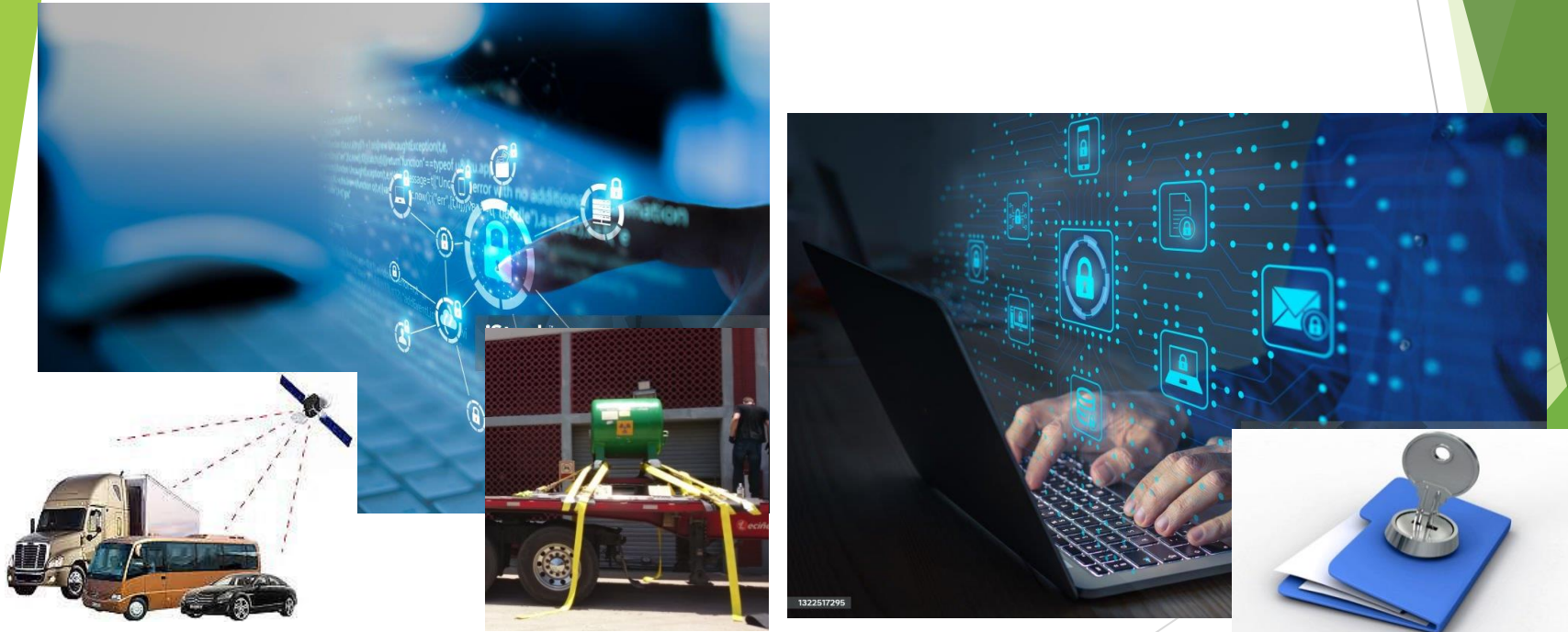
Technical and specific training from Radiation Safety Officers will give the appropriate knowledge to be prepared in safety design, storage, handling and appropriate transport, permits and information on deliver chain.



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2. TECHNOLOGICAL DESIGN CONTAINERS.

Use technology to apply on design of the radioactive container of sources such as padlocks, lock safely, unlock signals, GPS transport control, special keys with specific authorized personnel.



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3. SAFETY INFORMATION.

Appropriate information should be marked such as origin, Carrier, Destiny, weight, nuclear/radiation labels, emergency contacts, materials safety data sheet.

- Radioactive Sources Characteristics.
- Isotopes involved and activities.
- Physical form.
- Manufacturer, models and serial numbers.
- Pieces & Quantity.
- Origin for source.
- Destiny for source.



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4. REGULATORY INFORMATION & PERMITS.

Regulatory Agencies and Customs should receive specific training concerning support all paperworks and reduce response time.

Emergency information and risk level should be described for adequate response involved into all regulatory agencies such as permits, licences, authorizations, customs, carriers, storage and warehouses .

- Containers type and approved certifications.
- Packaging type and certifications.
- Weight & Shape.
- Chemical reactions.
- Physical form.
- Transport Category.
- Origin & Destiny.



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5. SECURITY PLANING.



Nuclear & Radioactive owners should develop an emergency plan and risk analysis, review before dispatch and discussed with Regulatory agencies. CNSNS involves Militar and Police reaction.



- Manufacturer of nuclear & radioactive sources.
- Authorized Customs ports.
- Authorized warehouse & destiny.
- Regulatory Nuclear Comission.
- Authorized Carrier, personnel & vehicles.
- Custom International & National Agencies involve
- Civil Forces on transit states.
- Federal Police & National Guards.
- Estatal Police and Firefighter Department.
- Gobernment Agencies
- Transport Department
- Militar Department.
- Health Agencies.



CNSNS
Comisión Nacional de
Seguridad Nuclear y Salvaguardias



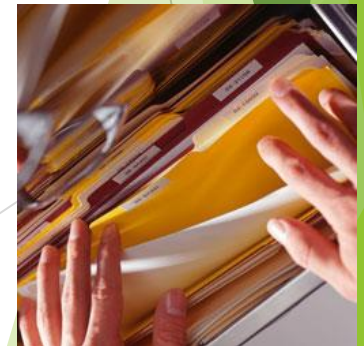
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6. SECURITY INFORMATION

In Mexico CNSNS governance includes three different documents previous authorization of any expedition to guarantee regulatory control of radioactive sources, controlled copies in documents for authorized personnel as described below:

- a) Radiological Procedures Security Manual which includes:
- Emergency Planning Response on PE-01 Risk Analysis
 - Emergency Planning Response on PE-02 Internal Response
 - Emergency Planning Response on PE-03 External Response

- b) Physical Security Planning
c) Quality Assurance Planning



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6. SECURITY INFORMATIONcontinue...

- Radioactive owners restrict plans information for radiological group and controlled access for documents are applied.
- Controlled signs are collected for authorized personnel according to organization and CNSNS replies for external regulatory authorities.
- Radiological Safety Officers control security information.



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7. MALICIOUS AND CRIMINAL INTENT

- Involved personnel are classified before join security group.
- Record Internal communications and identify voices.
- Use cameras inside vehicles to record operators.
- Travel stops must be planned with militar and police agencies.
- Review climate forecast on the routes and study posible changes on the principal route for a second plan.
- Identify all people involved in plans, all changes must be reported at the first level.



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LESSONS LEARNED ON RESPONSE TO NUCLEAR SECURITY EVENTS WITH RADIOACTIVE SOURCES WITHOUT MALICIOUS INTENT

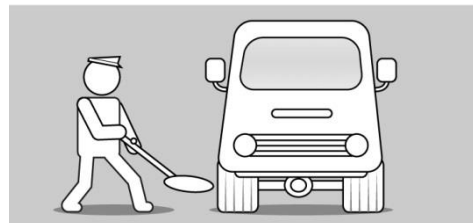
- Review all comments and modify your actual safety procedures to include best practices.
- Prepare simulated practices on the operators and training program for authorized personnel and evaluate response of all involved as simulacrum acts.
- Add new technological equipment and modify access keys



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KEY CHARACTERISTICS WITHOUT MALICIOUS INTEND

1. Planned procedures must be followed and keep record on every stage.
2. Personnel involved on security plans must receive planned training.
3. Critical information must be handled under control of authorities.
4. Responsibility must be clearly defined into different safety Government Agencies.
5. Risk on every stage of planning and movement must be measured with support of the safety Government Agencies.
6. Capacity of response must be measured into every nuclear and radioactive security response.
7. Communications and technologic systems must be robust to avoid loss of control.



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MEASUREMENT AND OPERATIONS CONTROL

As normal procedures are followed, loss of control reduces the risk.

Any threat, emergency, transit delay, unusual act or incident must be immediately reported according to plan by the safety officers designed to Administrative Control Center.

In México, activities of shooting guards, militar and police control must be designed by the regulatory agency CNSNS.



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ADDITIONAL MEASUREMENT AND OPERATIONS CONTROL

- Dual communications system to avoid loss of control.
- Communications and information system.
- Approved written instructions with electronic control.
- Simulacrams in loss of operations control.
- Detailed inspections on resources applied before and after operations.
- Inventory and check lists on security equipments.



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NUCLEAR SECURITY EVENTS IN MEXICO TO UPGRADE NUCLEAR SECURITY RESPONSE PLANNING

The External Planning Emergency Response (PERE) is applied on CFE-CNLV as the principal Nuclear installation by many government agencies federal and local security forces by the regulatory nuclear comisión CNSNS and is developed as a simulacrum every two years to evaluate response actions, CNSNS keeps all time dedicated inspectors and security personnel measuring and reporting operations in plant.

When PERE is activated by CNSNS different government actors interview, such as the Nuclear Investigations National Institute (ININ), National Guard, Civil Protection, Military Agency, Marine Agency, State Government Administration, Federal and Local Police.



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Working together, Law enforcement, Regulators and Operators will strengthen Nuclear & Radioactive sources security all the world!

