



Implementation of a Nuclear Security Regime in the Kingdom of Morocco



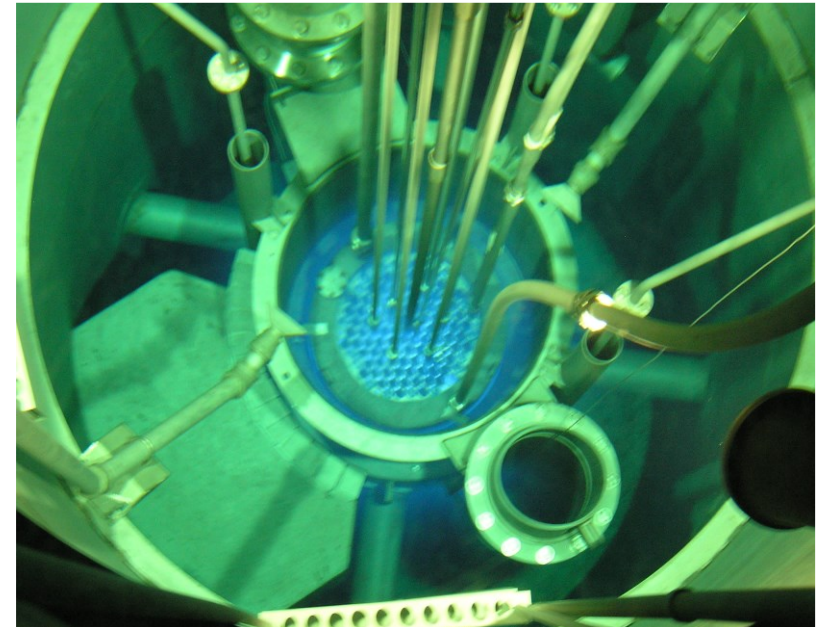
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- Use of nuclear and other radioactive material in Morocco;
- International commitments and cooperation;
- Legal and Regulatory Framework;
- National Approach to enhance nuclear security;
- Summary.

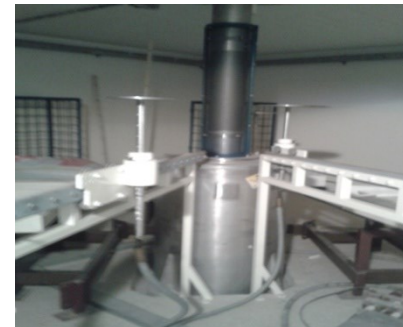
Use of nuclear material

- Nuclear Research Center of Maamora (CNESTEN):
 - 2 MW Research reactor
 - Radioactive waste treatment and interim storage facilities
 - Radioisotopes Productions Labs



Use of radioactive material

- Over than **1200** radioactive sources used in **~100** facilities:
 - Medical applications
 - Gamma knife
 - Brachytherapy (HDR)
 - Industrial applications
 - Gamma radiography
 - Gauges
 - Agriculture (irradiator)
 - Research.



Commitment to International legal instruments

Binding instruments

- Convention on the Physical Protection of Nuclear Material (ratified in 2002);
- Amendment to the Convention on the Physical Protection of Nuclear Material (ratified in 2015);
- The International Convention for the Suppression of the Financing of Terrorism, (ratified in 2002)
- International Convention for the Suppression of Acts of Nuclear Terrorism (ratified in 2010);
- UNSCR 1540 & 1373
- Conventions on Early Notification and assistance (ratified in 1993);

Non binding instruments

- *Code of Conduct of the Safety and Security of Radioactive Sources*
- Import and export guidance

Legal Framework

- Law 142-12 set provisions to establish:
 - A unique and independent authority : AMSSNuR;
- Law 142-12 covers safety, security and safeguards aspects;
- Law 02-02 on civil liability;
- Law 03-03 on criminalization of acts of terrorism;
- Draft law on dual uses.

Legal Framework (Law 142-12)



- Competent authorities are responsible for:
 - Establishing a Physical Protection System based on DBT and in graded approach;
- AMSSNuR is responsible for :
 - A licensing and physical control system;
 - Establish an inventory of radioactive sources and NMAC system;
 - Searching and securing orphan sources;
 - Setting up Security measures during international transport.
- The licensee is the prime responsible for security of nuclear or other radioactive material

- Enforcement:
 - Law 142-12 set provisions to establish
 - A set of penalties with a graded approach
 - Law 03-03 set provisions to criminalize deliberate acts of terrorism in using, inter alia, nuclear or other radioactive material

- A set of regulatory text shall be issued by 2019:
 - Regulation on security of radioactive sources;
 - Regulation on Physical Protection on nuclear material and associated facilities;
 - Technical regulation on reliability and access control; and
 - Technical regulation on information and computer security.

cooperation



- **IAEA**, US NRC, US DOE, EC, Spain, etc...;
- The Global Initiative to Combat Nuclear Terrorism;
- The Nuclear Security Summit;
- Office of Radiological Security program;
- Integrated National Nuclear Security Support Plan;
- CBRN Centre of excellence;

Practical Measures to enhance nuclear security

- Licensing and physical control system
- National inventory of Radioactive Sources;
- Enhancement of security in cat 1&2 facilities;
- Detection on borders and scrap metals dealers facilities.
- National interim storage facility at CENM site;



Training: NSSC

1300 Persons trained
(~75 % nationals)

6 events/an

2010-2015

200 persons
trained/year

40 training

- Morocco has established an adequate basis to implement an effective nuclear security regime:
 - Party to a set of international legal instruments;
 - Comprehensive law;
 - An independent regulatory body;
 - Partner of several initiatives and programs for security.