



Overview of Philippine Nuclear Regulations

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Nuclear Regulations, Licensing and Safeguards
Division




Legal Framework

- **Three (3) Laws exist but not covering decommissioning**
 - ✓ RA 2067 (The Science Act of 1958)
 - ✓ RA 5207 (Atomic Energy Regulatory and Liability Act of 1968)
 - ✓ Presidential Decree 1586 (Philippine EIS System Law)
- **Draft Law “Comprehensive Nuclear Regulation Act of 2007” currently undergoing legislative mill process, covers decommissioning, among others**



Regulatory Framework

- **Two National Regulatory Authorities in the Philippines:**
 - ✓ **Philippine Nuclear Research Institute (PNRI), Department of Science and Technology (DOST) is the national authority responsible for the regulation, licensing and safeguards of radioactive materials and atomic energy facilities.**
 - ✓ **Bureau of Health Devices and Technology (BHDT), Department of Health (DOH) is the national agency in charge of radiation protection and safety of the ionizing and non-ionizing radiation emitted from electrical/electronic devices.**



The Philippine Nuclear Research Institute (PNRI)

- **Headed by a Director and a Deputy Director**
- **Consists of 4 divisions, namely:**
 - ✓ Atomic Research Division
 - ✓ Nuclear Services and Training Division
 - ✓ **Nuclear Regulations, Licensing and Safeguards Division**
 - ✓ Finance and Administration Division



cont.. PNRI

- The PNRI has the roles of promoting nuclear technology, providing services, and regulating the use of nuclear and radioactive materials
- PNRI's own nuclear and radiation activities are exempt from licensing



Internal Regulatory Control Program of PNRI Facilities

- Established thru PNRI Office Order 002 Series of 2004
- PNRI Policy Instruction No.02 Series of 2001 entitled Radiological Health and Safety Policy



Cont... Internal Regulatory Control Program of PNRI Facilities

- Signed by the PNRI Director in 2004 with the purpose to set up an internal authorization process for PNRI nuclear and radiation facilities and laboratories
- A system of authorization is now in place and continuously reviewed and updated for a more effective implementation.



Scope of Application

- Philippine Research Reactor (PRR-1)
- Co-60 Multi-Purpose Irradiation Facility
- Radioisotope Dispensing Laboratory
- Radioactive Waste Management and Interim Storage Facility
- Secondary Standard Dosimetry Laboratory and
- Other PNRI research laboratories where radioactive materials are used and handled



Nuclear Regulations, Licensing, & Safeguards Division (NRLSD)

- o **Tasked to implement the Program**
- o **Consists of the following Sections**
 - s Standards Development Section
 - s Licensing, Review, and Evaluation Section
 - s Inspection and Enforcement Section
 - s Safeguards Section
 - s Radiological Impact Assessment Section



NRLSD Task Force

- Created to review and evaluate applications for authorization of PNRI facilities/Laboratories was issued.
- Took charge of the development of application form for authorization of PNRI Facilities/Laboratories
- Undertook the initial review & evaluation of application for authorization



Current Initiatives

- Rules for the Authorization of PNRI Radiation Facilities and Laboratories – final draft submitted for approval
- Rules for the Authorization of the PRR-1 (Extended Shutdown and Decommissioning) – final draft submitted for approval
- Preparation of Inspection Manual for decommissioning of RR – first draft under review



Authorization/Licensing Requirements for Decommissioning of the PRR-1

- It is the responsibility of the PRR-1 operators to comply with all the requirements set out in the PNRI Internal Regulatory Control Program prior to the issuance of an authorization
- The authorized facility owner is also obliged to allow regulatory inspections with or without prior notice during the decommissioning process



Cont... Authorization/Licensing Requirements

○ **Human and Financial Resources**

- ✓ The personnel responsible in the decommissioning activities must demonstrate that they are qualified by reason of training and experience to carry out the activities for which the license or authorization is sought in a manner that protects health and minimize danger to life or property
- ✓ The PRR-1 operators shall show that it either possesses the necessary funds and/or has reasonable assurance of obtaining the necessary funds, to cover the estimated costs of conducting all authorized activities including management of waste and disposal



Cont... Authorization/Licensing Requirements

- **Decommissioning Plan**

- s The PNRI Internal Control Program requires facility operators to submit a decommissioning plan before an authorization can be issued.
- s The decommissioning plan should address all provisions to protect the health and safety of both the radiation workers and members of the public considering normal and accident conditions



Cont... Authorization/Licensing Requirements

○ **Decommissioning Plan**

- s a description of the experience, resources, responsibilities and structure of the decommissioning organization, including the technical qualification/skills of the staff;
- s an assessment of the availability of special services, engineering and decommissioning techniques required, including any decontamination, dismantling and cutting technology as well as remotely operated equipment needed to complete decommissioning safely;
- s an assessment of the amount, type and location of residual radioactive and hazardous non-radioactive materials in the nuclear reactor installation, including calculational methods and measurements to be used to determine the inventory of each;
- s a description of the waste management practices



Cont... Authorization/Licensing Requirements

○ **Waste Management**

- s Identification and characterization of waste inventory by type, RN content, volume, etc.
- s Classification of radioactive waste generated
- s Proposed program for waste processing, transport, storage, or disposal
- s Application of clearance levels for reuse or recycling
- s Effluent control and discharges
- s Other considerations, as appropriate



Cont... Authorization/Licensing Requirements

- **Quality Assurance**

- s Quality assurance is part of the authorization process and is subject for periodic inspection by the regulatory group
- s The QA program shall consider the management of spent and fresh fuel



Cont... Authorization/Licensing Requirements

○ **Operational Radiation Protection**

- § The Internal Control Program clearly defines exposure limits involving sources of ionizing radiation to both radiation workers and members of the public. These limits strictly adhere to the International Basic Safety Standards (IBSS) recommendations. The regulations also prescribe the appropriate corrective measures to be implemented to control the release of radioactive materials into the environment and mitigate its effects.
- § The PRR-1 operators are required to submit radiation protection and safety program which includes functions, responsibilities, and qualification and training of individuals.
- § The PRR-1 operators are required to submit a safety analysis report to demonstrate that the facility will meet all operational radiation protection provisions in fulfillment of the requirements of the Internal Control Program



Cont... Authorization/Licensing Requirements

○ **Emergency Preparedness**

- s The PRR-1 operators are required to prepare and submit a facility emergency response plan for approval of the NRLSD
- s The level of preparedness is commensurate to the level of hazards expected in the facility



Cont... Authorization/Licensing Requirements


○ **Inspection and Enforcement**

- § The protection of individuals, society and the environment against radiological hazards related to decommissioning is subject to PNRI Policy Instruction No. 02 Series of 2001, "Radiological Health and Safety Policy" and PNRI Office Order No. 002 Series of 2004 "Regulatory Control Program for PNRI Nuclear and Radiation Facilities and Laboratories."
- § Compliance with the requirements of authorization regarding nuclear safety and security and radiation protection is verified and enforced by the Inspection and Enforcement Section of the NRLSD
- § This is done by reviewing submissions of the facility operators which includes safety analysis report during the authorization process and also by conducting inspections at anytime during decommissioning



Applicable Regulatory and Safety Standards

- The CPR PART 3 Standards for Radiation Protection is largely based on IAEA SS 115 International Basic Safety Standards.
 - ✓ Establish the standards for protection against radiation arising from the use of nuclear and radioactive materials and related activities
 - ✓ Provision for the general requirements involving waste management and disposal of licensed radioactive material
 - Storage under controlled conditions
 - Control of environmental discharges
 - Monitoring of discharges
 - Regulatory limit for airborne and waterborne discharges
 - Clearance levels for solid waste materials



IAEA Safety No. RS-G-1.7 on the Application of the Concepts of Exclusion, Exemption and Clearance

- provides guidance to national authorities, including regulatory bodies, and operating organizations on the specific values of activity concentration for both radionuclide of natural origin and those of artificial origin that may be used for bulk amounts of material for the purpose of applying exclusion or exemption and on the possible application of these values to clearance



Safety Report Series No. 44 entitled “Derivation of Activity Concentration Values for Exclusion, Exemption and Clearance”

- provides the basis for the activity concentration values for exclusion and exemption of bulk amounts of materials, which can also be used for clearance



Applicable Regulatory and Safety Standards

- CPR PART 4 Regulations for the Safe Transport of Radioactive Materials in the Philippines based on IAEA ST-R-1, Regulations for the Safe Transport of Radioactive Materials
- CPR PART 26 Security of Radioactive Sources
- Other internationally acceptable standards (IAEA, ILO, WHO, OECD/NEA, ...etc)



Non-Radiological Hazards

- Hazards associated with toxic chemicals
- Hazards associated with conventional/industrial safety
- Impacts on the general environment (noise, air and water pollution, etc)



Non-Radiological Hazards

- Coordination with Occupational Safety and Health Center under the Department of Labor
- Environmental Management Bureau under the Department of Environment and Natural Resources
- City of the Local Government

Thank you!

