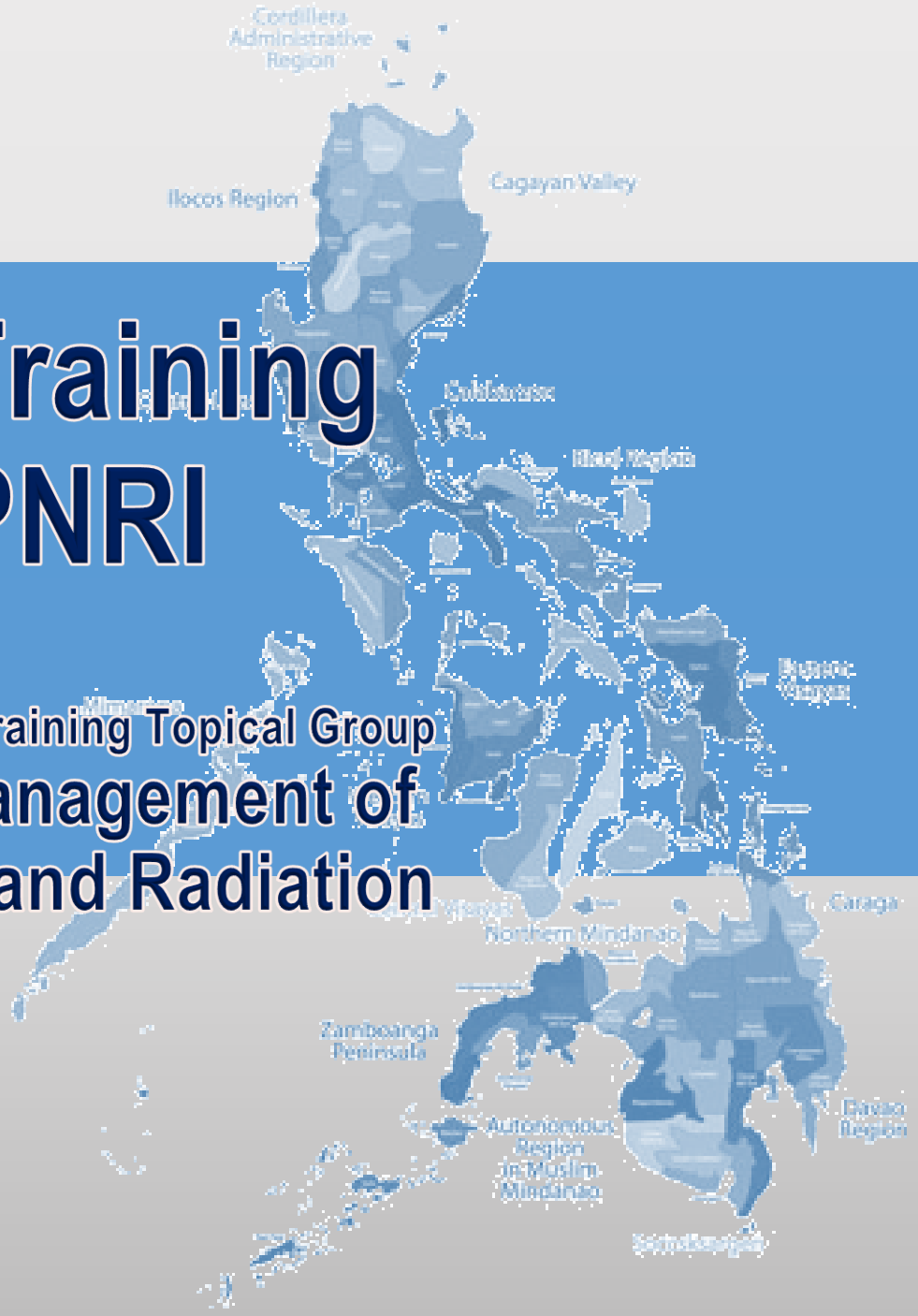
Management of Training Programs at PNRI

Asian Nuclear Safety Network Education and Training Topical Group

Regional Workshop on the Management of Training Systems for Nuclear and Radiation Safety

14-18 November 2022
Manila Philippines



Outline

I. PNRI-NRD Profile
II. PNRI-NRD Training Program

THE PNRI STRUCTURE

Department of Science and Technology

Office of the Director

- Planning Section
- International Cooperation Section

Office of the Deputy Director

Atomic Research Division

- Agriculture Research Section
- Biomedical Research Section
- Health Physics Research Section
- Applied Physics Research Section
- Chemistry Research Section
- Nuclear Materials Research Section

Nuclear Services Division

- Nuclear Reactor Operation Section
- Engineering Services Section
- Irradiation Services Section
- Radiation Protection Services
- Nuclear Analytical Techniques Application Section
- Isotope Techniques Section

Technology Diffusion Division

- Nuclear Training Center
- Nuclear Information and Documentation Section
- Business Development Section
- MIS and IT Section

Nuclear Regulatory Division

- Regulations and Standards Development Section
- Licensing, Review and Evaluation Section
- Inspection and Enforcement Section
- Nuclear Safeguards and Security Section
- Radiological Impact Assessment Section

Finance and Administrative Division

- Human Resource Management and Records and Communication Section
- Budget Section
- Accounting Section
- Property and Procurement Section
- Cash Section
- General Services Section

NRD STRUCTURE AND NUMBER OF PERSONNEL

Nuclear Regulatory Division
(2)

- Regulations and Standards Development Section (5)
- Licensing, Review and Evaluation Section (8)
- Inspection and Enforcement Section (8)
- Radiological Impact Assessment Section (6)
- Nuclear Safeguards and Security Section (4)

FUNCTIONS OF NRD

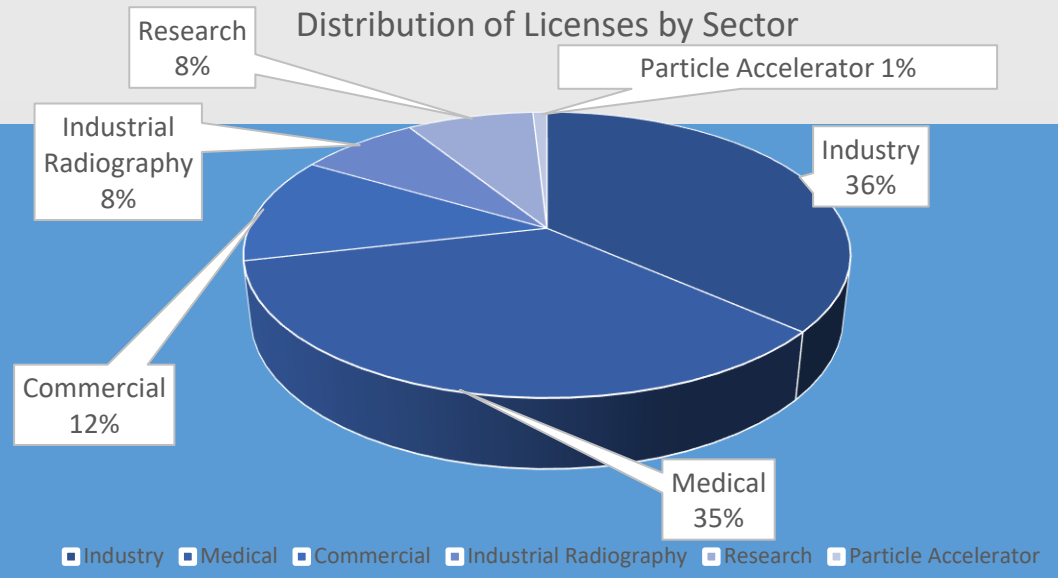
Core Regulatory Functions:

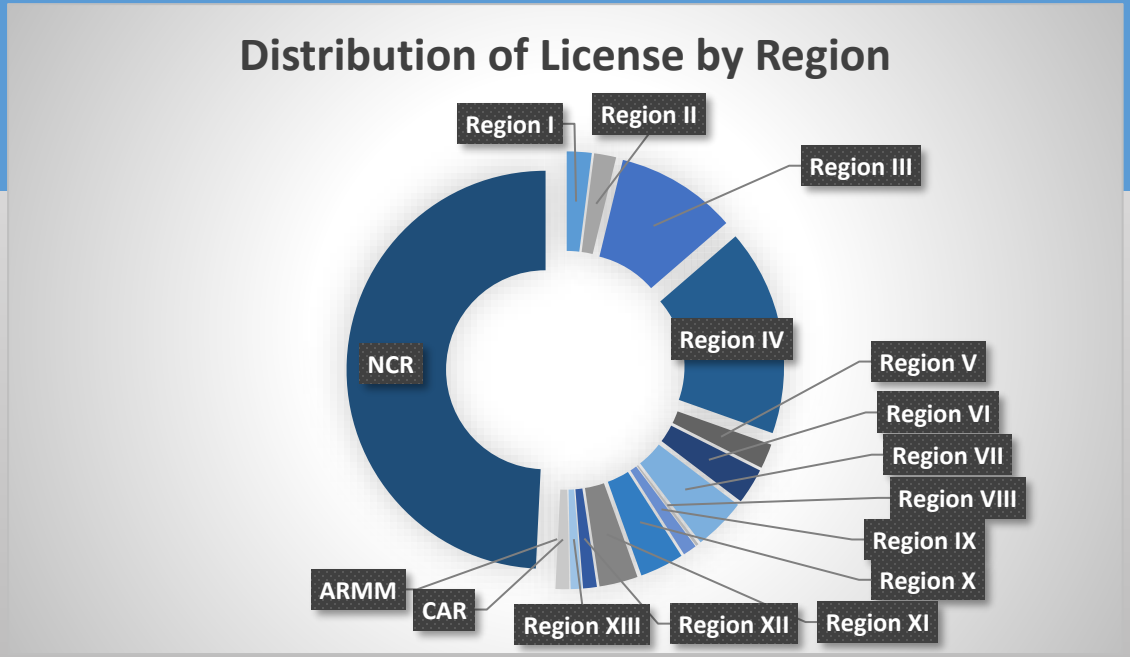
- Development of standards, regulations, and guides
- Licensing, review, and evaluation of license applications
- Regulatory inspections and enforcement
- Planning and implementation of research activities in support of regulatory activities including planning of response to radiological emergencies
- Nuclear security and safeguards

LICENSEES' PROFILE

As of December 2021

TYPE OF LICENSE	NUMBER OF LICENSEES
Industry (Y)	163
Medical (M)	156
Commercial (C)	54
Industrial Radiography (I)	34
Research (R)	36
Medical Cyclotron (PA)	4
	447





PNRI Internal Regulatory Control Program

- Establishes the rules for authorization of PNRI radiation facilities and laboratories.
- Authorization is given through the NRD Division Chief

- PNRI Research laboratories
- PRR-I facility including SATER
- Multi-purpose Irradiation Facility
- PNRI SSDL Facility

PNRI-NRD Training Program

- Through the INSC Project PH 3.01/09 (PH/RA/01) which was a technical assistance project aimed at improving the legal framework for nuclear safety and strengthening capabilities of the regulatory authority of the Philippines
- Applied past knowledge gained through IAEA trainings on Systematic Approach to Training and Gap Analysis
- Based on the anticipation that the Philippines will be embarking on an NP program
- First cycle planned for 2016 - 2021

PNRI-NRD Training Program

ANALYSIS	DEVELOPMENT	DESIGN
Identified Current and Future Tasks for each section Conducted Gap Analysis through modified SARCON Tool	Identified training needs and objectives based on analysis results Identify staff groups for training according to tasks and level of competence	Identified Existing Training Possibilities - through courses at the PNRI Nuclear Training Center - University courses within the Philippines - trainings through international cooperation and projects (IAEA, INSC, JAEA)

PNRI-NRD Training Program

IMPLEMENTATION	EVALUATION
Not formally implemented but used as a guide for sections to implement individual training plans for staff	Identified Effectiveness Indicators

PNRI-NRD Training Program

Current NRD tasks

- Development of regulations and standards
- Licensing, review and evaluation
- Inspection and enforcement
- Nuclear safeguards and security
- Radiological impact assessment and emergency preparedness

Future tasks

- Siting criteria and review of siting applications
- Waste management and waste repositories
- Environmental impact assessment for NPP and repositories
- NPP regulations relevant for design review

PNRI-NRD Training Program

Objective

to identify the training needs of the NRD and to enhance the competences and capabilities by appropriate training to NRD staff.

PNRI-NRD Training Program

Proposed Training Plan for 2016 - 2018

AREA	STAFF	MODE	DURATION
LICENSING MANAGEMENT, BASIC SAFETY CONCEPTS AND DECISION MAKING		Workshop	1 week
SAFETY REVIEW AND ASSESSMENT INCLUDING PROCESSESS AND PROCEDURES (SITE APPROVAL & CONSTRUCTION)			1 week
RADIOLOGICAL ENVIRONMENTAL IMPACT ANALYSIS		Workshop	1 week
REGULATORY OVERSIGHT DURING SITING AND CONSTRUCTION PHASE		Workshop	1 week

Additional Recommendations

to develop and implement a general training course for nuclear regulators

to develop specific training for inspectors and reviewers.

PNRI-NRD Training Program

Existing Training Possibilities

Table 8. **PNRI existing Radiation Safety Courses and relevant trainees**

Existing PNRI - Radiation Safety Courses	Target groups
Radiation Safety Course - Sealed Sources in Industrial Devices (RSC-ID)	For staff members involved or who will be involved in the use of Category 3 and 4 radioactive sources in fixed and portable industrial devices, e.g. level gauges, conveyor gauges, spinning pipe gauges, thickness/fill-level gauges, moisture-density gauges and static eliminators
Radiation Safety Course – Industrial Radiography (RSC-IR)	For staff members involved or who will be involved in the use of gamma radiography on-site and in shielded enclosures
Radiation Safety Course – Commercial Sale Involving Radioactive Materials and Low Activity Sources (RSC-CL)	For staff members involved or who will be involved in the acquisition and possession of RAM and devices containing RAM intended for commercial sale and distribution; and those involved in the use of Category 5 radioactive sources, e.g. Ni-63 in ECD, XRF analyzers, calibration/standard sources used in research and education
Radiation Safety Refresher Course (RSRC)	For staff members involved in the use of radioactive sources in medical/ industrial field who need refresher training in radiation safety
Radiation Safety Course –Medical Use of Radioisotopes (RSC-MR)	For staff members involved or who will be involved in the use radioisotopes in the medical field e.g. nuclear medicine, teletherapy, brachytherapy, blood/ tissue irradiators, e.g. nuclear physicians, biological scientists, medical and radiological technologists, and nuclear pharmacists

PNRI-NRD Training Program

Example Implementation: Licensing, Review, and Evaluation Section

Staff Position	Training Activities	Tasks	Available Training
Entry/ Junior	a. Basic Training in Radiation Safety	Secretarial tasks	RSC-ID, CRT
	b. Shadowing and mentoring, observation during inspections	Evaluation of Simple applications	
Intermediate	Specialized Training in Radiation and Safety, Training on Nuclear Safety, Training on Legal and Regulatory Framework, Train the Trainers Training, On-the-Job training	Evaluation of Simple and Complex applications Team Lead for pre-licensing inspections Membership in special regulatory activities	BPTC, PGEC, INSC Trainings, FTC, ITC
Senior	Leadership and Management Trainings	Team Lead for Facility License Applications Team or Project Lead for special regulatory activities	INSC and IAEA trainings

PNRI-NRD Training Program

Effectiveness Indicators

Effectiveness indicators	Tools for measuring EI
Improved level of task performance	Individual self-assessment performance rating (training assessment rating/evaluation), (job performance rating)
Improved quality	Customer satisfaction (according to QMS)
Time effectiveness	Deadlines keeping (according to functional objectives of the section)
Errors decrease	Preventive action/corrective action undertaken as per commitment date
Enhanced capacity to perform new task(s)	Percent involvement in other regulatory tasks

Challenges and Considerations

- on-boarding of all concerned personnel
- need for local training tailored for regulators
- regular updating (Gap Analysis currently being updated through the PNRI-instituted CAAT)
- Institutionalized and uniform implementation
- Strengthen succession plan and knowledge management
- Balance of staff preference and organization needs
- PNRI dual mandate


Maraming Salamat!
Thank you!
Philippine Nuclear Research Institute