



Pakistan Nuclear Regulatory Authority

Advances in Competence Needs Assessment at PNRA

by

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Outline

- **In this presentation we will briefly describe the CNA exercise that concluded in 2021 in PNRA .**



Introduction

How to develop competent manpower for RB?

- **SARCoN gives guidance for:**
 - **Analysis of required and existing competences**
 - **Training/development needs for the staff of regulatory body.**
- **Competence Needs Assessment (CNA)**
 - **Assesses the required and existing competences of an organization**
 - **Can be conducted on an individual, directorate or organisational level**
 - **Utilizes 4 quadrant areas**



Quadrant Competence Model

1. Competences related to the legal, regulatory and organizational basis

- 1.1 Legal basis
- 1.2 Regulatory policies and approaches
- 1.3 Regulations and regulatory guides
- 1.4 Management system

2. Competences related to technical disciplines

- 2.1 Basic Science & Technology Competence
- 2.2 Advanced Science & Technology Competence
- 2.3 Specialized Science & Technology Competence

3. Competences related to regulatory body's practices

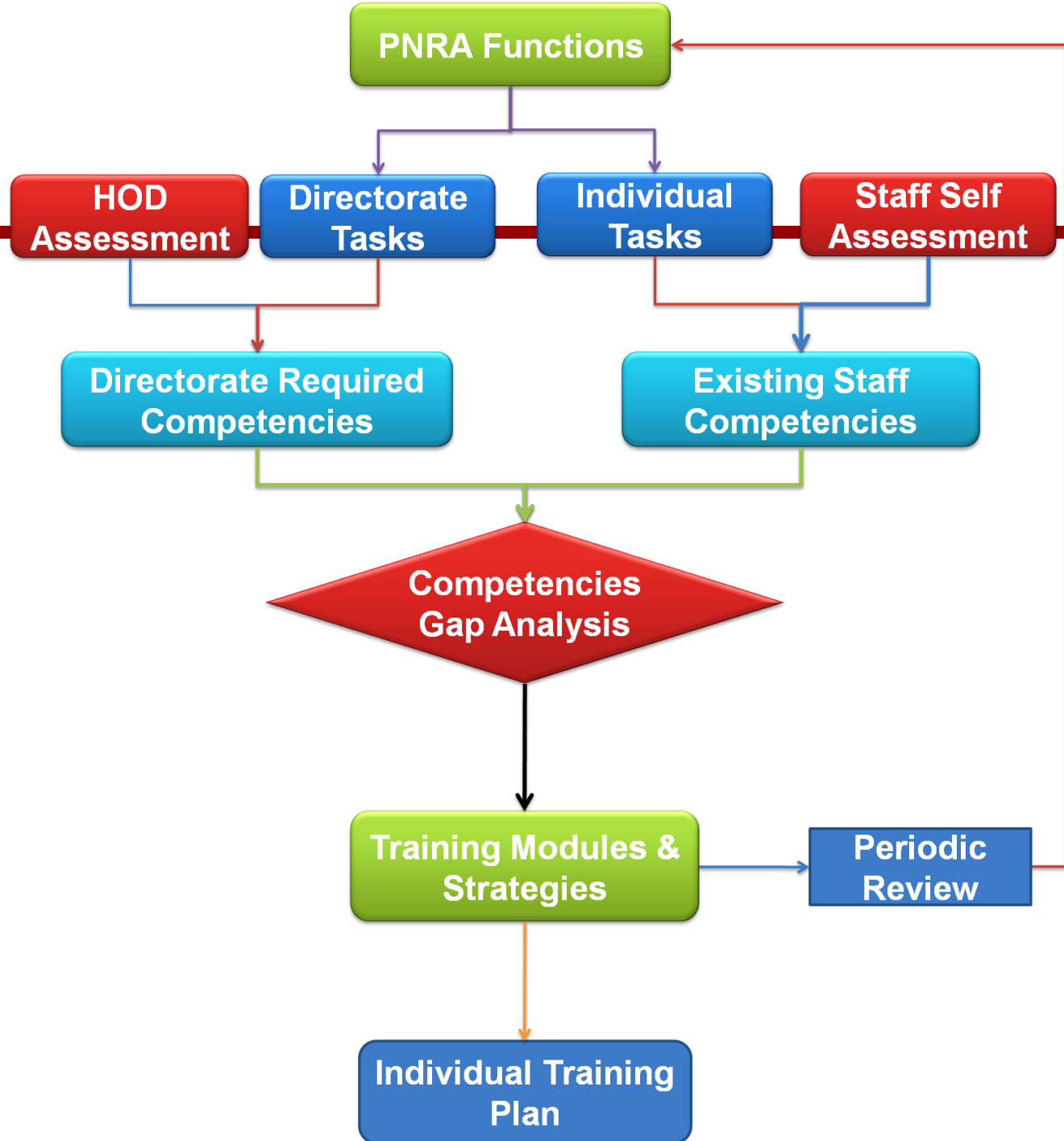
- 3.1 Review & Assessment
- 3.2 Authorization
- 3.3 Inspection
- 3.4 Enforcement
- 3.5 Development of regulations and guides

4. Competences related to personal and interpersonal effectiveness

- 4.1 Analytical thinking and problem solving
- 4.2 Personal effectiveness and Self Management
- 4.3 Communication
- 4.4 Team work
- 4.5 Management and Leadership
- 4.6 Safety Culture



PNRA TNA Steps

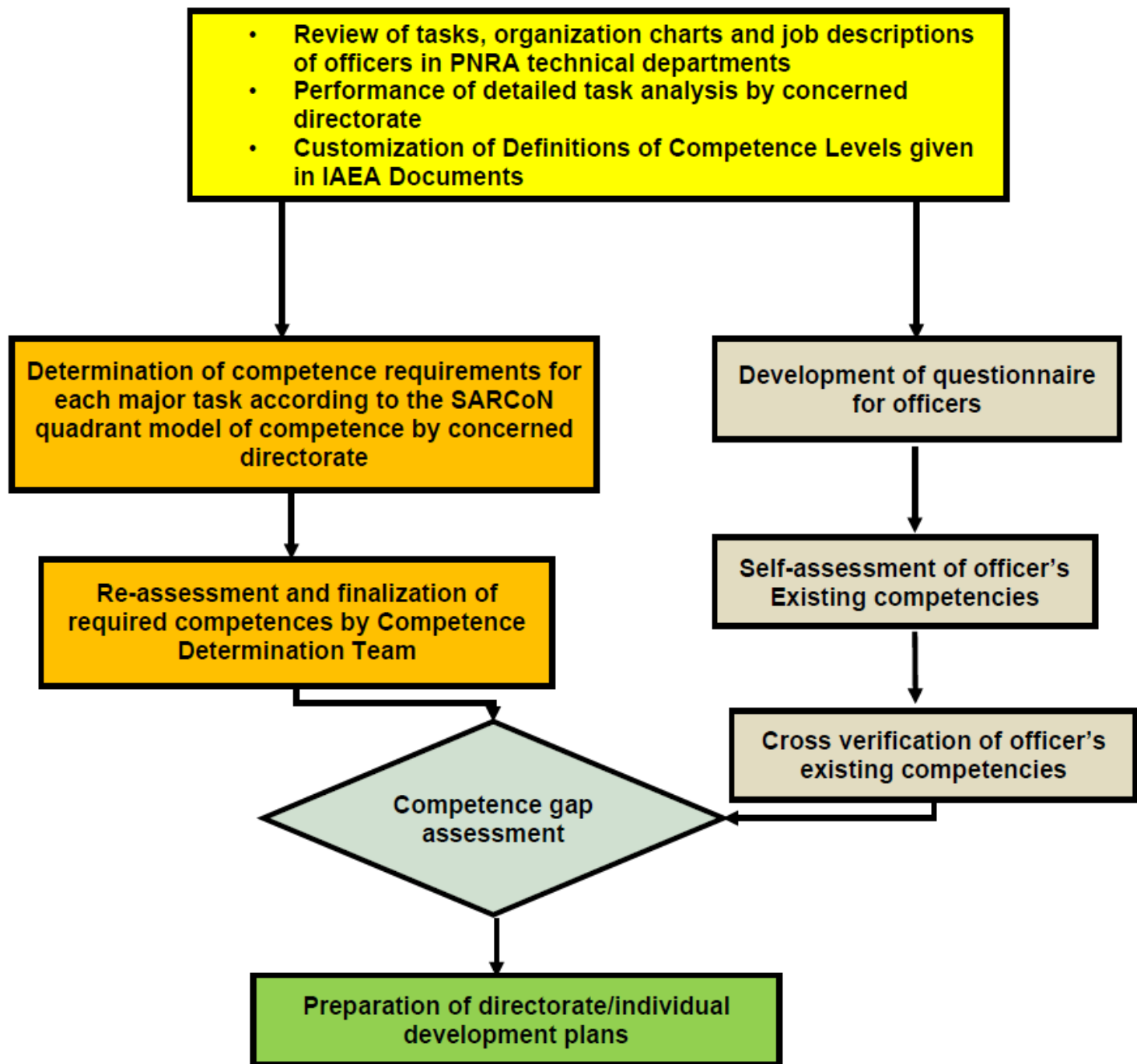




Objectives of CNA

- **The CNA exercise was intended to provide a systematic basis for planning and implementing competence development efforts in the fields of nuclear and radiation safety for the next ten years at least.**
- **The CNA was supposed to reflect technological advancements in the licensed facilities/activities as well as new additions in PNRA jurisdiction (like safety class I&C design and manufacturing) as well as new challenges (like NPP decommissioning, spent fuel transportation and storage, nuclear fuel fabrication, etc.).**
- **At its core, CNA was supposed to connect current and anticipated PNRA activities with the competence and responsibility of all technical officers and empower them through new knowledge and skills.**

PNRA CNA Steps





Stage 1: Preliminaries (1/2)

- **Review of approved task list, organization chart and job descriptions of officers** for each PNRA Technical Department. This step aided in improved process planning. For e.g. it was decided to re-use the competence requirements identified for a given directorate if the same tasks were also performed by another directorate located in a different geographical location.
- **Process planning** (phasing; key milestones; due dates; plan of attack; etc.)
- Proposal for **composition of teams** to be tasked **to finalize competence requirements**.



Stage 1: Preliminaries (2/2)

- A team of **experienced senior officials** (in-charge of multiple work teams / departments was **to review / revise and sign off on the required competences** for each Directorate
- **Performance of detailed task analyses** by concerned department



Stage 2: Specification of competence requirements

- Competence requirements were determined at the **sub-quadrant level**, for each major regulatory task for each of the following workforce categories:
 - **Junior Team Member**
 - **Senior Team Member**
 - **Group Head**
 - **Director**
- First, suggestions for these were solicited from the concerned directorate itself
- Re-assessment and finalization of required competences was done competence determination team.



Stage 3: Documentation of Existing Competencies (1/2)

- For the CNA, PNRA utilized a single, comprehensive KSA questionnaire developed **in the light of detailed task analyses, SRS- 79, Tecdoc 1757 and Tecdoc 1860**
- **The single questionnaire** ensured documenting of all existing competencies of an individual **without regard to current place of posting or assignment** - for future use in career planning, succession planning, etc.
- **More than 250 officers documented their existing competences** by filling the CNA questionnaire.



Stage 3: Documentation of Existing Competencies (2/2)

- Rollout of questionnaire required **training sessions for the officers to explain how to self-assess the competencies** and back-up the assessments with supporting statements of evidence.
- **Self-assessment of existing competence** at the KSA level was done by by each officer of a directorate
- **High-level verification**, cross-checking through re-assessment of above at the sub-quadrant level was done **by their immediate supervisors**



Stage 4: Competence Development Planning (1/2)

- For each individual officer, **competence requirements that had been specified at the sub-quadrant level were mapped onto individual KSA statements**, keeping in view current JD of each officer.
- **Gap assessment** was performed, giving due importance to self-assessment done by the officer/department, competence requirement, evidence of expertise-level of the officer, job position and seniority level.



Stage 4: Competence Development Planning (2/2)

- **Competence development (CD) plan for each officer**, identifying Learning Topics (i.e. knowledge domains and specialist areas) was developed and shared with concerned officer and supervisor for review, was approved after this process.
- **Specialized trainings recommendations (reflecting the old as well as new tasks** like NPP decommissioning, spent fuel transportation and storage, nuclear fuel fabrication, etc.) were specified in CDPs. IAEA Nucleus portal was especially analyzed to identify an array of relevant and specialized learning topics.



CNA Results Implementation

- **CNA results were reported in the form of department-wise list of learning topics.** With each learning topic was mentioned a list of officials requiring that training.
- The learning topic is matched with a suitable training mode such as:
 - Self-study or E-learning
 - Classroom based (in-house training at NISAS)
 - On-job training within PNRA
 - Training at other external national institution
 - Competence to be acquired through international cooperation



Conclusion

- **Three key measures** have been implemented during CNA at PNRA:
 - Senior officials made responsible to collectively set the competence requirements
 - Performance of detailed task analysis prior to specification of competence requirements
 - Customization of KSA questionnaire
- This has provided **standardized competence requirements**, as well as extensive data and **evidence-based ranking of existing KSAs** of PNRA officials
- Such rich information will **enable better career and competence development planning at PNRA.**