FANR Knowledge Management Journey

Shaima Al Mansoori
Director
Education & Training Department

GNSSN Plenary Meeting
IAEA General Conference 20.09.2017
Outline

• Introduction.
• Organizational Context.
• Managing the Knowledge.
• Knowledge Acquisition & Generation.
• Competence Management.
• FANR KM achievements in the past years.
Introduction

FANR officially started the establishment and development of Nuclear knowledge Management (NKM) program in 2011. During the past six years, the program went through different challenges, obstacles and successes.

**Challenges examples:**
- Challenges like preparing for identifying critical knowledge required in the operation phase period
- Identifying and capturing all the establishment phase and construction critical knowledge.

**Solutions examples:**
- Management awareness about the challenges and working as one team with internal and external stakeholders to solve them in priority biases.
- Coming up with innovative initiatives and practices considered as new solutions in the field of KM practices like Knowledge Resource Matrix.
Organizational Context
Organizational context

- Knowledge Management program is managed through Knowledge Management section under Education and Training Department (ETD).
- As of today the stakeholders of KM Program are other sections in ETD, Human Resource Department (HR), IMS program, operation departments, KUST and IAEA.
Organizational context

The relationship between KM and E&T:

- KM program is acting as one of the inputs for the ETD through the results of identifying the critical knowledge which to be transferred through training.
- ETD is acting as one of the inputs for KM to identify the subject matter experts and their roles in business processes to mitigate the risk of losing critical knowledge.

The relationship between KM and HR:

- KM and HR just started this year to draw the cooperation points in terms of linking Knowledge transfer and knowledge sharing activities among the employees with performance appraisal.
- Also considering contributing to the responsibilities of knowledge Management via including some obligations in the job descriptions like mandatory hours of sharing knowledge per year.
Organizational context cont.

The relationship between KM and IMS:

• The relation started in 2011 and it is progressing where now both programs employees are working together to integrate KM process and procedures with other processes and procedures under the management of IMS. This relation will assure maximizing the knowledge flow between the targeted employees, capturing the processes knowledge of operation departments and assure business sustainability.

The relationship between KM and external stakeholders:

• KUSTAR and IAEA as external stakeholders are important knowledge partners in disseminating awareness and transferring knowledge about Knowledge Management implementation activities through Nuclear Knowledge Management school, virtual networks and other activities particularly agreed with IAEA.

The relationship between KM and R&D:

• According to the UAE Federal Law by Decree No 6 of 2009: FANR shall carry out and support research and development studies relevant to the scope of work of the Authority and initiate, coordinate and follow up with other authorities Safety related research and development works.
Organizational context cont.

The relationship between KM and R&D:

- To fulfill the above orders FANR drafted the Research Policy and a new procedure under preparation: CP4. “Planning, Organising, Conducting and Evaluating the Annual Research Programme”. The R&D activities will be coordinated by the Education and Training Department.

- Memorandum of Understanding was signed with Khalifa University, UAE and with international organizations, e.g. KAERI, IRSN, US-NRC for exchange of scientific and technical information.

- FANR is participating in selected NEA Activities.
KM Program Challenges.

- Understanding Nuclear Knowledge Management and the purpose of it for FANR.
- The program late by two years from FANR establishment date.
- Increasing the awareness about the benefits of the program while developing the KM program infrastructure.
Managing the Knowledge
Managing the Knowledge
Coming over the challenges. 1/2

- FANR Management support.
- Seconded in IAEA.
- Increasing the awareness and gradually introducing the KM initiatives and tools.
- Utilizing IAEA NKM services like NKM and NEM schools.

The role of KM to support the FANR Vision:
“To be Globally Recognized as a Leading Regulator”
Managing the Knowledge
Coming over the challenges. 2/2

- Cooperate and collaborate with partners.
- Seeking IAEA support for assessment and benchmarking with other NKM programs.
- Having clear strategic and operational plans.
- Keep reviewing and evaluating the KM program progress.
Managing the Knowledge.
Structure of ETD
Managing the Knowledge. FANR KM Processes.

1. Critical Knowledge Assessment
2. Knowledge collaboration
3. Collaboration / Capture
4. Store & Preserve
5. Share & Apply
6. Maintain
Managing the Knowledge.
Integrating KM into IMS Processes.

1. Dept Directors/Managers, E&T Dept and process owners, Departments in collaboration with E&T will identify the need for training courses.
2. Process owners will use the Knowledge Identification Procedure to identify the required knowledge to sustain this process function.
3. Process owners will maintain and update the Knowledge Resource Matrix regularly as needed.
4. E&T Dept, Initiator of Training Request: E&T will review the training needs and define the program and objectives with the initiator of the training request.
5. E&T Dept, Dept Directors/Managers: Determine if off-site training can be conducted.
6. E&T Dept, Dept Directors/Managers: Identify an external Subject Matter Expert that can deliver the training. Approach SME and discuss the scope of the training as identified in 1 and 2.
7. Employee Attends Training
8. Evaluation of Training by Employee and E&T
9. Review Knowledge Resources
10. Closure Report and redesign of course
11. Feedback Form

After completion, E&T Dept sends out the Learner Evaluation Form to the employee for completion.

9. E&T Dept, Trainers: Using the SAT procedure, the trainer prepares a closure report and submits to E&T Dept for evaluation of training effectiveness. Should training redesign be required, E&T Dept will forward this recommendation to the trainer for future enhancements.

Process Owner and Knowledge Management Team will review the Knowledge Resource Matrix to identify whether the Knowledge Capturing Procedure should be implemented.
Managing the Knowledge. Integrating KM into IMSProcesses. Current status and way forward.

• One approved process (SP8) and 7 in approval process (CP1, CP3, CP5, CP6, CP7, CP8 & MP7)
• Integrated knowledge management elements with the process steps in the beginning and end of the process.
• One postponed process (CP2), due to major enhancement.

Next steps:
• Processes owners monitor changes in identified knowledge resources.
• Coordinate with other E&T sections to use the KRM for capacity building.
• Consider KRM while conducting Knowledge Loss Risk Assessment (KLRA).
• In coordination with HR support Line managers in workforce risk Management for cases related with Critical Knowledge Loss.
Knowledge Acquisition & Generation.
## Knowledge Acquisition & Generation. Knowledge Resource Matrix

<table>
<thead>
<tr>
<th></th>
<th>Human Capital (Competences)</th>
<th>Structure Capital (K-products, documents, Standards)</th>
<th>Relationship Capital (organization, Individuals related processes/procedure and work instructing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal, regulatory, organisational knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of technical disciplines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of FANR’s Practices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal and behavioural competences</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Why do we need a Knowledge Resource Matrix?**

A tool to determine the necessary knowledge, to review the availability of this knowledge in the extent necessary and to define measures for the maintaining and development of the knowledge needed.

**How is the Knowledge Resource Matrix applied?**

Knowledge Resource Matrix is always used at the beginning of the processes and periodically to check the availability of the knowledge necessary for the process implementation and if necessary to take actions to create or acquire missing knowledge. Also it will be used as a record document for process related knowledge and knowledge networks for the purpose of business continuity and sustainability. Also, it will be used as reference document for to training and knowledge transfer propose.

**What is the benefit of a Knowledge Resource Matrix?**

Provides transparency of the required knowledge and helps to identify knowledge gaps.

It helps to assess the knowledge loss risks and to transfer knowledge, when an expert leaves the organization. As knowledge loss is reduced the sustainability of the performance is improved.

It provides guidance to new staff, helping them to understand the requirements in the process as well as the available internal and external knowledge resources. Furthermore is helps the Knowledge Portal Manager to provide the suitable knowledge infrastructure and to make the knowledge accessible. Contribute to training needs analysis, business continuity and sustainability and to establishment of the competency framework.
Knowledge Acquisition & Generation.

- Knowledge capturing through video
- Leaving Expert Debriefing
- Mission reports
- FANR Library and Learning Center
- Pressurized Water Reactor Generic Simulator.
- FANR (KM) Portal
- Story telling
Knowledge Acquisition & Generation. COEF* Databases.

*COEF=Construction and Operating Experience Feedback
Competence Management.

“Competencies are groups of related knowledge, skills and attitudes (KSAs) needed by a person to perform a particular job.” IAEA TECDOC 1254.

The development based on the IAEA-TECDOC-1757 Methodology For The Systematic Assessment Of The Regulatory Competence Needs (SARCON) For Regulatory Bodies Of Nuclear Installations (Four quadrant model).

A structured and interrelated templates were prepared for each elements of the Competence Framework.

- Job Family
- Competency Matrix
- Generic Descriptions of Five Levels of Competence
- Competence Level Indicators
- Competency Profile
- Job Description
- Development & Training Requirements
- Employee Profile
### Competence Management.

**Employee Assessment.**

- Assessment **Form**
- Self Assessment
- Read the definitions carefully and select the level that **Fully** applies to you.
- For proficiency levels three and above the employee should have demonstrated his ability by actually performing described tasks.
- The statements used to describe the different levels are not inclusive of all indicators but will be a useful reference to use.
- Theoretical knowledge only is not enough to place an employee at the desired level.

---

<table>
<thead>
<tr>
<th>Competence</th>
<th>Competency Level</th>
<th>Competency Level</th>
<th>Competency Level</th>
<th>Competency Level</th>
<th>Competency Level</th>
<th>Competency Level</th>
<th>Competency Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Safety and Health</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
</tr>
<tr>
<td>2. Legal and Regulatory Affairs</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
</tr>
<tr>
<td>3. Organizational Skills</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
</tr>
<tr>
<td>4. Management of Resources</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
</tr>
</tbody>
</table>

---

**Job Description Template**

- **Job Title:** Senior Engineer, Inspections
- **Department:** Operations/Inspections
- **Grade:** T5
- **Job Code:** 43

---

**Role Summary**

(Why does the position exist, WHAT will it accomplish and WITHIN what boundaries?)

Carrier-out routine and specialized inspection activities of nuclear facilities/activities. Establishes plant performance measures for use in safety evaluations and programs inspection activities. Decides the most effective and efficient ways of achieving organizational objectives and goals, in consultation with management. Implements corrective actions to rectify deviations in the inspection activities. Changes/updates the inspection plan due to arising circumstances. Develops procedures and directives to ensure effective conduct and administration of the inspection program. Reviews and evaluates nuclear power plant administrative controls for safety committees, audits, independent engineering group, procedures and records. Determines and recommends enforcement actions following detection of non-compliance in a timely and defensible manner and determines whether other regulatory processes (such as inspection) are needed in order to support an enforcement action. (Reviews and produces assessment reports on the safety of a facility or activity, and identifies the need for further information in relation to review and assessment. Prepares reports for management to support decisions for enforcement action. Identifies the need for and drafts new regulations/guidelines or amendment of existing regulations/requirement to meet technical and legal requirements. Implements various investigation techniques, as necessary. Participates in emergency situations for radiological and/or nuclear incidents including events planning.

---

**Impact**

Financial: **Non-Financial: **

**Interactions**

External: **Internal: **

**Main Accountabilities and Tasks**

- Demonstrates practical knowledge of the above tasks and applies independently undertake range of typical
FANR KM achievements in the past years.
Meeting the US Nuclear Regulatory Commission (NRC) to discuss and to exchange best practices and experience in capacity building, and knowledge Management.

Collaboration/sharing experiences with IAEA in NKM schools.
IAEA NKM Assist Visit in 2014.
Participated in IAEA Capacity Building workshop
Participating in a CS on Implementing KM in IMS.

Benchmarking and sharing experience with National Stakeholders such as MOI and other International Regulators

Related business management systems that support NKM program implementation are IMS, EDMS and Basic KM portal.

Excellence recognition: NKM program achieved First Excellence Award in FANR in May 2015. The award was part of The 20th Middle East smart Government and smart Services Excellence Awards for the Category of “Corporate Knowledge Management Initiatives Excellence Award”.

FANR KM achievements in the past years.
FANR KM achievements in the past years.
First Excellence Award in FANR
In 19 of May 2015.
Thank you