A Coordinated Approach to Nuclear Knowledge Transfer

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Overview

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The Challenge

Building a competent human resource through efficient Nuclear Education and Training is the critical element of any future nuclear development strategy

“Yanko Yanev, IAEA”

- ENEC Corporate Staff
- Nuclear Operator Plant Staff
- Regulator Staff
- Education Staff

2008 2020
Knowledge Management Elements

KM Policies
and
Strategies

KM Methods
and
Techniques

IAEA TECDOC-1510
IAEA KM Assessment for Nuclear Organizations

Policy/Strategy
Human Resource (HR) Planning and HR Processes
Methods, Procedures & Documentation Processes
Technical (IT) Solutions
Approaches to Capturing Tacit Knowledge
KM Culture/Workforce Culture
Competence Development
External Collaboration
Knowledge Management Elements

**KM Culture**
- Promote transfer of knowledge
- No blame culture
- Lead by example
- Knowledge sharing rewards
- Individuals and teams

**HR Planning & Process for KM**
- Workforce planning
- Succession planning
- Knowledge Risk assessment
- Exit interviews
- Talent programme
- Competency Assurance Scientists
- Competency Assurance Technicians

**External Collaboration**
- Higher education
- Teaching in higher education
- Other R&D institutions
- Teaching in R&D organisation
- Joint seminars
- Joint research projects
- COPs

**Extent Desired**
- Workforce planning: 4
- Knowledge Risk assessment: 4
- Exit interviews: 4
- Talent programme: 4
- Competency Assurance Scientists: 4
- Competency Assurance Technicians: 4
- Higher education: 4
- Teaching in higher education: 4
- Other R&D institutions: 4
- Teaching in R&D organisation: 4
- Joint seminars: 4
- Joint research projects: 4
- COPs: 4

**Extent Currently**
- Workforce planning: 1
- Knowledge Risk assessment: 1
- Exit interviews: 1
- Talent programme: 1
- Competency Assurance Scientists: 1
- Competency Assurance Technicians: 1
- Higher education: 1
- Teaching in higher education: 1
- Other R&D institutions: 1
- Teaching in R&D organisation: 1
- Joint seminars: 1
- Joint research projects: 1
- COPs: 1
An Integrated Approach to Capacity Building

Create a Talent Pool for Emiratization of the Nuclear Industry

Requirements
- ENEC Corporate Staff
- Nuclear Operator Plant Staff
- FANR Staff
- Education Staff

Considerations
- Technical Competencies
- Specific Industry Needs
- Timing of Resource Needs
- UAE Education System Capacity

Tactics
- Accredited University Partnerships
- Development of Nuclear Training Institute
- Global Nuclear Business Relationships
- Universities Labs & Research
- Recruiting, Staffing, and Talent Pipeline

Fill the Talent Pipeline with Technically Qualified Local Expertise
**Staffing – The Knowledge Transfer Challenge**

**Strategy Creates Talent Pool for Emiratization of the Nuclear Industry**

<table>
<thead>
<tr>
<th>Requirements</th>
<th>ENEC Corporate Staff</th>
<th>Nuclear Operator Plant Staff</th>
<th>FANR Staff</th>
<th>Education Staff</th>
<th>UAE Nuclear Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staffing Ranges*</td>
<td>200 to 400</td>
<td>1100 to 1300</td>
<td>135 to 165</td>
<td>30 to 40</td>
<td>To Be Determined</td>
</tr>
</tbody>
</table>

An Initial Opportunity Estimate of 2100 to 2300 Staff by 2020
The UAE Nuclear Energy Scholarships

Capacity Building Scholarships

Central to UAE Capacity Building effort

- Applies to both Bachelors and Masters degrees
- Students receive full tuition and benefits
- Expectation of working in FANR/ENEC/KUSTAR upon graduation
Korean Dimension

Programs

- Nuclear Power Tech.
- Nuclear Fuel Cycle
- Research Reactor
- Radiation Tech.

- Safety Assessment
- Licensing
- Inspection

- Project Management
- Operation
- Maintenance

- Programs for BS, MS and PhD Degree

National Collaboration

- Nuclear Training and Education Center
- International Nuclear Safety School
- KAERI
- KINS
- KHNPC
- Universities
- Nuclear Power Education Institute
- National Collaboration System

UAE Collaborations

- ENEC
- FANR
- KUSTAR

Universities

Nuclear Engineering Departments

NQe

KAIST
Knowledge Management Elements
Are we there yet?

Desired Maturity

- Safety Culture / KM alignment
- Design rationale
- Continuous learning
- External Technical Services
- Responsibilities for KM strategy
- Communication of KM Policy
- Integration of KM policy
- IP Policy
- Security of knowledge & information
- KM Policy
Thank you