IAEA NKM Activities for Capacity Building

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What is a Knowledge Management?

- Effective knowledge processes and ensure adequate knowledge assets as needed to achieve organizational goals

The Information Lifecycle
What is a Knowledge Management?

- The discipline that acknowledges that people are just a temporary part of many processes and projects
  - Particularly relevant for industries such as nuclear
What do Member States want the IAEA NKM Section to do?

Scope of NKM Support to Member States

<table>
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<tr>
<th>National Level</th>
<th>Organisational Level</th>
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<td>The wider educational requirements on a national or regional level</td>
<td>Specialist missions including knowledge management support across a range of organisations; TSOs, government organisations, NPP operators, universities, regulators etc</td>
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National Level

Nuclear Knowledge Management School
One week online study
One week residential

Nuclear Energy Management Foundation School
Foundation or Advanced
One week online study
Two or one week residential

Educational Networks
ANENT, LANENT, AFRA-NEST
STAR-NET
ENEN, UNENE, BNEN, NTEC
Organisational Level

- Knowledge Management Assist Visits
  - Nuclear organisations
  - Nuclear facilities
  - Universities

- Knowledge Management Methodology, Processes and Techniques
  - Document publishing
  - Webinars
  - NKM Digital Hub

- International Nuclear Management Academy (INMA)
  - MSc Nuclear Technology Management
  - Programme endorsement
  - University membership
NKM School Curriculum

Integrated Approach to Nuclear Knowledge Management
- Introduction to an Integrated Approach to NKM
- Planning and Modelling for NKM
- Knowledge Movement Through and Organisation
- Succession Management
- Coaching and Mentoring for NKM

NKM Tools and Techniques
- NKM Risk Assessment
- Knowledge Capture Methods
- NKM Self-Assessment
- Competency Mapping
- Information Management

NKM as a Business Management Tool
- Definition and Main Principles of a Knowledge Sharing Culture
- Importance and Motivation and Communication in NKM
- Assignment and Description of NKM Roles and Responsibilities
- Introduction of the Main Milestones of NKM Implementation
- Indicators for a Comprehensive NKM System
- Use and Importance of Lessons Learned and Corrective Action Programmes

Practical Examples
- Theory into Practice
- Case Studies
- Project Work
## Schools’ History and Statistics

<table>
<thead>
<tr>
<th>NKM School</th>
<th>NEM School</th>
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<tr>
<td>• Since 2004</td>
<td>• Since 2010</td>
</tr>
<tr>
<td>• 29 NKM Schools</td>
<td>• 45 NEM Schools</td>
</tr>
<tr>
<td>• 12 hosted by 7 Member States</td>
<td>• 32 hosted by 8 Member States</td>
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<tr>
<td>• 17 IAEA/ICTP joint schools</td>
<td>• 12 IAEA/ICTP joint schools</td>
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<tr>
<td>• ~1100 participants from over 80 MSs</td>
<td>• 1 ENEN/IAEA joint school</td>
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<tr>
<td></td>
<td>• ~1800 participants from over 104 MSs</td>
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Regional Education Networks

- Facilitate Regional and Inter-Regional Networking in Nuclear Education
  - Promote cooperation on educational experience and resources
  - Establish a forum to discuss policies and strategies for education and training
  - Sharing best practices and lessons learned
  - Overcoming limited funding and/or resources in the establishment and delivery of national nuclear educational programmes
  - Distance / online learning using LMS
  - Development of educational materials on STEM and the applications of NS&T to be introduced in school curricular activities

2004 2010 2013 2015
Knowledge Management Assist Visits

- Designed to assist Member State nuclear organizations to have pragmatic knowledge management methodologies that can contribute to both safety and business objectives;

- Reviews the existing knowledge management practices of a nuclear organization using an IAEA developed self-assessment methodology;

- Provides recommendations based on gaps identified with a focus on adding value to the business.
Knowledge Management Assist Visits

**Level 1 - KM Awareness and Orientation**
An introduction to knowledge management to help establish strategy, policy and future work areas

**Level 2 - KM Implementation**
To perform an independent knowledge management maturity assessment using the IAEA self-assessment tool and identify actions to implement KM activities/programme

**Level 3 - KM Expert Assistance**
To provide specialized support on specific knowledge management areas such as improving mentoring and coaching activities or IT infrastructure to facilitate KM, knowledge loss risk etc.
KM Maturity Assessment

Area 1: Policy and Strategy
Area 2: Human Resource Processes
Area 3: Training and Competence Development
Area 4: Methods, Procedures and Documentation Processes
Area 5: Technical Solutions
Area 6: Capture, Retention and Transfer of Knowledge
Area 7: Organizational Culture
Area 8: Collaboration
Knowledge Management Assist Visits for Universities

Level 1 – Programme Establishment
Nuclear education programmes are relatively few or evolving and an introduction to their implementation is required.

Level 2 – Programme Support
Active nuclear education programmes that need assistance in their general implementation and optimisation.

Level 3 – Programme Appraisal
Specific high-level assistance to optimise and enhance education programmes to ensure their sustainability. They are also used to collect best practices.
Knowledge Management Perspectives on Outsourcing in Operating Nuclear Power Plants
Welcome to the Nuclear Knowledge Management Hub (NKMH)

The Nuclear Knowledge Management (NKM) Hub is a digital platform that offers easy access for IAEA Member States to the latest information on Nuclear Knowledge Management guidance and services to support Member States with operating nuclear facilities and those considering or developing new nuclear programmes.

The hub brings together professionals and experts from IAEA and its Member States to facilitate the sharing of information and capacity building while offering a centralized one-stop-shop access to key NKM areas and resources for information sharing, capacity building and networking. This includes cost-free access to guidance and methodology documents, overview of missions, schools and upcoming activities, presentations from past IAEA meetings, expert workshops and training events, examples of NIAA good practices, shared experiences and lessons learned from nuclear organizations, e-learning courses and training materials, and collaborative development spaces for members of working groups and projects.

The hub's public areas are open to all NUCLEUS-registered participants. Access to a particular members-only area is available upon invitation for admission to that project or working group.

RESOURCES
International Nuclear Management Academy (INMA)

- A collaboration between the IAEA and leading universities to develop and deliver master’s programmes in **nuclear technology management**
  - **Nuclear and radiological technology**
    - Facility design and operation, nuclear fuel cycle, radiological protection
  - **Management**
    - Finance, project management, human performance, safety management
  - **Leadership**
    - Communication, ethics, change management, safety culture

- Establishment of the NTM programme is supported by assist and assessment missions to the university
Aim: ‘T Shaped’ Leaders

Breadth of Knowledge

Nuclear Technology Management

Depth of Knowledge
Technical Specialists
Current Status - INMA Universities

Members

• National Research Nuclear University MEPhI, Moscow, Russia
• The University of Tokyo, Japan
• Texas A&M University, United States of America
• North-West University, South Africa
• University of the Witwatersrand, South Africa
• Budapest University of Technology and Economics, Hungary
• National Polytechnic University, Armenia

Candidates in the endorsement process

• University of West Bohemia, Czech Republic
• University of Idaho, United States of America
• Harbin Engineering University, China
• Sofia University “St. Kliment Ohridski”
• Ontario Tech University, Canada
• Tsinghua University, China
• University of Sharjah, United Arab Emirates
INMA Cycle

Initial expression of interest from the University to the IAEA

University receives an INMA assessment mission following a second self-assessment based on actual programme in place

University receives an INMA assist mission from the IAEA following a self-assessment based on current capability

University implements a nuclear technology management programme

Review after 4 years, full assessment after 8 years
INMA Deliverables

• Strengthen depth and breadth of managerial competencies
• Avoid serious gaps in nuclear managerial competencies
• Reduced time-lines to managerial competency
• Ensure high quality management education for nuclear managers available & accessible – full-time or part-time

Better educated and informed managers = better decision-making
What are the benefits?

• For the student
  – Opens up career opportunities across the nuclear sector
  – Transferable skills help the student become job-ready faster

• For the University
  – Options for attracting broader range of vocational focused students, early career (full-time) and mid-career (part time)
  – Enhanced international recognition via links to the International IAEA educational programmes
  – Potential to attract a broader range of international students

• For the Industry
  – Improved safety and economic performance
  – Better return on investment
Thank you!