MINISTRY OF ENERGY AND
COAL INDUSTRY OF UKRAINE

KNOWLEDGE MANAGEMENT SYSTEM IN UKRAINE
Practice of implementation of Knowledge Management of Nuclear Energy Sector

SVITLANA KULCHYTSKA
DEPUTY DIRECTOR
DEPARTMENT OF NUCLEAR ENERGY AND ATOMIC INDUSTRY COMPLEX
SVETA.KULCHITSKAYA@MEV.ENERGY.GOV.UA

Meeting to facilitate communities of practice for nuclear knowledge management practitioners in operating NPP facilities
Nuclear Energy and Industry Complex of Ukraine: Present and Future

- Ukraine is one of the top ten countries for the mining and primary processing of uranium.
- At the 4 operating NPP (13,885 MW) generates about 50% overall electricity production in Ukraine.
- Scientific and technical support of Nuclear Industry performs construction and design organizations, higher education institutions, training centers and other
- According the National Energy Strategy development up to 2030 the nuclear generation share should remain at the level of 50% of the overall electricity production in the country.
Long-term strategic goals and objectives of Nuclear Energy Complex of Ukraine

Currently the primary tasks of Nuclear Energy complex are:

- Improving the NPPs safety and other objects of Nuclear Energy Complex
- Life-time Extension of existing NPPs
- Construction of new generating capacity and select of sites for new NPPs
- Radwaste and spent nuclear fuel management
- Liquidation of the consequences of the Chernobyl accident
- Diversification of supply of nuclear fuel for NPPs of Ukraine, Development of national nuclear fuel production
- Development of uranium and zirconium production for full need of NPPs
- Safety decommissioning of reactors and other facilities
- Strengthening national nuclear legislation
- Developing and strengthening a national system of scientific-technical and engineering design support
- Further development of a national human resources system and training of qualified personnel
- Social and economic development of regions, where Nuclear objects located
Nuclear Knowledge Management System of Ukraine

Problems and deficits

• Unified system for Nuclear Knowledge Management in Ukraine is absent. Existing elements are characterized by a number of deficits, including the issues:
• Regulatory framework of government and industry levels;
• Activity coordination with the central monitoring, forecasting and planning;
• Unified methodological support;
• Providing centralized regulatory, technical, design and engineering documentation with a distributed network of users, etc.
The activities of Knowledge Management in cooperation with the IAEA

- IAEA recommendations and international best practices of NPP operation
- Participation in a regional project RER/0/027 "Strengthening the capacity of nuclear knowledge preservation";
- The implementation of national projects: UKR/4/012 and UKR/0/009 "Improvement training maintenance personnel of Ukrainian NPPs"
  UKR/0/010 and UKR/0/011 “Improving Knowledge Management System in Nuclear Energy Complex of Ukraine"
Projects UKR/4/012 and UKR/0/009 “Improvement training maintenance personnel of Ukrainian NPPs” 2007-2009

Results:
• was created of a knowledge base and tools for support learning and knowledge preservation for the NPPs maintenance personnel
• provided introduction to knowledge management in Nuclear Industry - approaches and techniques, technical resources, leadership development, self-assessment, study methodology, technical facilities for maintenance staff training;
• collection of implicit knowledge;
• carried out training for managers and personnel;
• developed of normative documentations of NKMS
Projects UKR/0/010 and UKR/0/011 «Improving Knowledge Management System in Nuclear Energy Complex of Ukraine“
2009 - 2013 years

Results:
• Developed of a Concept and Action Plan for Knowledge Management in the Nuclear Energy Complex of Ukraine
• Developed of methodological documents on KM
• Developed of a knowledge portal of Energoatom
• Supported educational institutions of the Nuclear Energy and Industry
• Conducted 2 national NKM school (2010 and 2012)
Portal development status

Portal development was carried out in accordance with recommendations of IAEA publication NG-T 6.2 “Development of Knowledge Portals for Nuclear Power Plants”.

Energoatom Knowledge Portal has three primary purposes:

- An integration tool – to provide easy, unified and integrated access to an organisation’s own resources and procedures.
- An access tool for other (internal and external) information resources.
- A communication tool – to enable individuals, teams and ‘communities of practice’ to share and discuss ideas and knowledge.

The following basic principles were used at development:
Portal development status

- The Terms of reference on designing technical specification for the corporative knowledge portal of NNEGС “Energoatom” and the Concept of its creation was developed along with IAEA experts;
- The Technical Specification for the NNEGС “ENERGOATOM” Knowledge Portal was developed by IAEA experts and adopted to NNEGС “Energoatom” criteria.
- Marketing research was made and appropriate software (platform) was selected.
- Physical and logical design was started, and interface prototype was developed.
- Databases and portal modules are filling with necessary content
Some characteristics of the Portal

- Lightweight, unified access to Energoatom resources and procedures
- Access to external information resources
- Opportunity to share and discuss ideas and knowledge

Portal consist of 6 main modules:

- Electronic Library
- Documents Management
- Project Management
- Analytical tools
- Certification (assessment of knowledge / licensing) staff
- Management training materials and courses
Examples of portal functions implementation

Developing of structures for the following portal libraries:
- IAEA Publications
- Normative documents
- Training materials
- NPP’s flowsheets

Developing of structures for the following portal lists:
- List of valid normative documents
- List of suppliers
- List of the Company staff
- Organizational structure of NNEGC “Energoatom” headquarters
- List of multimedia training modules
Examples of portal functions implementation

The full-text search of information is implemented at the portal with the possibility of specifying of queries by metadata. Indexing of information for searching is realized for all types of Microsoft Office files and for files format as *.pdf, *.tiff and metadata.
Portal development status

Portal solves the following goals:
- Provides information support to NNEGC engineering management and decision making
- Facilitates the creation and maintenance of a central digital repository of NNEGC documents and other materials
- Provides easy and efficient access to NNEGC information resources
- Supports internal document and project management
- Supports information flows within NNEGC and between NNEGC and NPPs
- Supports NNEGC business processes
- Integrates existing NNEGC applications under one shell
- Supports communication between NNEGC departments and staff
- Makes NNEGC staff more informed about NNEGC activities

And contains the following information
Examples of portal functions implementation
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New portal design
Usage of CLP4NET
Usage of CLP4NET
Good practices identified

- The projects drew attention of the senior managers to importance of systematic knowledge management
- Further development of multi-media training modules.
- Implementation and operation of web-based platform and Nuclear Knowledge System in operation organization
- The introduction of educational cyber learning platform for Nuclear education and training
Thank You!