Nuclear Knowledge Management and Preservation in Kazakhstan

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Reasons for a new IAEA project

-Kazakhstan possesses 25 % of the world uranium resources, and practically all nuclear fuel cycle stages, except isotopic enrichment.

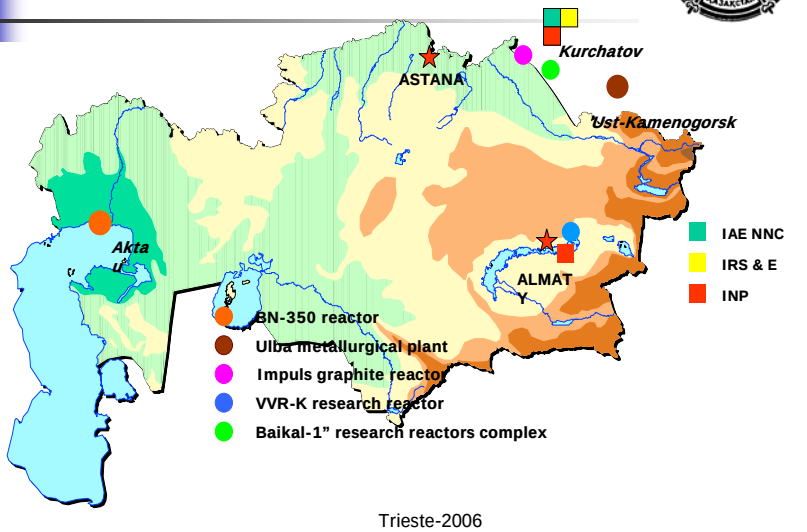
-There are four research reactors and one energy nuclear reactor – BN-350 fast neutron reactor that now is under decommissioning procedures.

- Problem of nuclear waste management in uranium industry is being successfully resolved in accordance with the international radiation safety requirements.

- Wide-scale radiological investigations related to 40-year activity of former Semipalatinsk test site are being worked out.

All these activities demand highly qualified and knowledgeable personnel. But during the last decade, as in the all world, Kazakhstan faces with a problem of nuclear knowledge loss due to economical, demographical and other reasons. A situation is even more complex as Kazakhstan has made commitments to put into operation new NPP in 2016. Therefore the issue of nuclear knowledge management and preservation is an important problem for the further development in all areas of nuclear power and application.

Kazakhstan Nuclear Installations



End users

- **Kazakhstan Atomic Energy Committee (KAEC),** and other governmental institutions.

Research and industrial organizations of atomic complex including:

National Atomic Company "Kazatomprom" – uranium mining companies,

National Nuclear Center of the Republic of Kazakhstan, (incorporating the Institute of Geophysical Researches; the Institute of Nuclear Physics; the Institute of Radiation Safety and Ecology; and the Institute of Atomic Energy),

Mangyshlak Nuclear Power Plant,

Ulba Metallurgical Plan.

Project strategy

Nuclear Knowledge management is considered as a key element of the sustainable development of nuclear power and non-power applications in Kazakhstan. The suggested project will support capability and capacity building and Kazakhstan infrastructure development.

Sustainability

In the end of the project national organizations will be able to apply knowledge management principles, methods and tools in the current practice in order to improve their performances

Objectives:

- To preserve knowledge in critical areas and enhance capacity and further develop expertise and knowledge in nuclear science and technology in Kazakhstan.
- Focus of the project would be on preserving and transferring nuclear knowledge as well as developing new skills and competences in the nuclear related areas.

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Outputs

1 National Concept of Nuclear Knowledge Management, including knowledge preservation

- A meetings of international experts and national representatives responsible for concept development;
- A subcontract to develop a draft concept of nuclear knowledge management;
- Two working meetings to review of concept development;
- A presentation of the concept to Kazakhstan managers involved in nuclear activities and NKM professionals

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Outputs

2. Intranet Knowledge Base and Content Management System (KMS), supporting the Kazakhstan Atomic Committee. This would provide one the key tools to support other KM initiatives, including a communicational channel that is a key for successful KM. The system may include:

- portal access for industry use and possible access to non-sensitive data
- qualification and experience register
- electronic document and record management system, i.e. e-mail, correspondence, scientific documents, web information, drawings
- expert yellow pages
- host site for communities of practice workshops
- retention of industry knowledge through documentation

The KMS should include the elements and systems already exist at the KAEC.

Some of these systems like “KAEC Examiner’ and “Electronic Document Circulation” should be modernized in order to perform additional functions.

Outputs

3. Nuclear Industry Skills Review, including organizations and people. This could be extended to consider the skills required for new NPP build and operation.

Outputs

4. **Knowledge Loss Risk Management Guidance and Pilot Project**

- Workshop on practical guidance on risk management of knowledge loss in nuclear industry organizations
- Pilot project on Knowledge Loss Risk Management for one national nuclear organization (TBD)
- Development of report on the pilot project results and distribution it among the Kazakhstan nuclear organizations

Outputs

5. Presentation of NKM best practices and techniques

Outputs

6. **Tacit Knowledge extraction and capture method**, establishing procedures and providing practical techniques for capturing and documenting undocumented knowledge, training of national experts involved, etc.

Outputs

7. **Practical Guidance on KM IT tools and Solutions**

Outputs

8. **Practical guidance on change management to support the removal of KM barriers**

Thank you