



Scientific and Engineering Centre for
Nuclear and Radiation Safety



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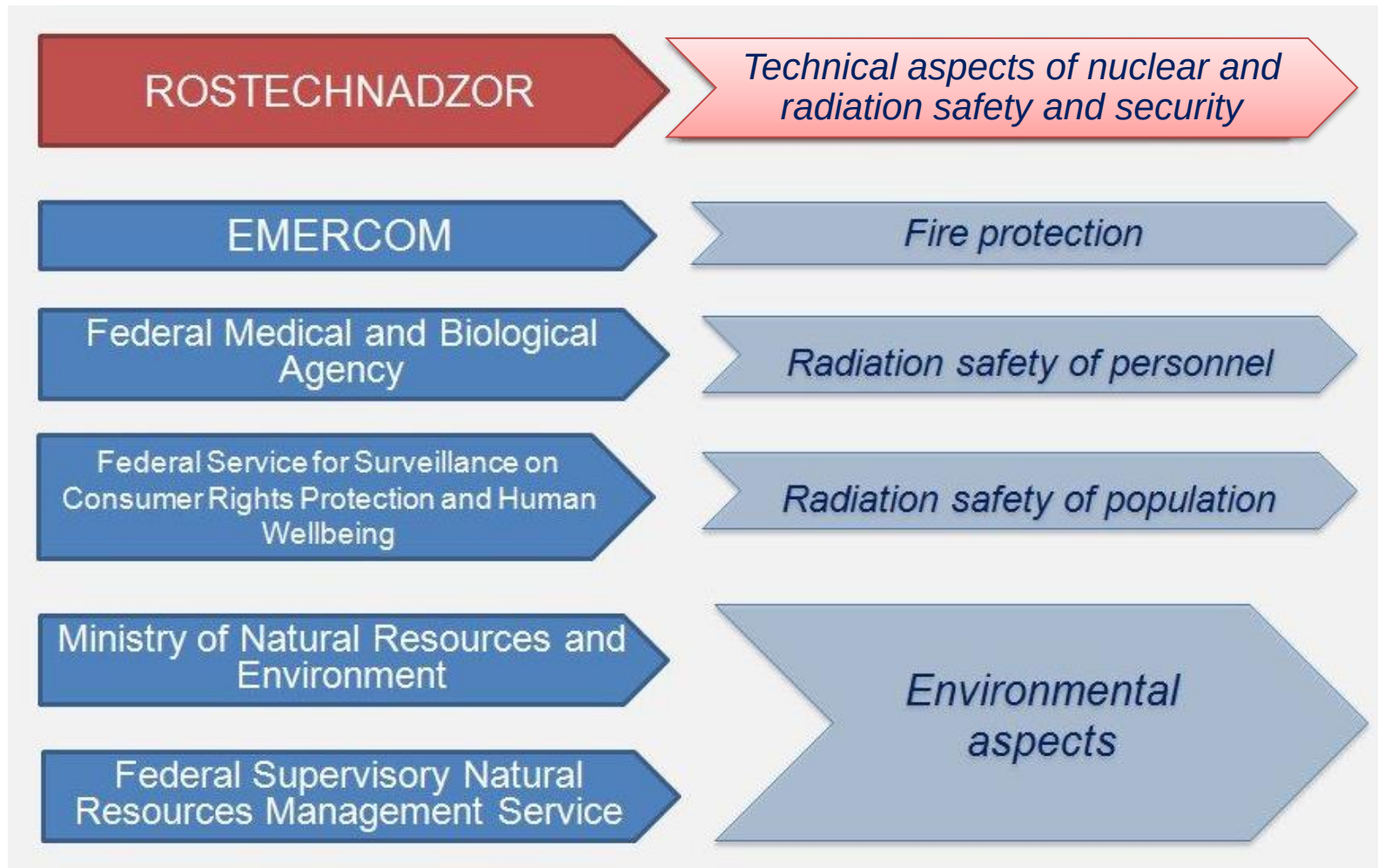
EUROPEAN
TECHNICAL SAFETY
ORGANISATIONS
NETWORK

The Art of Knowledge Management and Knowledge Transfer to the Younger Generation of Scientists: SEC NRS Experience

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Authorities for State Safety Regulation in the Field of Nuclear Energy Use





✓ SEC NRS was established in 1987 with the purpose to collect and apply new scientific knowledge for scientific and technical support of nuclear and radiation safety regulation, as well as to perform analysis and substantiation of criteria and requirements for nuclear and radiation safety at nuclear energy use

SEC NRS as talent pipeline of knowledge in nuclear science (2)



Full-fledged scientific and technical support organization for nuclear regulatory authority (Rostekhnadzor)



350 employees

59 Phd & doctors of sciences

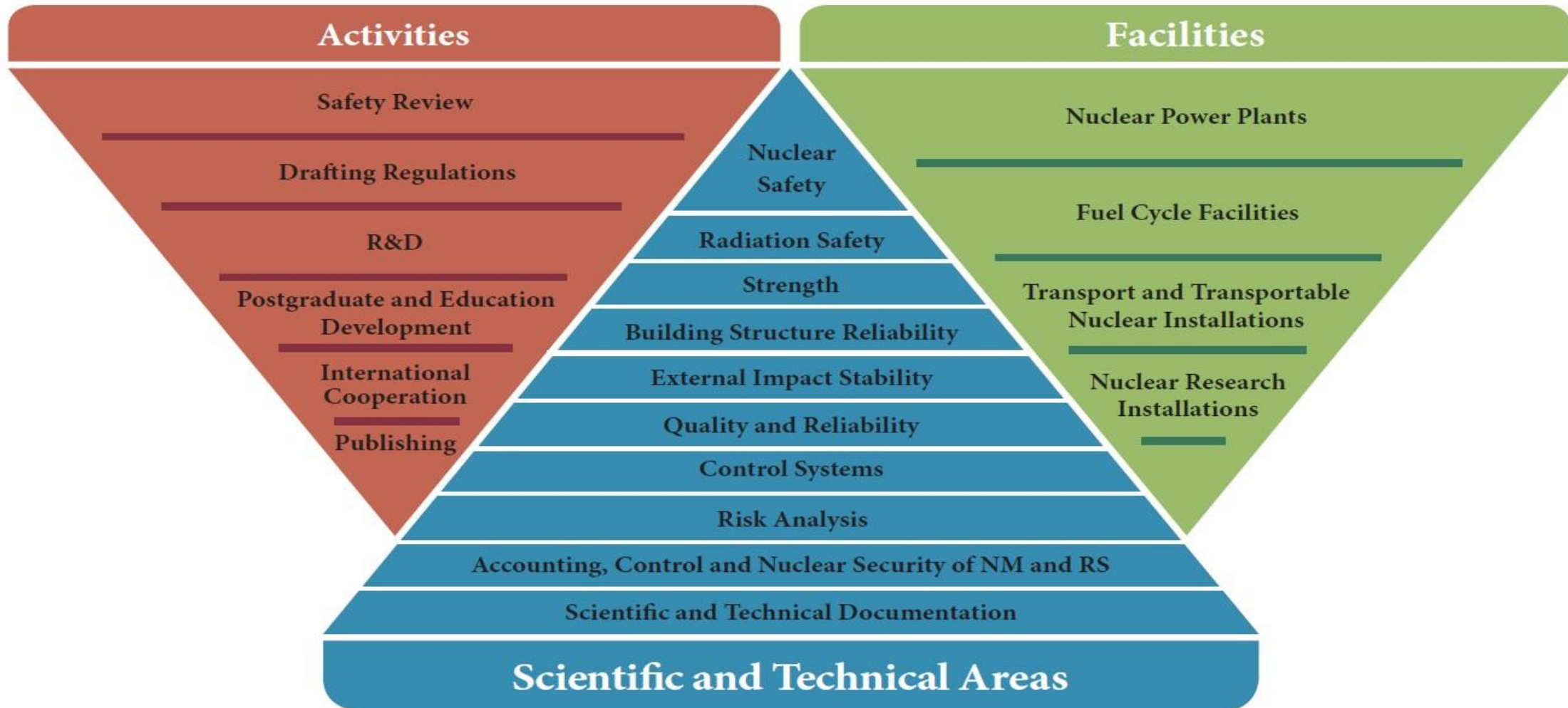
75 % of employees are researchers

**The average age of the employees -
45 years**

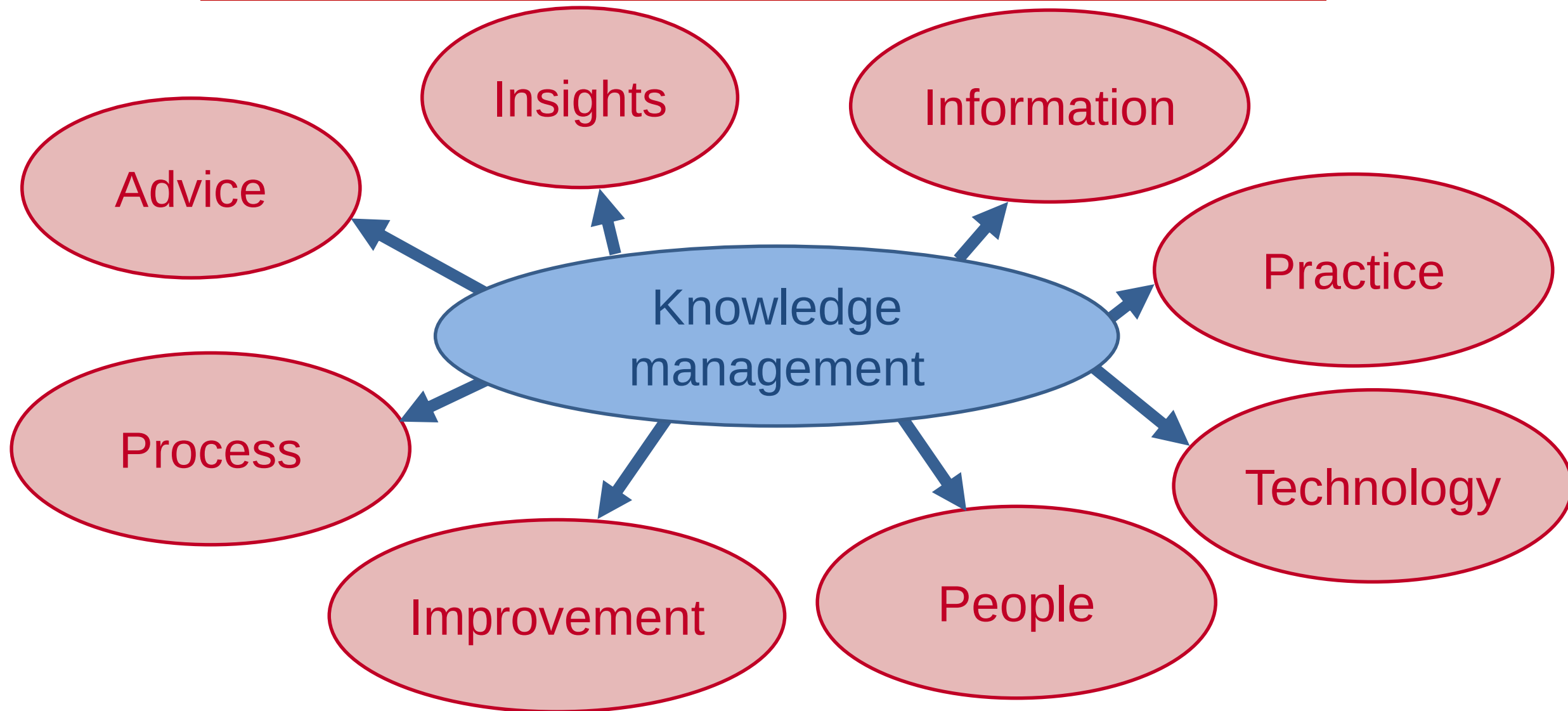
12 Scientific & Technical Divisions



SEC NRS as talent pipeline of knowledge in nuclear science (3)



The main elements of knowledge management system



Knowledge management framework (1)



A. INFORMATION AND KNOWLEDGE – WHAT DO YOU NEED TO KNOW? WHICH INFORMATION DO YOU VALUE?



Limited, metric-based information

Diverse, nuanced information

B. CAPTURE – HOW ARE YOU GATHERING AND COLLECTING THIS INFORMATION?



Basic data and information capture tools

Multiple, nuanced and rapid information mechanisms

C. ANALYSIS – WHAT ARE YOU FINDING AND ASSESSING FROM THIS INFORMATION?



Templates and Reports based on explicit information

Assessing and matching explicit and tacit information, turning it into knowledge

D. COMMUNICATION – WHAT INFORMATION OR KNOWLEDGE ARE YOU SHARING? HOW?



Limited, simple
communication channels

Multiple communication
channels and mechanisms
between multiple people

E. MANAGEMENT – HOW ARE YOU MANAGING THE FLOW OF KNOWLEDGE?



Directive and prescriptive
management

Flexible and adaptive
management, performance
based on learning

5 DO`S and DON`TS of knowledge management (1)



Create an effective operating culture – one where questions and adjusting learning is encouraged



Make knowledge management part of everyone`s job



Share information in different ways (in addition to reporting)



Reward information sharing



Be patient, persistent and consistent

5 DO`S and DON`Ts of knowledge management (2)



Rely only on the indicators required by monitoring and evaluation



Assume your staff will adopt new practices immediately and/or rely too heavily on workshops



Forget to give feedback to and receive feedback from your staff



Forget to walk the talk (align what you say with your actions)

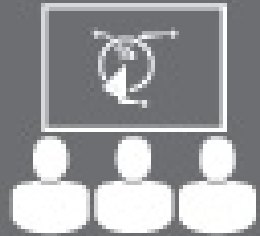


Forget to check in on staff perceptions and organizational culture



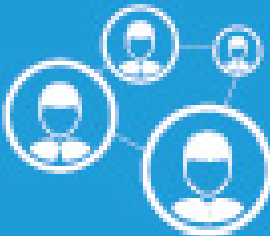
Internal consulting:

- ❖ Platform evaluation and selection
- ❖ Process improvement
- ❖ Competency assessment
- ❖ Competency development and planning



Internal training:

- ❖ On-the-job training
- ❖ e-learning solutions
- ❖ Simulation-based learning
- ❖ Industry-specific certification



Knowledge management:

- ❖ Social collaboration tools
- ❖ Repository of learning content
- ❖ Competency profile of individuals, including learning history and certification status

Knowledge Management in SEC NRS: Main Information Resources



- National Nuclear Regulatory Portal (NNRP)
- Official site
- Various databases
- Information corporate Portal

Knowledge Management in SEC NRS:

“RIS” – Database of Legal and Regulatory Documents



✓ Online version

✓ Version on the CD (flash memory)

✓ Special version for NNRP



Knowledge Management Evaluation Indicators



- ✓ Thesis defence, award of Scientific Degree
- ✓ Publishing activities (including electronic media)
- ✓ Citation Index
- ✓ Research & Development activities
- ✓ Intellectual Property Rights authorization
- ✓ Supervision of research groups
- ✓ Participation at the International Committees & working groups of International Organisations
- ✓ Lecturing activities
- ✓ Participation at the meetings with reports
- ✓ Tutoring

Competence Building through Participation in Scientific Projects



- ✓ Design & experimental study of indicators of nuclear & radiation safety in transportation of spent nuclear fuel using containers TUK-153
- ✓ Assessment of operation safety of a near-surface storage of nuclear waste during their placing or removing
- ✓ A model of express-assessment of the safety of NPP with VVER reactors
- ✓ Analysis of the ground velocity & displacement during the earthquake at the NPP “Kashiwazaki-Kariva”
- ✓ The calculation of the potential doses of population living in areas contaminated with natural uranium with the use of software RESRAD
- ✓ The use of three-dimensional ligament codes QUABOX/CUBBOX-ATHLET for the calculation of transients in the reactor RBMK-1000
- ✓ The forecast of the long-term safety of near-surface repository for invasion options

Thank you for your time and attention!





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