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Knowledge Management in a Midsize Nuclear Programme

Hungarian Practice

presented by

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Hungary

- Hungary:
  - Capital: Budapest
  - Population: 10 million
  - Area: 93,030 km²

Midsize nuclear programme

- Four VVER-440/V213 units
  - 500 MWe each
  - Nuclear share in electricity production ~ 40 %
- Spent fuel interim storage facility
- Research reactor
- Training reactor
- Shallow land repository for low and intermediate radioactive waste
- Deep repository of NPP originated low and intermediate radioactive waste
- 40 small holders of nuclear materials
- 380 users of 6000 sealed radioactive sources
- 3500 users of 5000 equipment (i.e. X-rays , linear accelerators)
- Yellow cake production
- Mining

Educational system

- Primary school – 8 years (between age of 6-14)
- Secondary school – 4 years (between age of 15-18)
- BSc – 3 years (19-21)
- MSc – 5 years (19-23)
- Post graduation (specialization) – 2 years
- PhD – 3 years

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Our challenge (1) – service life extension

- Service life extension of existing units
  - Unit 1 by the end of 2012
  - Unit 2 by the end of 2013
  - Unit 3 and Unit 4

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Our challenge (2) – new unit(s)

- The Parliament made a positive decision in principle on new unit(s) having 2000 MWe at the Paks site
- Equiped with pressurized water reactor
- Planned to be operational around 2025
- MVM Paks-2 Co. has been established in 2012
- Tender is expected to be issued in 2013-2014
- Site license application is planned to be submitted in 2013-2014

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Issues (1)

- Survey in 2008 (by TUB Institute of Nuclear Techniques)
  - 23 companies included (50% of major companies)
  - 16,700 employees, 3,881 BSc and MSc
- Demand
  - 1,120 BSc + MSc (in the next ten years)
  - Energetics, mechanical, electrical and chemical engineering

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Issues (2)

- Ageing of professionals
- Survey in 2008 (by TUB Institute of Nuclear Techniques)
- <40 – 45%, 40-50 – 29%, 50+ 25%

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Issues (3)

- Nuclear is less attractive area of education

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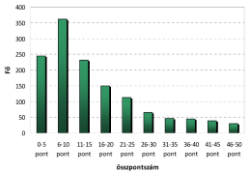
Issues (4)

- Lower quality of new students – lower quality of the secondary education of nature sciences
- Survey among university new-comers in 2009 (by TUB)
  - Goal: survey the level physics and mathematics knowledge
  - Different types of exercises (test, calculation, description)
  - Maximal points: 50
  - Participation in the survev: 1324 students from 6 universities



Issues (5)

- Financing of high education
  - Transition from free to fee

Issues (6)

- Different attractiveness of companies
  - Operational NPP
  - New NPP
  - TSOs, engineering companies
  - International and EU institutes
  - Auhtority

Good practices (1) - share

- Initiate young generation networks
  - Informal way of information exchange between young people
  - Young people are interested to participate in movements
  - Involve the youth in public relations works
- Organize conferences, workshops and seminars to enhance the efficiency of professional information exchange (annual symposium of nuclear technology)
- Organize post graduate courses

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Good practices (2) - protect

- 2-3 years parallel work of senior and junior staff members
- Advisory activity after retirement
- Exit interviews for the most important positions reporting the last 40 years history
- Motivation for the professors to write books

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Good practices (3) – identify, organize

- Collect research reports and transform these docs to electronic form
- Establishment of the Hungarian nuclear knowledge database

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Good practices (4) - develop

- Important target groups are secondary school students
  - Organize visits to the facility from secondary schools
  - Try to get the best talented student to the nuclear industry
  - Making nuclear attractive already in the secondary school

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Good practices (5) - use

- Active stakeholders' involvement to higher education
  - Financial support
  - Lecturers
  - Fellowship programme

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I thank you for your kind attention!

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