FISA EURADWASTE 2025

SNETP Forum

POLAND25.EU

AEMI Atomic Energy Engineering Company Ltd.

More than30 years of experience in research, development and consultancy in the field of nuclear energy technology
Spin-off company of HUN-REN CER

Parallel II.1 Innovative nuclear fuel cycles and materials strategies

Szabolcs Szavai, head of division

AEMI Atomic Energy Engineering Company Ltd.

Technical Division, Hungary - Miskolc

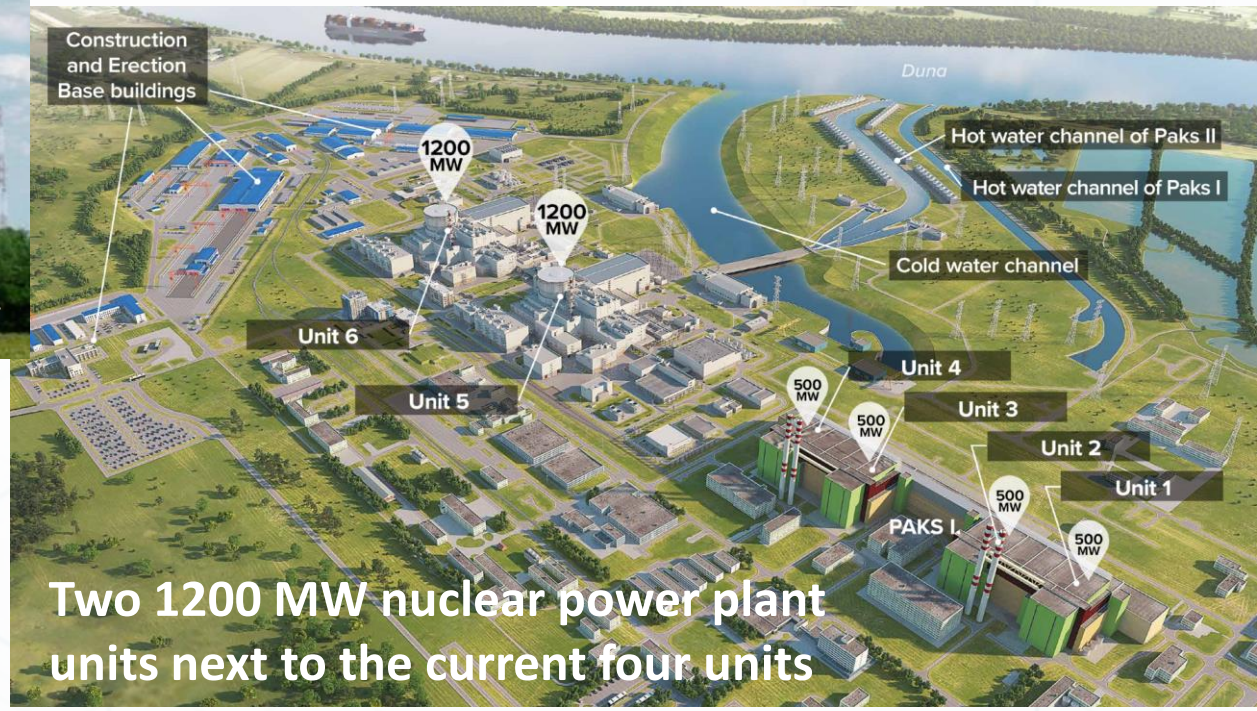
AEMI PRESENT in nuclear field

Subsequent License Renewal project of Paks NPP, Hungary

Licenced lifetime: 2032-2037 + 20 years
Time Limited Ageing Analyses
Ageing management programmes

Innovative products like portable dosimetry and contamination monitoring systems

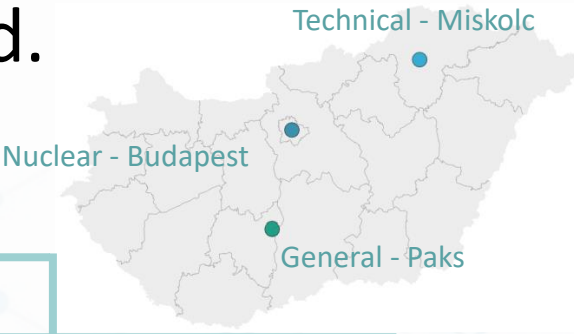
Online monitoring systems development



Two 1200 MW nuclear power plant units next to the current four units

Licencing and manufacturing phase, expert activities

AEMI Atomic Energy Engineering Ltd.



Technical Division

- structural integrity assessments
- advanced Non-Destructive Testing (NDT)
- predictive maintenance and monitoring systems

Nuclear Division

- reactor physics
- thermal hydraulics
- fuel behavior
- reactor simulators
- on-line core monitoring
- fusion research

General Engineering Division

- technical supervision
- project management for large-scale infrastructure project

The mission of our Technical Division is ensuring the integrity and reliability of critical infrastructure by applying state-of-the-art engineering tools and cutting-edge technologies– including AI-assisted analysis and digital reality – to enhance safety and performance in practice.

Perspective and view on Innovative nuclear fuel cycles and materials strategies

- Nuclear fuel cycles and material topic is a central pillar of our energy future.
- New fuels and advanced materials may be the long-term vision, the starting point is the safe and extended operation of our current fleet.
- LTO is not just about extending service life – it's a driver of innovation.
  - It demands a deep understanding of materials science as we tackle ageing mechanisms and predict material performance over many decades.
  - This creates new knowledge – not only for continued safety, but also for informing future reactor designs, including SMRs.
    - Projects coordinated under SNETP umbrella exemplify this dual-purpose approach.
    - These collaborative efforts are essential for developing harmonized standards and ensuring the continued safety and efficiency of our nuclear assets.
- A truly effective strategy for innovation in this field must be comprehensive, integrating the invaluable experience from our operating reactors with the forward-looking development of new materials and fuel concepts.

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Technical Division - Hungary

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