

Workshop on Non-Destructive Examination, In-Service Inspection and On-line Monitoring for Research Reactors (EVT2202277)

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The International Atomic and Energy Agency (IAEA) has conducted a training workshop on Non-Destructive Examination, In-Service Inspection and On-line Monitoring (OLM) for research reactors on 4th to 8th November 2024 at Vienna, Austria. The workshop was attended by 24 participants from member states of IAEA with different background including the Non-Destructive Testing (NDT) practitioners, reactor operators and regulatory. The participants represent a diverse range of reactor types, power levels, utilization programs and safety aspects. The comprehensive five days workshop includes both a classroom presentation and a practical session. This workshop provides participants with essential knowledge to improve the longevity and reliability of research reactors.

The objective of this workshop is to extend the operational lifespan of research reactors. The workshop focuses on preventing the development of unexpected defects and ensuring the ongoing safety and reliability of reactor systems. Through NDT inspection and monitoring techniques participants learn to detect potential issues early, enabling timely maintenance and reducing the risk of unexpected failures. By enhancing the management of reactor conditions, the workshop enables member states to sustain and prolong the safe operation of their research reactors for the foreseeable future.



The participants from Malaysian Nuclear Agency, Mr. Amry Amin Abas and Miss Nurul A'in Ahmad Latif (left). The experts and participants of the EVT2202277 workshop (right).

Meanwhile, the objective of online monitoring is to enhance the efficiency and safety of reactor operations by automating key processes and minimizing risks. This includes reducing the time spent by instrument technicians on manual calibration thus decreasing the potential for human errors during calibration. Online monitoring aims to improve the reliability of instrumentation and control systems ensuring a rapid response to transients and accidents.



Country presentation.

One day practical session was conducted at TRIGA Research Reactor at TU Atominstitut, Stadionallee 2, under supervision Dr. Mario Villa. The participants were divided into 3 groups and each group will take turns performing the practical sessions as scheduled. The practical involves the visual testing (VT) of reactor pool internals using IAEA underwater camera systems. The second practical session focuses on ultrasonic testing (UT) including a demonstration of IAEA UT equipment, calibration using a standard block and the inspection of wall thickness and pipe welds. The last practical session was eddy current testing (ET) demonstration on surface defect detection using array eddy current probe.



Practical session conducted at TRIGA Research Reactor at TU Atominstitut, Stadionallee 2.

In conclusion, this training workshop provided invaluable knowledge, hands-on experience and equipping participants with the essential tools to enhance the safety, longevity, and reliability of research reactors. The workshop focused on the early identification of potential issues through NDT inspection and online monitoring, tackling key aspects of reactor operations to ensure their ongoing safe performance. Ultimately, the workshop provided participants with essential technical skills and encouraged international collaboration to protect the future operation of research reactors around the world.