

Life Management of NPPs

Project 1.1.1.001: Engineering support for operating nuclear power plants

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Ed Bradley – Team Leader, NPP Operation & Engineering Support

IAEA



EQ to support LTO

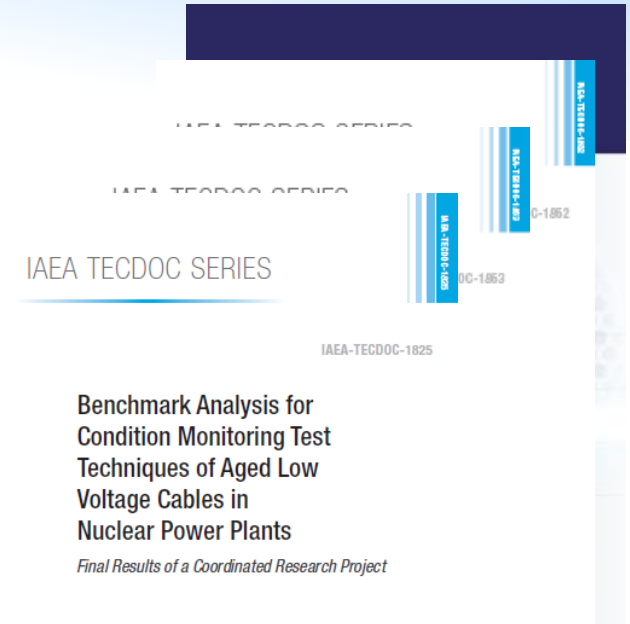


IAEA Major Programme 1 – Nuclear Power Fuel Cycle and Nuclear Science

- Programme 1.1 – Nuclear Power
 - Sub-Programme 1.1.1 – Strengthening Integrated Engineering Support for Nuclear Power Plants
 - Project 1.1.1.001 - Engineering support for operating nuclear power plants

Recent Outputs

- Buried and Underground Piping and Tank Ageing Management for Nuclear Power Plants (NP-T-3.20) published in October 2018
- Dissimilar Metal Welding Inspection and Repair Approach in Nuclear Power Plants (IAEA-TECDOC-1852) published in September 2018
- Improvement of Effectiveness of in-Service Inspection in Nuclear Power Plants (TECDOC-1853) published in September 2018
- Benchmark Analysis for Condition Monitoring Test Techniques of Aged Low Voltage Cables in NPPs (CRP), published in October 2017



Related support



Active TC projects

- ARG - Enhancing Capabilities of the National Atomic Energy Commission in **Environmental Qualification** Programmes and Environmental Qualification Testing for NPPs
- ARM - Enhancing Operational Safety for **Lifetime Extension** of the NPP Unit 2 in Accordance with International Standards
- IRA - Enhancing the Level of Operational Safety and **Reliability** of the Bushehr NPP-1
- MEX – Supporting Proactive **Ageing Management for Long Term Operation** of Laguna Verde NPP
- PAK - Strengthening and Enhancing Capabilities of Pakistan's National Institutions to Support a Safe, **Reliable and Sustainable** Nuclear Power Programme
- RER - Strengthening NPP **Lifetime Management for Long Term Operation**

Related activities



TWGs and SAGNE

- **TWG-LMNPP** Most recent meeting, February 2019. Identified a broad range of issues that would benefit from IAEA support.
- **TWG-NPPOPS** New as of September 2018. Executive-level representation working to identify and recommend solutions for challenges facing operators; often focuses at strategic level.
- **TWG-NPPI&C** All I&C challenges, in particular those related to ageing, obsolescence, etc. are considered here.
- **SAGNE** – diverse, representative group, considering broad challenges across IAEA Major Programme 1: Nuclear Power, Fuel Cycle and Nuclear Science.

2019 Plan (relevant items)



Planned and In-progress publications

- Design Basis Reconstitution for LTO of NPPs (draft under development, 2019 CM & TM)
- Design Modification Process in NPP Lifetime: Challenges and Good Practices (draft under development, 2019 CM)
- Fatigue Assessment in Light Water Reactors for LTO: Good Practices and Lessons Learned (draft approved in NE in 2018)
- Transition Management from Operation to Decommissioning in Nuclear Power Plants (draft approved in NE in 2018)
- Obsolescence, Spare Parts and Replacement in Operating NPPs (draft initiated)
- Single Point Vulnerability (SPV) Management Guideline (may be in 2019)

2019 Plan (relevant items)

Tentative Meetings

- TM on Loss of fracture toughness of reactor pressure vessel due to radiation embrittlement and Neutron Flux
- Workshop on operating organization practices for managing enterprise configuration data

2019 Plan (relevant items)

Other

- Temper bead welding publication (with EPRI – **NEW**)
- Risk based decision making (with Operational Excellence—PUI/Japan) – **NEW**
- Event in Cooperation - **Equipment Qualification** in Nuclear Installations—May 2019, Czech Republic (combined with a TC/RER Workshop)
- Event in Cooperation – Innovation for the Future of Nuclear Energy – A Global Forum —June 2019, Gyeongju, Korea



2020-2021 Plan (relevant items)

- 5th International Conference on PLiM
 - December, 2021
 - Asia
 - 4 (Europe / France – Oct 2017)
 - 3 (North America / USA – May 2012)
 - 2 (Asia / China – Oct 2007)
 - 1 (Europe / Hungary – Nov 2002)
 - International partnerships
 - Detailed planning commencing in 2019

2020-2021 Plan (relevant items)



Project reorganized

- General support
- Conferences, symposia, workshops, meetings
- Publications, databases and E-resources
- Capacity building

Each category has been populated with placeholders that introduce flexibility to:

- Finalize in-progress Outputs
- **Better respond to emergent priorities**—in the context of available resources and implementation mechanisms
- **Exploit new opportunities for partnership and collaboration**
- Strengthen existing partnerships

2020-2021 Plan (relevant items)

Strategic initiatives under consideration

- Innovation
- Modernization
- Major refurbishment project management
- Supply chain, obsolescence and innovative solutions such as additive manufacturing

Thank you!

