

# **1<sup>st</sup> Topical Peer Review**

## **Public meeting**

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**Brussels**

### **Ageing Management Programs - AMP**

**Mr. Mikuláš TURNER**  
**Project Manager**

# Ageing

..... is a general process (like in other industrial segments and **is not specific for the nuclear sector**) during which physical characteristics of the Systems structures and components (SSCś) gradually deteriorate with time or use. It occurs due to physical degradation (by use) or chemical or biological processes (e. g. harsh environment)

# Features of an effective AMP

1. Scope of the ageing management program (SSC subject to)
2. Preventive actions to minimize and control ageing effects (pro active approach)
3. Detection of ageing effects (e.g. in service inspection, maintenance of SSC)
4. Monitoring and trending of ageing effects (e.g. comparison against acceptance criteria)
5. Mitigating ageing effects ( e.g. environmental control, better materials, weldings)
6. Acceptance criteria ( based on design basis with margins)
7. Corrective actions (e.g. repair or replacement)
8. Operating experience feedback and feedback of research and development results (e.g. within users groups)
9. Quality management (e.g. administrative control - documentation)

To be implemented through the entire lifetime of the plant (i.e. design, construction, commissioning, operation, decommissioning)

# Ageing Management Programs - AMP

## **WENRA safety RF for existing reactors issue I - Ageing**

„The operating organization shall have an Ageing Management Program (AMP) to identify all ageing mechanisms relevant to structures, systems and components (SSCs) important to safety, determine their possible consequences, and determine necessary activities in order to maintain the operability and reliability of these SSC“

# Ageing Management Programs - AMP

## WENRA technical specification - Ageing

Operator's ageing management programs shall provide for :

- assessment of structures systems and components (SSC)
- monitoring, testing, sampling and oversight of SSC
- preventive and remedial actions
- review and update of the AMP

The regulatory oversight shall provide for :

- an assessment of the AMP processes
- inspection activities to review the compliance with requirements

# Expert country review of AMP



Project Manager	Nuclear Regulatory Authority (SK)
Coordinator	Autorité de Sûreté Nucléaire (FR)
Rapporteurs	Federaal Agentschap voor Nucleaire Controle (BE) Autorité de Sûreté Nucléaire (FR) Authority for Nuclear Safety and Rad. Protection (NL) Nuclear Regulatory Authority (SK)
Experts	Bulgarian Nuclear Regulatory Agency (BG) Federal Nuclear Safety Inspectorate (CH) Federal Office for the Safety of Nuclear Waste (DE) Atomic Energy Authority (HU) Institute for Environmental Protection and Research (IT) National Commission for Nuclear Activities Control (RO) Office for Nuclear Regulation (UK) State Nuclear Regulatory Inspectorate (UA)

Total of 628 questions related to AMP raised by experts or countries. 6

# Expert country review of AMP - outcomes

## Preliminary ( crosscutting) findings (12) of expert review:

- legal and legislative framework
- review and update of AMP (PSR, LTO)
- organization of licensee´s internal oversight, knowledge management
- scoping of SSC subject to AM
- international cooperation (i.e. IAEA IGALL, users groups etc.)
- time limited ageing analyses - TLAA
- application of AMP for research reactors
- etc.

# Country review sessions on AMP

## National presentations should cover:

- national requirements for ageing management programs and their implementation
- findings from the national assessment
- responses to questions (comments) on the national report



# Country Review sessions - outcomes

## Make an assessment in relation to :

- Present situation of plants across Europe (regulatory bases, review and update of the programs, licensee's experiences and practices etc.)
- Assessment of ageing management programs at European level (consistency of approaches and with international safety standards (WENRA, IAEA),
- Conclusions and recommendations relative to ageing management programs (good practices, areas for improvement, common challenges)

# Country Review sessions - outcomes

Identify Peer Review findings (generic and country specific)  
categorized in:

- good practices ( outstanding )
- good performance (meets requirements)
- areas for improvement (generic)
- challenges ( specific )

# Ageing Management Programs

## International peer review processes

- EU Topical Peer Review
- IAEA expert missions ( part of SALTO, OSART)
- WANO services
- Convention on Nuclear Safety

## Relevant international safety standards

- IAEA (SSR-2/1, SSR-2/2 , NS-G-2.12, SRS 82 etc.)
- WENRA Reference levels

**Thank you for your attention**