5th International Conference on NPP Plant Life Management (PLiM-5)

Monday, November 28, 2022 - Friday, December 2, 2022

Vienna International Center

Scientific Programme

Session 1: Approaches to Plant Life Management

The aim of this session is to share information on, and best practices in, the application of PLiM for LTO from the safety and economic point of view. Topics to be addressed in the presentations include:

Implementation of the lessons learned from the severe accident at the Fukushima Daiichi NPP and their implications for LTO;
Methodology and scope, terms and definitions for the development of PLiM and LTO programmes and their implementation;
Methodology for integrated plant assessments, including the condition of SSCs;
Selection criteria for NPPs for LTO; and
New NPP design features that consider PLiM experiences and feedback.

Session 2: Economics of Plant Life Management

The aim of this session is to discuss how to improve the economic performance of NPPs through PLiM. Topics to be addressed in the presentations include:

Potential business opportunities and risks, including power uprating issues related to PLiM;
Cost-effective strategies for modernization and replacement/refurbishment of SSCs;
Economic analysis for decision making on LTO;
Cost-effective technologies/practices for maintenance, inspection and surveillance;
Supply chain health, equipment obsolescence and commercial grade dedication
Premature shutdown preparation strategy and procedures, including technical aspects;
Long term strategies for spent fuel storage (on-site) and waste management;
Replacement of large components (e.g. steam generators, reactor vessel heads and turbine generators);
Flexible operation in response to increased grid variability;
Innovative solutions that address LTO challenges and help ensure operational sustainability; and
NPP PLiM and the dawn of Integrated Energy Systems.

Session 3: Ageing Management and Preparation of Long-Term Operation

The aim of this session is to share technical updates on ageing management issues for mechanical, electrical/instrumentation and control (I&C) components and civil structures, as well as to discuss challenges related to the preparation of safe LTO. Topics to be addressed in the presentations include:

Safety standards to support LTO;
Scoping and screening of SSCs for LTO;
Ageing management review;
Use of the experience gained from implementation of the International Generic Ageing Lessons Learned (IGALL) programme;
Development, implementation and improvement of effective ageing management programmes;
Revalidation of time-limited ageing analysis;

Technological obsolescence;
Research to support LTO and ageing management;
Inspection methodologies and strategies for significant components; and
In-service inspection and non-destructive examination.

Session 4: Configuration and Modification Management for Safety Enhancement and improved reliability

The aim of this session is to share information on safety enhancement, design modernization, refurbishment and replacement programmes for ageing SSCs, obsolescence and additional safety requirements. Topics to be addressed in the presentations include:

Aspects of SSC design modification, modernization, innovation, refurbishment and replacement;
Maintenance optimization through predictive maintenance, preventive maintenance and corrective maintenance;
Risk and reliability evaluation of components and piping;
Modification and configuration management, including design basis reconstitution;
Accident tolerant fuel assemblies;
Safety analysis for design modification considering internal/external hazards;
Effective management of I&C, including modernization, methods and tools; and
Lessons learned from the planning and implementation of advanced I&C systems.

Session 5: Stakeholder Engagement, Human Factors and Managerial Aspects

The aim of this session is to share experiences and lessons learned in relation to system management and the successful resolution of the technical issues and challenges presented in the previous sessions, and to identify human factors and managerial aspects of the field. Presentations will cover:

Stakeholder engagement and public understanding, especially in the context of NPP LTO role in sustainable development and climate change mitigation;
Human resource development and workforce planning for LTO;
Knowledge management methods/processes to preserve plant history and experiences; and
Innovative NPP operational and business models.

Session 6: Regulatory Approaches to Ageing Management and Long-Term Operation

Exchange information about regulatory requirements in different Member States is essential. The aim of this session is to discuss the distribution of roles and responsibilities among the parties involved and to address regulatory policy considerations. Presentations will cover:

Regulatory approaches to ageing management and LTO;
Use of IAEA safety standards for the development of national regulations;
Requirements for the LTO licensing process;
Second licence renewal and approaches in the USA;
Insights from periodic safety reviews;
Use of operational experience in the regulations; and
Lessons learned from SALTO (‘Safety Aspects of Long-Term Operation’) missions