

# **6th International Conference on NPP Plant Life Management (PLiM-6)**

**Monday 7 December 2026 - Friday 11 December 2026**

**Tokyo**

## **Scientific Programme**

## **Session 1: Good Practices and Lessons Learned in Nuclear Power Plant Life Management**

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

Policies and strategies for the LTO of NPPs;  
Methodology for the development of PLiM and LTO programmes and their implementation;  
Methodology for integrated plant assessments, including the condition of SSCs;  
New NPP design features that consider PLiM experiences and feedback;  
Good practices and lessons learned from modernization/modification/refurbishment projects or power uprate projects for LTO, including a second long term operation period (subsequent license renewal).  
Aspects of SSC design modification, modernization, innovation, refurbishment and replacement;  
Safety analysis for design modification considering internal/external hazards;  
Potential business opportunities and risks, including power uprating issues related to PLiM;  
Economic analysis for decision making on LTO;  
Cost-effective strategies for modernization and replacement/refurbishment of SSCs;  
Cost-effective technologies/practices for maintenance, inspection and surveillance;  
Supply chain health, technological 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;  
NPP Plant Life Management and the emergence of integrated energy systems.

## **Session 2: Innovation for Nuclear Power Plant Life Management**

The aim of this session is to discuss innovative approaches to address various issues in Nuclear Power Plant Life Management. Topics to be addressed in the presentations include:

Digital twins for predictive performance & asset management;  
Additive manufacturing for obsolescence mitigation & component longevity;  
On-line monitoring & surveillance for proactive aging management;  
Data-driven decision support using artificial intelligence (AI) for LTO;  
Enhanced welding technologies;  
Application of robotics and drones;  
Enhanced regulatory interfaces through digital technologies;  
Verification and validation of new technologies;  
Cyber security considerations of new technologies;  
Innovative approaches to ensure and/or strengthen cyber security;  
Innovative financial approaches;  
Effective management of I&C, including modernization, methods and tools; and  
Lessons learned from the planning and implementation of advanced I&C 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 for safe LTO. Topics to be addressed in the presentations include:

- Scoping and screening of SSCs for LTO;
- Ageing management review, including understanding material degradation mechanisms.
- 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;
- Supply chain and obsolescence management;
- Research to support LTO and ageing management;
- Technical and safety aspects for LTO beyond 60 years;
- Methodologies, strategies and practices for in-service inspection and non-destructive examination; and
- Equipment qualification, including time-based qualification and condition-based qualification.

## **Session 4: Important Engineering Aspects in Nuclear Power Plant Life Management**

The aim of this session is to share experiences on important engineering aspects in PLiM. Topics to be addressed in the presentations include:

- Configuration management, including design basis reconstitution;
- Maintenance optimization for LTO;
- Risk-insights for LTO, including ageing and margin management;
- Equipment reliability;
- Environmental impact on NPP life, including mitigation of climate change;
- Safety analysis for design modification considering internal/external hazards;
- External hazard impact to NPP life, and
- Advances in fuel development and management for LTO.

## **Session 5: Stakeholder Engagement, Human Resource Development and Knowledge/Competence Management**

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. Topics to be addressed in the presentations include:

- Stakeholder engagement and public understanding, especially in the context of the NPP LTO role in sustainable development and climate change mitigation;
- Human resource development, such as workforce planning, training and education for LTO to retain and prepare professionals; and

Knowledge/competence management methods/processes.

## **Session 6: Regulatory Approaches and Safety Analysis Relevant to Long-Term Operation**

The aim of this session is to discuss the distribution of roles and responsibilities among the parties involved and to address regulatory policy considerations. This session will prompt conversation between regulators and NPP operators. Topics to be addressed in the presentations include:

Regulatory approaches to ageing management and LTO;  
Use of IAEA safety standards and security guidelines for the development of national regulations.  
Requirements for the LTO licensing process;  
Subsequent licence renewal and equivalent approaches;  
Interaction between periodic safety reviews and LTO;  
Use of operational experience in the regulations; and  
Lessons learned from Safety Aspects of Long-Term Operation (SALTO) missions.