



IAEA

International Atomic Energy Agency

Third International Conference on Nuclear Power Plant Life Management (PLiM)

**Salt Lake City, Utah, United States of America
14–18 May 2012**

Organized by the

International Atomic Energy Agency (IAEA)

In cooperation with the

European Commission Joint Research Centre (EC/JRC)

and the

OECD Nuclear Energy Agency (OECD/NEA)

Hosted by the

Government of the United States of America

through the

US Nuclear Regulatory Commission (USNRC)

and the

US Department of Energy (USDOE)

Announcement and Call for Papers

A. Background

The world's fleet of nuclear power plants is, on average, more than 20 years old. Even though the design life of a nuclear power plant is typically 30–40 years, many plants will operate in excess of their design lives, provided that nuclear power plant engineers demonstrate by analysis, equipment and system upgrades, increased vigilance, testing and ageing management that the plant will operate safely. In the operation of nuclear power plants, safety should always be the prime consideration. Plant operators and regulators must always ensure that plant safety is maintained and, where possible, enhanced during its operating lifetime.

Nuclear power plant life management (PLiM) has gained increased attention over the past decade, and effective ageing management of systems, structures and components (SSCs) is a key element in PLiM for the safe and reliable long term operation of nuclear power plants. A PLiM programme is an effective tool that allows an operator to safely and cost effectively manage ageing effects in SSCs for long term operation (LTO). A PLiM programme helps facilitate decisions concerning when and how to repair, replace or modify SSCs in an economically optimized way, while assuring that a high level of safety is maintained. The option for extended nuclear power plant operation has been recognized by operators and regulators alike, as evidenced in the number of licence renewal programmes that are being developed by Member States.

After the severe accident at the Fukushima Daiichi nuclear power plant, the safe operation of nuclear power plants has become even more important; not only in terms of technical or ageing issues, but also in terms of management system and qualified workforce related issues. Application of an integrated management system and structured workforce planning are needed throughout the plant life in order to ensure effective plant organization and management.

The IAEA organized the first and second International Conference on Nuclear Power Plant Life Management respectively from 4 to 8 November 2002 in Budapest, Hungary, and from 15 to 18 October 2007 in Shanghai, China. Participants at the first and second conferences placed a high value on information exchange and recommended that similar conferences be organized within four to five years. Mindful of the importance of a periodic state of the art information exchange, the IAEA is organizing the third International Conference on Nuclear Power Plant Life Management from 14 to 18 May 2012 in Salt Lake City, USA. This conference will focus on topical issues affecting PLiM and thus is expected to be of particular interest to staff of utilities, research and design organizations, regulatory bodies, manufacturing and service companies, as well as government decision makers concerned with near, medium and long term energy needs.

B. Objective of the Conference

The objectives of the third international conference on PLiM are to:

- Emphasize the role of PLiM programmes in assuring safe and reliable nuclear power plant operation;
- Provide a forum for information exchange on national and international policies, regulatory

practices and safety culture and to demonstrate strategies, including application in an ageing management and PLiM programme;

- Provide key elements and good practices related to the safety aspects of ageing, ageing management and long term operation;
- Identify the economic impacts of PLiM programmes and methodologies for their evaluation;
- Help Member States further develop their PLiM programmes taking advantage of the latest available technology.

C. Programme Structure and Topics

To facilitate the conference objectives, each topical session will have the following format:

- A keynote speaker, who will present a paper by invitation;
- A set of presentations that supplement specific areas within the topical session and stimulate discussion among conference participants;
- A set of detailed technical papers that present the state of the art of the subject area.

C.1. Opening Session: Opening, plenary and keynote presentations

Opening addresses will be made by a senior management representative of the IAEA, a representative of the Government of the United States of America and the Chairperson of the Conference, who will be a senior manager from the USNRC. The opening session will set the conference objectives and provide background information on the status and trends in the field of PLiM. Keynote interventions will provide information about the development of PLiM technology that will emphasize the increasing reliance on a systematic and more effective approach to enhance the safe and economical operation of existing plants.

C.2. Session 1: Approaches to plant life management

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

- Impact of the severe accident at the Fukushima nuclear power plant on safe long term operation;
- Sharing of recent operating experience and Member States' feedback;
- Methodology for plant life management, scope, terms, definitions and development;
- Methodology for component selection;
- Selection criteria for plants as candidates for long term operation;
- Provisions for operational licence renewal, relicensing process;
- Special requirements for periodic safety assessment reviews;
- Plant life management feedback for advanced/improved design features;
- Consideration of design basis re-evaluation;
- Quality assurance issues associated with PLiM.

C.3. Session 2: Economics of plant life management

The aim of this session is to improve plant economic performance through PLiM. Topics to be addressed in the presentations are:

- Potential business opportunities and risks, including power uprating issues related to PLiM;
- Cost effective strategy for modernization and replacement of structures, systems and components (SSCs);
- Economic analysis for decision making;
- Cost effective technologies/practices for maintenance, inspection and surveillance;
- Pre-shutdown preparation strategy and procedures, including technical aspects;
- Long term strategies for spent fuel and waste management;
- Activities during decommissioning and associated costs.

C.4. Session 3: Ageing management and related operational programmes

The aim of this session is to share technical updates on ageing management issues, including maintenance and inspection planning, inspection issues and control of material degradation. Topics to be addressed in the presentations are:

- Characteristics of effective ageing management programmes;
- Structural integrity programme for long lived passive components;
- Record keeping, condition based method and other methods of monitoring degradation;
- Time limited ageing analysis (e.g. embrittlement, pressurized thermal shock, fatigue, equipment qualification);
- Maintenance optimization through predictive maintenance, preventive maintenance and corrective maintenance;
- Inspection methodologies and strategies;
- Risk and reliability evaluation of components and piping;
- Mitigation of material degradation.

C.5. Session 4: System, structure and component design modification, modernization, refurbishment and replacement

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

- Aspects of SSC design modification, modernization, refurbishment and replacement (procurement, obsolescence and qualified spare parts availability);
- Replacement of large components, such as steam generators and reactor vessel heads;
- Effective management of instrumentation and control (I&C), including modernization, methods and tools;
- Lessons learned from the planning and implementation of new I&C systems.

C.6. Session 5: Managerial issues concerned with plant life management

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

- Appropriate crisis management and decision making strategies and techniques for ‘contingent’ resources, both equipment and human resources, to be deployed in supporting severe accident management;
- Managing operational experience;
- Management methods/decision making process;
- Effects of severe accident scenarios on human performance and potential human reactions;
- Management of external resources, including international resources, to mitigate the technical and emotional consequences of severe accidents;
- Training methods and knowledge management;
- Workforce planning and specific training issues related to PLiM for LTO.

C.7. Session 6: Regulatory issues concerned with plant life management

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

- Licensing application process;
- Contribution of operational experience and feedback in the enactment of effective regulation;
- Harmonization of regulatory requirements at different levels;
- Maintaining and improving safety;
- Requirements for spent fuel and radioactive waste storage.

C.8. Closing Session: Panel discussions and closing of the conference

The closing session will include short presentations followed by a panel discussion on current national impact and approaches to PLiM after the severe accident at the Fukushima NPP. The panel discussion by high level technical experts will consider:

- Technological issues;
- Regulatory issues;
- Political issues;
- Safety culture;
- Public information.

To conclude the conference, the Chairperson and session chairs will participate in a panel discussion on key issues related to PLiM and will present their summaries.

C.9. Technical tour

A technical tour to the Idaho National Laboratory (INL) and Advanced Test Reactor (ATR) is foreseen. Additional information about the tour will be made available on the IAEA web page (see Section O).

D. Exhibition

A limited amount of space will be offered by the hosts for companies' displays/exhibits of equipment and services during the conference. Interested parties should contact the local organizers:

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E-mail: 3PLIM@pnl.gov, Leonard.Bond@pnl.gov

E. Audience

The conference is directed mainly at the staff of utilities, research and design organizations, regulatory bodies, manufacturing and service companies, as well as government decision makers concerned with near, medium and long term energy needs.

F. Contributed Papers and Posters

Concise papers on issues falling within the topics outlined in Section C may be submitted as contributions to the conference. All papers, apart from invited papers, must present original work and they should not have been published elsewhere.

(a) Submission of synopses

Persons who wish to present a paper or poster at the conference must submit an extended synopsis (in English) of maximum 800 words (i.e. two A4 format pages of single spaced typing or the equivalent, including any tables or diagrams and a few pertinent references) together with the completed Form for Submission of a Paper (Form B) and the Participation Form (Form A) to the competent official authority (see Section G) for subsequent electronic transmission to the IAEA (official.mail@iaea.org) to be received by the IAEA by **18 October 2011**. In addition, the synopsis must be sent electronically to plim@iaea.org. The synopsis should give enough information on the content of the proposed paper to enable the selection committee to evaluate it. Introductory and general matters should not be included.

Authors are urged to make use of the Extended Synopsis Template available on the conference web page (see Section O). Also attached to this announcement is a sample extended synopsis.

(b) Acceptance of papers/posters

The synopsis will be considered only if the Participation Form A and Paper Submission Form B have been received by the deadline and through the appropriate official channels.

In order to provide ample time for discussion, the number of papers that can be accepted for oral presentation is limited. If the number of relevant and high quality papers submitted for selection exceeds the acceptable number, some of them will be selected for poster presentation.

Authors will be informed by **30 December 2011** whether their paper has been accepted by the Programme Committee on the basis of the synopsis submitted. At the same time, authors will be advised whether their paper has been accepted for oral presentation or for presentation as a poster.

All accepted synopses will be reproduced in unedited form in the Book of Extended Synopses, which will be distributed to all participants at registration.

Furthermore, selected authors will be asked to prepare full papers for publication in the proceedings. They will receive guidelines for the preparation of papers and will be informed of the deadlines for their submission.

The Secretariat reserves the right to exclude papers that do not comply with its quality standards and do not apply to one of the topics in Section C above.

(c) **Proceedings**

The proceedings of the conference will be published by the IAEA as soon as possible after the conference.

G. Participation

All persons wishing to participate in the conference are requested to **register online in advance** through the conference web page. In addition they are required to send a completed Participation Form (Form A) and, if applicable, the Paper Submission Form (Form B) and the Grant Application Form (Form C) to the competent national authority (e.g. the Ministry of Foreign Affairs or national atomic energy authority) or to one of the organizations invited to participate for subsequent electronic transmission to the IAEA (official.mail@iaea.org).

A participant will be accepted only if the Participation Form is transmitted through the competent national authority of a Member State of the IAEA or by an organization invited to participate.

Participants whose official designations have been received by the IAEA will receive further information on the conference approximately three months before the beginning of the meeting. This information will also be posted on the conference web page (see Section O).

H. Expenditures

No registration fee is charged to participants.

The IAEA is generally not in a position to bear the travel and other costs of designated participants to the conference. The IAEA has, however, limited funds at its disposal to help meet the cost of attendance of selected specialists from Member States eligible to receive technical assistance under the IAEA's technical cooperation programme. Such assistance may be offered, upon specific request,

provided that in the IAEA's view the participant will make an important contribution to the meeting. In general, not more than one grant will be awarded to any one country.

If governments wish to apply for a grant on behalf of one of their specialists, they should address specific requests to the IAEA to this effect. Governments should ensure that applications for grants are:

1. Submitted by **18 October 2011**;
2. Accompanied by a duly completed and signed Grant Application Form (Form C);
3. Accompanied by a completed Participation Form (Form A).

Applications that do not comply with the above conditions cannot be considered.

Approved grants will be issued in the form of a lump sum payment that usually covers only part of the cost of attendance.

I. Working Language

The working language of the conference will be English. All communications, synopses and full papers must be sent to the IAEA in English.

J. Documents

A preliminary programme of the conference will be available on the conference web page before the meeting. The final programme and the book of extended synopses will be available upon registration at the conference.

K. Conference Venue and Accommodation

The conference will be held at Hilton Salt Lake City Center, 255 South West Temple Salt Lake City, Utah 8410, USA. Detailed information on accommodation and other administrative details will be available on the conference web page well in advance of the conference. Detailed information on accommodation and other relevant matters will be sent directly to all designated participants approximately three months before the meeting. This information will also be made available on the conference web page as soon as possible.

L. Visa

Participants who require a visa to enter the USA should submit the necessary application to the nearest diplomatic or consular representative of the USA as soon as possible and also personal information (full name/nationality/occupation/employer/passport no./duration of stay) should be submitted to Ms. Becky Ford, PNNL, community relations (Tel: +1-509-372-4977, E-mail: 3PLIM@pnl.gov or Becky.Ford@pnl.gov), three months prior to the conference.

M. Key Deadlines

Submission of Form B and extended synopsis (800 words)	18 October 2011
Submission of Grant Application Form (Form C):	18 October 2011
Notification of acceptance of papers/posters:	30 December 2011
Submission of full paper (only upon request by the IAEA):	30 April 2012

N. Conference Secretariat

Address of the Conference Secretariat:

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretaries and correspondence on administrative matters to the IAEA Conference Services Section.

O. Conference web page

Please visit the IAEA conference web page regularly for new information regarding this conference:

<http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=41982>