



International Conference on Operational Safety Performance in Nuclear Installations

30 November – 2 December 2005
Vienna International Centre,
Vienna, Austria

ANNOUNCEMENT AND CALL FOR PAPERS

1. INTRODUCTION

In 2001, the IAEA organized an ‘International Conference on Topical Issues in Nuclear Safety’. The issues discussed during the conference were: (1) risk- informed decision-making; (2) influence of external factors on safety; (3) safety of fuel cycle facilities; (4) safety of research reactors; and (5) safety performance indicators. Senior nuclear safety decision makers reviewed the issues and formulated recommendations for future actions by national and international organizations.

In 2004, the IAEA organized an ‘International Conference on Topical Issues in Nuclear Safety’ in Beijing China. The issues discussed during the conference were: (1) changing environment – coping with diversity and globalization; (2) operating experience – managing changes effectively; (3) regulatory management systems – adapting to changes in the environment; and (4) long term operations – maintaining safety margins while extending plant lifetimes. The results of this conference confirmed the importance of operators and regulators of nuclear facilities meeting periodically to share experience and opinion on emerging issues and future challenges of the nuclear industry.

Substantial progress has been made, and continues to be made by Member States in enhancing the safety of nuclear installations worldwide. At the same time, more attention is

being given to other areas of nuclear safety. The safety standards for research reactors are being updated and new standards are planned on the safety of other facilities in the nuclear fuel cycle. The Agency has taken a lead role in this effort and is receiving much support from its Member States to gain international consensus in these areas.

The globalization of the energy market and the resulting changes in licensee structure and management have led regulatory authorities to pay more attention to organizational performance in maintaining a high level of safety. These changes have emphasized the need to share experiences on regulatory management systems and to harmonize regulatory approaches.

More than 50 percent of current nuclear power plants have been in operation for more than 20 years and more operators are considering continued operation beyond the original design lifetime of the plant. Safe long-term operation requires a demonstration that nuclear plants will continue to operate within their design envelope.

The nuclear power industry and regulatory authorities remain challenged in maintaining the technical and human infrastructure necessary to ensure that operational safety performance remains appropriate. Economic pressures and government reforms have resulted in the application of new management and administrative approaches, and diligent attention is required to verify that nuclear safety principles continue to receive the highest priority.

A new area of focus for nuclear installations is their security and in particular, how synergies that may exist between nuclear safety and security can be optimized. The fact that these two areas are now under one department in the IAEA is indicative of the Agency's intention to enhance co-ordination in these areas.

Although safe operational performance at nuclear installations has steadily improved over the years, events have been consistently reported for which the underlying root causes have been identified as being in the area of safety management. These events all have common issues that have contributed (in part) to non-conservative decisions or omissions being made at various levels in the Utility or plant organization. In addition, in almost all cases, the omission of lessons learned from years of operating experience contributed to the severity of the event.

With the emerging growth of new designs and evolutionary reactors, it is now of utmost importance that the entire spectrum of operating experiences (not just related to events) be reflected into the design, construction, commissioning, and operation of these new reactors.

A nuclear installation must be envisioned as an integrated organic entity and cared for much like that of the human body. A process capable of maintaining nuclear safety as the highest priority must control changes to the original design, organization and operation of future reactors. A global comprehensive approach to the application of operating experience is necessary for ensuring the future of operational safety performance. The good practices and lessons learned from many years of operating experience need to be reflected into the physical plant, the organization and in the human factors area of the entire life cycle of each nuclear installation. Operating experience should be the foundation for new and evolutionary reactor designs.

Therefore, a “General Theme” for this conference will be “how best to reflect lessons learned from the entire entity of operating experiences into; past, present and future reactors”.

2. OBJECTIVE

The objective of the conference is to foster the exchange of information on operational safety performance and operating experience in nuclear installations, with the aim of consolidating an international consensus on:

- the present status of these issues;
- emerging issues with international implications;
- priorities for future work; and
- needs for strengthening international co-operation, including recommendations for future activities for the IAEA, Nuclear Operators and Regulatory Authorities.

3. TOPICS

The following topics have been identified as subjects for this conference. Papers related to nuclear installations **other than Nuclear Power Plants (NPP's)** are welcome. The Conference will also accept papers related to industry programs and facilities, **other than nuclear**, so as to enrich discussions and provide a wider background on practices related to the management of safety worldwide.

How best to learn from and share operational safety experience and manage changes during all life cycle phases?

- methods used to clearly identify, analyze and crystallize operating experience into a consistent, coherent and usable comprehensive system of knowledge
- use of internal and external Operational Experience Feedback to ensure lessons learned elsewhere are applied, in order to avoid recurrence of events
- breaching artificial barriers to improve sharing of safety related information
- use of self sustaining networks and information technology methods to leverage resources
- role of the IAEA OSART and PROSPER safety related services in evaluating capabilities of operating organizations to utilize operating experience
- Management commitment to continuous improvement, benchmarking
- better use of good practices
- effective corrective action programme – analysis beyond direct cause, management commitment to complete corrective action programme
- optimizing use of low level events and near misses – trending of precursors, management commitment to be pro-active rather than reacting to significant events
- overcoming complacency, overconfidence, loss of safety focus in a production versus safety environment
- transfer of responsibility, accountability
- outage management and configuration management
- safety focus during the last period of operation before decommissioning
- communication to the staff

- learning from commissioning activities in a diversified environment .

How best to learn from and share experiences on regulatory management systems and to harmonize regulatory approaches?

- effectiveness of oversight and inspection techniques
- goals of management systems
- self assessment of regulatory body performance
- structure of the management systems, models of excellence
- quality assurance in management systems
- quality management system certification
- role of IAEA Safety Standards in harmonizing national requirements
- role of IAEA IRRT in promoting regulatory consistency
- establishing the right balance in using, in a complementary manner, both deterministic and probabilistic approaches during design, operations and regulatory activities
- the timing of senior regulatory intervention
- experiences from the Asian Nuclear Safety Network (progress and implementation)

How best to achieve and ensure the safety of extended operations?

- need for standards for the transition from “normal operations” to the period of operations beyond the design assumptions
- different regulatory approaches for authorizing extended operations
- preconditions and tools needed for safety analysis demonstrating that the plant will continue to operate within its design envelope:
- sound knowledge of the current design basis
- accurate knowledge of the actual state of the plant
- verification that adequate safety margins will be maintained
- aging management in the broadest context, addressing both equipment and personnel issues
- creating international databases on aging related lessons learned, experience gained from long term operation and results from international research programmes.

How best to ensure that a global regime of operating experiences is reflected into the design, construction, commissioning and operation of new and evolutionary reactors?

- foundations of management for ensuring the use of operating experiences
- international cooperation needed by multicultural projects for new reactor design, construction and operation
- managing changes resulting from operating experiences during design and commissioning of new reactors
- determining the roles and responsibilities of vendors during the design, construction, commissioning and operation of nuclear installations
- managing changes caused by operating experiences in organizational and human factors
- safety management of contractors including authorization and control
- ownership of design conscience for new and evolutionary reactors

4. PROGRAMME STRUCTURE

The conference is organized in such a way as to facilitate exchanges and discussions among the participants.

An **opening session** will address the conference objectives.

A series of four **technical sessions** will address the four above-mentioned topics of interest. Each session will consist of:

- an overview presentation and summaries of the relevant contributed papers;
- invited keynote paper(s);
- discussion lead-in statements
- open discussion.

Poster sessions will be organized for all contributed papers.

A **final session** will include presentations by the session chairpersons of the main conclusions drawn in their respective sessions and of the recommendations for the future development of international co-operation, including IAEA activities.

5. AUDIENCE

The conference is directed at a broad range of experts in the area of safe nuclear operations, including professionals from the different disciplines involved in the operations and safety of nuclear power plants, installations in other parts of the fuel cycle and research reactors. It is aimed at both licensees and governmental officials, including persons from regulatory bodies, the industry and academe as well as senior policy makers.

6. PARTICIPATION

All persons wishing to participate in the conference are requested to complete a Participation Form (Form A) and send it as soon as possible to the competent national authority (see Section 9) for subsequent transmission to the IAEA. A participant will be accepted only if the Participation Form is transmitted through the competent official authority of a Member State of the IAEA or by an organization invited to participate.

Details on the logistics of the conference will be sent to all designated participants approximately two to three months before the meeting. This information will be posted on the conference web page:

<http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=133>

7. CONTRIBUTED PAPERS AND POSTERS

Concise papers on issues falling within the scope of the conference (see Section 3 above) may be submitted as contributions to the conference. These papers will not be presented orally, but will be summarized by a Rapporteur and included in a Book of Contributed Papers to be distributed free of charge to all participants upon registration. Authors of contributed papers may present the substance of their paper(s) in the form of a **Poster**, which will be exhibited in the Poster Area.

The **contributed papers** should not exceed **four pages in length** and must be submitted in English. Each contributed paper must be preceded by an abstract not exceeding 300 words. Authors should state to which of the above technical topic their contribution relates. Authors must use the IAEA's Proceedings Paper Template in Word 2000 (user instructions are available on the conference web page (Section 15)). Guidelines for the preparation of a contributed paper are given in the attached "IAEA Guidelines for Authors on the Preparation of Manuscripts for Proceedings" and the "IAEA Guidelines for the Preparation of a Poster".

The contributed papers should be submitted to the following e-mail address:

op-safety@iaea.org

To permit selection and review, the electronic version of the contributed paper must be received by the Scientific Secretariat not later than **28 July 2005**.

In addition to the electronic submission, a copy of the contributed paper(s) must also be submitted through one of the competent official authorities (see Section 9). The paper should be sent with a completed Form for Submission of a Paper (**Form B**) and the Participation Form (**Form A**) to reach the IAEA not later than **28 July 2005**.

Only papers that have been received by the above deadline and through the appropriate official channels will be considered for inclusion in the Book of Contributed Papers. Final acceptance will occur after a peer review process. Furthermore, 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 3, above.

Papers that are not sent through the official channels and papers arriving after the deadline will not be considered.

Authors will be informed by **September 2005** whether their papers have been accepted for inclusion in the Book of Contributed Papers and for presentation as a poster.

8. EXPENDITURES/GRANTS

No registration fee is charged to participants.

As a general rule, the IAEA does not pay the cost of attendance, i.e. travel and living expenses, of participants. However, limited funds are available to help meet the cost of the attendance of selected specialists, mainly from developing countries with low economic resources. Generally, 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:

- (a) are submitted by **28 July 2005**;
- (b) are accompanied by a duly completed and signed Grant Application Form (see attached Form C).

Applications that do not comply with the conditions stated under (a) and (b) cannot be considered.

The grants awarded will be in the form of lump sums and will usually cover **only part of the cost** of attendance.

9. CHANNELS OF COMMUNICATION

The Participation Form (Form A), and if applicable, the Paper Submission Form (Form B) and the Grant Application Form (Form C) must be sent through one of the competent official authorities (Ministry of Foreign Affairs or national atomic energy authority) for subsequent transmission to the IAEA. Subsequent communications concerning technical matters should be sent to the Scientific Secretary and communications on administrative/logistical matters to the Conference Secretariat (see Section 14).

10. DISTRIBUTION OF DOCUMENTS AND PROCEEDINGS

A preliminary programme of the conference will be sent to all officially designated participants well in advance of the meeting and will also be available on the IAEA conference web site (see Section 15).

The Final Programme and the Book of Contributed Papers will be available free of charge upon registration at the conference.

The Proceedings of the conference to be published by the IAEA, will contain welcoming addresses, overview presentations, reporter reports, invited keynote papers, session summaries, the conclusions presented by the President of the Conference on the last day, and the records of the discussions. The contributed papers will be included as a CD ROM. The Proceedings can be ordered, at a special discounted price, during the Conference.

11. WORKING LANGUAGE

The working language of the meeting will be English. All communications must, therefore, be sent to the IAEA in English.

12. ACCOMMODATION

Detailed information on accommodation and other administrative details will be sent to all officially designated participants approximately two to three months before the meeting. It will also be available on the IAEA conference web site.

13. VISAS

If you require a visa to enter Austria (the 'Schengen visa'), please submit the necessary applications to the nearest diplomatic or consular representative of Austria as early as possible (please note that this procedure may take up to three weeks).

14. CONTACT INFORMATION

(a) Scientific issues – Scientific Secretariat (IAEA)

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(b) Administrative Issues – Conference Organizer (IAEA)

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15. CONFERENCE WEB PAGE

Please visit the IAEA conference web page regularly for new information regarding the conference under: <http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=133>