



IAEA

International Atomic Energy Agency

International Conference
on
Effective Nuclear Regulatory Systems
Facing Safety and Security Challenges

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Moscow, Russian Federation

Organized by the
International Atomic Energy Agency

Hosted by the
Government of the Russian Federation

ANNOUNCEMENT AND CALL FOR PAPERS

1. INTRODUCTION

In 1991, the IAEA held an ‘International Conference on the Safety of Nuclear Power: Strategy for the Future’. This Conference marked the beginnings of an international safety regime to be created on the basis of international legal instruments such as the Convention on Nuclear Safety and supported by a set of up to date nuclear and radiation safety standards and related review services.

In 1998, the IAEA sponsored an ‘International Conference on Topical Issues in Nuclear, Radiation and Radioactive Waste Safety’. In response to the concerns identified and the recommendations provided by the conference, actions were taken to improve the monitoring of safety by: developing performance indicators; furthering the use of probabilistic safety insights to complement and help optimize the prescriptive nature of regulations; and addressing actions needed to ensure the future availability of competent professionals.

In 2001, the IAEA sponsored an ‘International Conference on Topical Issues in Nuclear Safety’. The findings were again essential in providing the IAEA and the nuclear industry with insights as to where future activities should be focused. Recommendations addressed: the need to develop international guidance on the use of probabilistic safety insights; the potential negative impacts on safety of external factors; the need for guidance on emergency preparedness for fuel cycle facilities; the safety challenges associated with poor utilization programmes at research reactors; and the need to develop simple indicators of safe operating performance.

In 2003, the IAEA organized an ‘International Conference on National Infrastructure for Radiation Safety: Towards Effective and Sustainable Systems’. Recommendations from this Conference resulted in the establishment of an IAEA policy — and actions to implement it — on promoting effective and sustainable national regulatory infrastructures for the control of radiation sources, which was endorsed by the Board of Governors and the 48th General Conference.

In 2004, the IAEA sponsored an ‘International Conference on Topical Issues in Nuclear Installation Safety: Continuous Improvement of Nuclear Safety in a Changing World’. This was a follow-up to the International Conferences in 1998 and 2001, and it dealt with the issues relating to the challenges before the world community in an environment of change and globalization. The conference identified: the need to harmonize regulatory approaches; the concept of operational experience and the need to foster an environment conducive to becoming ‘learning organizations’; and the concept of extended operation.

In 2005, the IAEA sponsored an ‘International Conference on Nuclear Security: Global Directions for the Future’. This conference considered: the threat of malicious acts involving nuclear and other radioactive material; the experiences, achievements and shortcomings of national and international efforts to strengthen the prevention of, detection of and response to malicious acts involving these materials; and the ways and means to achieve future improvements. In the findings, the president of the conference stated that nuclear terrorism is one of the biggest threats to society, and that continued and enhanced efforts are needed to strengthen nuclear security worldwide. This should be facilitated by establishing IAEA nuclear security guidelines and recommendations.

In 2005, the IAEA also sponsored an ‘International Conference on the Safety and Security of Radioactive Sources: Towards a Global System for the Continuous Control of Sources Throughout Their Life Cycle’. In the findings, the president of the conference highlighted the

following areas: the Code of Conduct on the Safety and Security of Radioactive Sources; import and export controls; dealing with the legacy of past activities; sustainability and continuity of control; illicit trafficking and inadvertent movement; and emergency management.

As noted earlier, one of the results of the International Conference in 1991 was to establish the Convention on Nuclear Safety (CNS), which now has 56 Contracting Parties. The third review meeting of the Contracting Parties was held in April 2005.

Several other international legal instruments are also now in place. These include: the Joint Convention on the Safety of Spent Fuel and Radioactive Waste Management (34 Contracting Parties); the Convention on Early Notification of a Nuclear Accident (95 Contracting Parties); the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (91 Contracting Parties); the Code of Conduct on the Safety and Security of Radioactive Sources and supplementary Guidance on the Import and Export of Radioactive Sources; and the Code of Conduct on the Safety of Research Reactors.

The Convention on the Physical Protection of Nuclear Material (CPPNM) has been in force since 1987, covering the physical protection of nuclear material while in international transport. At a diplomatic conference in July 2005, delegates agreed to fundamental changes that will substantially strengthen this Convention by legally binding the States Parties to protect nuclear facilities and material in peaceful domestic use and storage as well as transport, and to punish those who would engage in nuclear theft, sabotage or even terrorism. It will also provide expanded cooperation between and among states regarding rapid measures to locate and recover stolen or smuggled material, to mitigate any radiological consequence of sabotage, and to prevent and combat related offences. The new rules will come into effect once they have been ratified by two-thirds of the 112 States Parties of the Convention.

In addition, there is cooperation among regulators in forums such as the Annual Meeting of Senior Regulators of Countries Operating CANDU-Type Nuclear Power Plants, the International Nuclear Regulators Association (INRA), the Network of Regulators with Small Nuclear Programmes (NERS), the Western European Nuclear Regulators' Association (WENRA), and the Nuclear Ibero-American Forum of Regulators (FORO). The IAEA also provides an opportunity for senior regulators to meet and discuss views and experience in annual meetings of regulators convened during the IAEA General Conferences.

While these multilateral or regional forums of regulators have successfully addressed many important issues over the years, there is an emerging need for an international forum to address global issues and approaches to combat the challenges faced by the regulators responsible for nuclear and radiation safety and nuclear security.

This present conference is expected to provide the platform for enhanced international regulatory cooperation and continuous improvement of the global safety and security regulatory regime. The focus of this conference will be on developing a global vision and commitments for the future.

2. OBJECTIVE

The objective of this senior regulators' conference is to develop a common understanding and appropriate approaches and means to face current challenges in nuclear and radiation safety and nuclear security. The conference will propose recommendations concerning:

- The effectiveness and sustainability of national regulatory systems for the safe and secure use of nuclear energy and radiation by addressing key factors and challenges;
- The review and further development of regulatory approaches for the use of advanced technologies and innovative designs to enhance nuclear and radiation safety and interfaces with nuclear security;
- Additional instruments and mechanisms for co-operation among regulators in international forums to respond to current and future challenges.

3. TOPICS

The following topical issues have been identified as subjects for the conference sessions.

Topical Issue No. 1: independence and regulatory effectiveness

This session will address changes in governmental and economical environments in which national regulatory bodies will have to establish and maintain effective independence and to perform their regulatory missions effectively and efficiently. While the prime responsibility for safety and security lies with the operators, national regulatory bodies and related competent authorities are the organizations through which governments have to assure national compliance with international obligations regarding nuclear and radiation safety and nuclear security. The importance of regulatory independence is affirmed by the Convention on Nuclear Safety, the Joint Convention, the amended Convention on Physical Protection of Nuclear Material and Nuclear Facilities and the Code of Conduct for the Safety and Security of Radioactive Sources. IAEA safety standards establish requirements and give guidance on the nuclear regulators' roles and responsibilities. Regulatory independence, including the necessary authority and resources, are key prerequisites to performing regulatory functions, as stated in the IAEA safety standards.

Typical topics for discussion will address:

- Issues of independence in accordance with international standards
 - Understanding the concept
 - Enabling independence
 - Sustaining
 - Measuring;
- Independence de facto versus independence de jure;
- Transparency of regulatory processes and decisions; transparency versus confidentiality;
- Perceptions by stakeholders and interfaces with stakeholders;
- Mission statements, goals/core values and strategic plans of regulatory bodies;
- Using risk informed decision making to increase safety and to minimize the regulatory burden;
- Development and assurance of an adequate level of staffing, regulatory competence and resources/training;
- Establishment and revisions of safety and security regulations, with national and international needs taken into account;
- Contingency planning; emergency preparedness and response;
- Quality management systems of regulatory bodies and feedback systems for

- continuous improvement;
- Establishment and defence of credibility, visibility and confidence in the performance of the regulatory body;
- Internal and external communications;
- Establishment and assurance of effective independence against undue influences;
- Measuring and improving regulatory effectiveness;
- The role of international standards and international co-operation for the effectiveness of national regulators;
- Experience with CNS review processes to improve national regulatory systems;
- Steps to be taken to achieve universal adherence to safety and security conventions.

Topical Issue No. 2: Regulatory challenges (including advanced technologies/technical progress)

This session will address how regulators should approach dealing with technological progress, innovative designs and a changing environment, and new nuclear security threats and risks to enable the sustainable use of nuclear power and nuclear technologies to the benefit of society and to enable further progress in nuclear and radiation safety and nuclear security.

Typical topics for discussion will address:

- Strategies of the nuclear and radiation industry for future uses, such as evolutionary designs and advanced waste management technologies;
- Public expectations with regard to future nuclear and radiation safety and nuclear security;
- Key regulatory challenges from a global point of view/the new environment;
- Threat assessment and adequate response;
- Proliferation resistant technologies;
- Regulatory approaches to promote technological progress;
- Licensing new applications and designs in a global context;
- Code of Conduct on the Safety and Security of Radioactive Sources and of the associated import/export guidance;
- Code of Conduct on the Safety of Research Reactors;
- Amended Convention on Physical Protection of Nuclear Material and Nuclear Facilities;
- Balance between safety and security objectives when introducing new technologies;
- Balancing risks and benefits in medical applications and how to regulate (role of the regulator compared with that of physicians);
- Justification of new activities or interventions;
- Preparation of the regulator to be ready for new technologies and applications;
- Approach to regulatory research related to new technologies;
- Adaptation of the regulatory system and of regulations to new nuclear technologies and applications.

Topical Issue No. 3: Enhanced international regulatory co-operation

This session will address experience with established practices of international regulatory co-operation to approach challenges due to globalization, such as:

- How to license facilities designed to different standards and criteria;
- How to sustain effective safety oversight;
- How to balance between the risk informed and deterministic approaches in a regulatory framework;
- How to ensure that appropriate competences and skills are retained in the regulatory work force;
- How to bridge the gap between different national standards and criteria.

Typical topics for discussion will address:

- The role of international safety standards in international co-operation and national practices;
- Complementarities of international standards and regional directives/national regulations;
- The role of international appraisal and peer review missions;
- The effectiveness of review processes relating to the nuclear conventions;
- A common international framework and infrastructure for co-operation between regulators;
- Networking to share nuclear and radiation related information and knowledge;
- Networking as a way to bridge geographical and cultural barriers;
- International co-operation in regulating ageing management and nuclear power plant life extension;
- Facilitating the secure exchange of technology and materials;
- Further enhancement of co-operation among regulators in international forums to respond to current and future challenges;
- Learning from other industries that are regulated for safety and security.

4. PROGRAMME STRUCTURE

The **opening session** will highlight the importance of the conference and address the conference's global objectives.

A series of three **technical sessions** will address the individual topical issues mentioned above. After the discussions in the technical sessions, conclusions and recommendations will be drawn up.

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.

A closing **panel discussion** will focus on 'Safety and Security Outlook: Global Vision and Commitments for the Future'.

This discussion will bring into focus the essence of the various sessions and be the capstone of the week's activities, and will provide strong input for the conference's concluding session.

Participants will include senior executives from regulatory bodies and technical support organizations.

The conference will feature a **concluding session** at which the overall results and conclusions of all topical sessions and the panel discussion will be summarized by the chairpersons. The President of the Conference will highlight the recommendations for the future development of international co-operation, including how to transfer the results of the topical discussions to inform the IAEA's programmes.

5. AUDIENCE

The conference is directed at a broad range of experts in the area of nuclear safety and security regulation, bringing together the world's senior regulators responsible for the areas of nuclear and radiation safety and nuclear security.

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/Meetings2006.asp>

7. CONTRIBUTED PAPERS

Concise papers on issues falling within the scope of the conference (see Section 3 above) are welcomed as contributions to the conference. These papers will not be presented orally, but will be summarized by the chairpersons and included in a Book of Contributed Papers/ CD-ROM to be distributed free of charge to all participants upon registration.

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 topics their contribution relates. Authors must use the IAEA's Proceedings Paper Template in Word 2000 (user instructions are available on the conference web page (see 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'.

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

G.Philip@iaea.org

or sent on diskette/CD-ROM to the Scientific Secretariat (see Section 14). The diskette label should identify the paper, the proposed session topic and the software application used (the use of Microsoft Word is encouraged). To permit selection and review, the electronic version of the contributed paper must be received by the Scientific Secretariat not later than **31 October 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 **31 October 2005**.

Only papers that have been received by the above deadline(s) and through the appropriate official channels will be considered for inclusion in the CD-ROM 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 set out 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 **16 December 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 levels of 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 **31 October 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), the Paper Submission Form (Form B) and, if applicable, 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, rapporteurs' reports, invited keynote papers, session summaries, the conclusions presented by the President of the Conference on the last day, and records of the discussions. The contributed papers will be included unedited on a CD ROM. The Proceedings can be ordered, at a special discounted price, during the Conference.

11. WORKING LANGUAGE

The working languages of the meeting will be Russian and English. All communications should 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

Designated participants who require a visa to enter the Russian Federation should submit the necessary application to the nearest diplomatic or consular representative of the Russian Federation as soon as possible. Please note that the procedure could take up to three weeks.

14. CONTACT INFORMATION

The following persons may be contacted for further information or assistance:

(a) Scientific issues – Scientific Secretary (IAEA)

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(b) Administration issues - Conference Organizer (IAEA)

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15. CONFERENCE WEB PAGE

Please visit the IAEA conference web site regularly for new information regarding the conference under:

<http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=150>