



International Conference on Human and Organizational Aspects of Assuring Nuclear Safety — Exploring 30 Years of Safety Culture

**IAEA Headquarters
Vienna, Austria**

22–26 February 2016

Ref. No.: IAEA-CN-237

Announcement and Call for Papers

A. Background

The International Atomic Energy Agency (IAEA) is organizing this conference to reflect on and share experiences related to the pivotal role that human and organizational aspects play in nuclear safety. It is recognized nowadays that nuclear operations comprise a complex and dynamic sociotechnical system, and that human and organizational factors (HOF) need to be proactively managed to assure safe performance. For example, safety culture alongside HOF has become an integral part of defence in depth and is addressed in the IAEA Safety Fundamentals as well as in Safety Requirements publications in the IAEA Safety Standards Series. The human and organizational capabilities for assuring safety have been developed over many years and have progressed thanks to the lessons learned especially from events and accidents. Reviewing the progress achieved after assimilating these hard lessons, we find that the Three Mile Island accident (1979) highlighted the importance of human factors in the design of equipment and

interfaces, as well as the importance of operator training for responding to abnormal situations. Thirty years ago, the Chernobyl accident was investigated by the International Nuclear Safety Advisory Group (now known as the International Nuclear Safety Group (INSAG)), which concluded that one of the key lessons learned was the importance of a strong ‘safety culture’ to maintain safe operation. Five years have now passed since the Fukushima Daiichi accident, and the need to implement a systemic approach to safety, i.e. the interaction between humans, technology and organizations within the national nuclear infrastructure is one of the main lessons emerging from the investigations.¹

The IAEA has supported its Member States in promoting and fostering the exchange of scientific information and practical approaches on how to improve safety culture since the concept was formally defined in the INSAG report *Safety Culture* (Safety Series No. 75-INSAG-4, IAEA, Vienna, 1991). The concept has been formalized into safety requirements for governments, regulatory bodies as well as licensees.² In recent years, the IAEA’s work has been focused on a systemic approach to safety and the development of a structured support service for organizations in Member States to help them establish a continuous improvement process for safety culture. This conference will share the knowledge accumulated in the area of safety culture as well as HOF, and will allow participants to take a step back and reflect on what the nuclear community has learned in the 30 years since the Chernobyl accident. In particular, the conference will review the developments since the last safety culture conference held in Rio de Janeiro, Brazil, in 2002, and will also take a look forward to the more recent lessons learned from the Fukushima Daiichi accident. The focus of the conference will be divided into three main parts:

- Reflection on the past lessons learned, and, in particular, on what has and what has not been used to improve nuclear safety.
- Reflection on current approaches, methods and research.
- Reflection on the future needs for building organizational resilience capabilities in order to further strengthen defence in depth.

To achieve safe performance in practice, all levels of an organization and all areas of nuclear safety responsibility must be addressed. Appropriate expertise and experience must be developed and made available. The conference will be organized to meet the interests of various stakeholders, e.g. governmental bodies, regulatory bodies, nuclear facility owners, licensees, technical support organizations, vendors, research institutes. All different phases of nuclear operations will also be addressed, from the launching to the phasing out of nuclear power programmes. The topics discussed at the conference will also be relevant for managers and experts from organizations working with any type of radiological sources. Speakers will be representing all the above-mentioned perspectives. There will also be invited speakers from other high hazard industry sectors and high hazard organizations. The Conference Secretariat welcomes contributions from executive managers and experts in the areas covered

¹ See the *IAEA Report on Human and Organizational Factors in Nuclear Safety in the Light of the Accident at the Fukushima Nuclear Power Plant* (IAEA, Vienna, 2014).

² See the Safety Requirements publications *Governmental, Legal and Regulatory Framework for Safety* (IAEA Safety Standards Series No. GSR Part 1, Vienna, 2010) and *The Management System for Facilities and Activities* (IAEA Safety Standards Series No. GS-R-3, Vienna, 2006), as well as the Safety Guides *Application of the Management System for Facilities and Activities* (IAEA Safety Standards Series No. GS-G-3.1, Vienna, 2006) and *The Management System for Nuclear Installations* (IAEA Safety Standards Series No. GS-G-3.5, Vienna, 2009).

by the conference who are willing to share their experience and help attendees to gain new insights into safety culture improvements that can be implemented at their home organizations.

B. Objectives

The overall purpose of the conference is to provide an opportunity for the nuclear community to reflect on the pivotal role that human and organizational aspects play in assuring safety. In particular, the objectives of the conference will be to:

- Review the experience gained with regard to human and organizational factors (HOF), safety culture and leadership for safety;
- Share and gather experiences related to current developments, approaches, methods and research in the areas of HOF, safety culture and leadership for safety; and
- Identify the future needs for building organizational resilience capabilities in order to further strengthen defence in depth for nuclear facilities and activities.

The special focus of the conference will be on safety culture and the past 30 years of developments in this area.

C. List of Topics

The conference will have a number of technical sessions dealing with specific topical areas. Sessions are expected to include papers by invited speakers as well as contributions by participants. While most papers will focus on one of the principal areas below, authors are encouraged to consider integration with the other areas as appropriate. The conference will cover the following **expert areas**:

- Human and Organizational Factors
- Safety Culture/Culture for Safety
- Leadership and Management for Safety
- The Systemic Approach to Safety (The Interaction between Human, Technical and Organizational Factors)
- Resilience Engineering
- High Reliability Organizations

These areas will be reflected upon in the following **perspectives**:

- Lessons learned from the Three Mile Island, Chernobyl and Fukushima Daiichi accidents
- Lessons learned from other major events in the nuclear industry
- Lessons learned from other high hazard sectors and industries
- Current research and development
- Current approaches and practices
- Future demands and needs to assure safe performance

These perspectives will be specifically explored in the context of the following **applications**:

- New builds (including newcomers or expanding countries)
- Licensees
- Regulatory bodies
- Governmental bodies/ministries/agencies
- Research and development
- Technical support organizations and vendors
- Organizations undergoing major change (generation to decommissioning) or where the organization is dynamic and changing on a frequent basis (decommissioning and environment remediation organizations, growing new build organizations)
- New generation of workforce
- Knowledge capacity building for workforce, middle management, senior managers, board members, governmental ministers

D. Programme Structure

The conference programme will consist of an opening session, technical sessions with invited and contributed papers, poster sessions, reflection and dialogue sessions and a closing panel session.

The format of the conference will be based on HOF knowledge, which will make it possible to maximize the learning potential and exchange of experience. The three core days will be structured into, firstly, a plenum session, followed by three parallel sessions, and then smaller reflection and dialogue sessions. Each day will be summarized by the chairpersons in plenum.

Side events on IAEA activities and services related to the expert areas of the conference will be conducted. This will also include sessions on issues and challenges in these areas.

Invited papers will cover major issues of relevance to the expert areas, perspectives and applications mentioned in Section C. A closing panel session will summarize the principal insights obtained during the conference and address important issues raised by the participants. At the end, summary conclusions and recommendations will be presented. The conference will be documented through an IAEA publication.

E. Synopses, Papers and Proceedings

All papers submitted — other than invited keynote papers — must present original work and should not have been published elsewhere.

E.1 Submission of Synopses

Persons who wish to present a paper at the conference on one of the topics listed under Section C — either orally or in the form of a poster — must submit a synopsis of between **400 and 800 words maximum** (not exceeding two pages, including figures and tables) **in electronic format** (no paper copies) directly to the IAEA.

The synopsis should give enough information on the contents of the proposed paper to enable the Technical Programme Committee to evaluate it. Including too many introductory and general matters should be avoided. The accepted synopses will be reproduced in unedited form and will be distributed to all participants at the conference.

Instructions on how to upload the synopsis to the conference's web browser-based file submission system will be available on the conference web page (see Section O) as of **1 July 2015**.

The synopses **must** be submitted through this system by **30 October 2015**. No other submission route will be accepted.

It is the responsibility of the authors to ensure that the submitted synopses have received any necessary clearance by their relevant governmental authorities.

In addition, authors must submit the following two forms to their appropriate governmental authority (see Section F) for transmission to the IAEA. These forms must be received by the IAEA not later than **30 October 2015**.

- Participation Form (Form A)
- Form for Submission of a Paper (Form B)

IMPORTANT: The electronically received synopses will be considered by the Technical Programme Committee only if these two forms have been received by the IAEA through the established official channels (see Section F).

E.2 Acceptance of Synopses

Given the number of synopses anticipated and the need to provide ample time for discussion, the number of papers that can be accepted for oral presentation is limited. Authors who prefer to present their papers as posters are requested to indicate this preference on Form A.

Authors will be notified by **23 November 2015** as to whether their papers have been accepted for oral or poster presentation.

E.3 Submission of Full Papers

Only authors of papers selected for oral presentation are requested to submit a full paper. Full papers must be submitted through the conference's web browser-based file submission system. Specifications for the layout and electronic format of the full papers will be made available on the conference web page. The deadline for electronic submission of the full papers as both PDF and Word files is **8 January 2016**.

IMPORTANT: The system for electronic submission of papers is the sole mechanism for submission of regular papers. Authors are encouraged to submit papers **as early as possible**. The IAEA reserves the right to exclude papers that do not comply with its quality standards and/or that do not apply to one of the topics outlined in Section C above and/or that do not meet the expectations based on the information given in the extended synopsis.

It is the responsibility of the authors to ensure that the submitted papers have received any necessary clearance by their relevant governmental authorities.

E.4 Conference Proceedings

The proceedings of the conference will be published by the IAEA and made available on its website as soon as possible after the conference.

F. Participation and Registration

The target audience of the conference comprises representatives of nuclear organizations worldwide, including operating organizations, regulatory bodies, governmental institutions, technical support organizations, vendors and other stakeholders.

All persons wishing to participate in the conference are requested to **register online in advance** through the conference web page (see Section O). **In addition**, they are required to send a completed Participation Form (Form A) and, if applicable, the Form for Submission of a Paper (Form B) and the Grant Application Form (Form C) to their competent national authority (e.g. 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 from the IAEA further information approximately three months before the opening of the conference. This information will also be posted on the conference web page.

G. Expenditures and Grants

No registration fee is charged to participants.

The IAEA is generally not in a position to bear the travel and other costs of participants in the conference. The IAEA has, however, limited funds at its disposal to help meet the cost of attendance of certain participants. Such assistance may be offered upon specific request to normally one participant per country provided that, in the IAEA's view, the participant on whose behalf assistance is requested will make an important contribution to the conference.

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 **30 November 2015**.
2. Accompanied by a completed and signed Grant Application Form (Form C); and
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**.

H. Distribution of Documents

A preliminary programme will be posted on the IAEA conference web page (see Section O) in advance of the event. The final programme and the electronic *Compilation of Synopses* will be available free of charge upon registration at the conference.

I. Working Language

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

J. Conference Venue and Accommodation

The conference will be held at the IAEA's Headquarters in Vienna, Austria. Participants must make their own travel and accommodation arrangements. Hotels which are offering a reduced rate for conference participants will be listed on the conference web page (see Section O). Please note that the IAEA is not in a position to assist participants with hotel bookings, nor can the IAEA assume responsibility for paying cancellation fees or for rebooking and no-shows.

K. Exhibitions

A limited amount of space will be available for commercial vendors' displays/exhibits during the conference. Interested parties should contact the Scientific Secretariat by email (SafetyCulture2016@iaea.org) before **30 November 2015**.

L. Visas

Designated participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria at least four weeks before they travel to Austria. Since Austria is a Schengen State, persons requiring a visa will have to apply for a Schengen visa. In States where Austria has no diplomatic mission, visas can be obtained from the consular authority of a Schengen Partner State representing Austria in the country in question.

M. Key Deadlines

Electronic submission of the synopsis (including submission of Forms A and B):	30 October 2015
Submission of grant application (including submission of Forms A and C):	30 November 2015
Notification of acceptance of papers:	23 November 2015
Electronic submission of accepted full papers:	8 January 2016

N. Conference Secretariat

General contact details of the Conference Secretariat:

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IAEA-CN-237

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretariat of the conference 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/iaeameetings/50800/International-Conference-on-Human-and-Organizational-Aspects-of-Assuring-Nuclear-Safety-Exploring-30-Years-of-Safety-Culture>