



# **Training Course on Effective Operating Experience and Continuous Performance Improvement Programmes at Nuclear Power Plants**

**IAEA Headquarters  
Vienna, Austria**

**27 - 31 March 2023**

**Ref. No.: EVT2204526**

## **Information Sheet**

### **Introduction**

The International Atomic Energy Agency (IAEA) is continuing its efforts to disseminate knowledge on how operational safety performance at nuclear installations can be continuously improved. This course will address methods and techniques for the continuous improvement of operational safety performance developed by both the IAEA and experts from Member States. A specific focus will be given to the following core elements of a performance improvement program as identified by the IAEA's PROSPER service: corrective action programmes; use of operating experience; human performance; management, observation and coaching; key performance indicators; self-assessment and benchmarking; integrated project management; and leadership management for performance improvement.

The importance of the continuous improvement of operational safety performance has been recognized since the Three Mile Island accident and has been reflected in Safety Standards (IAEA Specific Safety Requirements No. SSR-2/2 (Rev. 1), Vienna, 2016).

Understanding and use of the concept supports building the capacity to prevent events with adverse consequences on safety.

Attention will be given also to lessons learned from events occurring at nuclear power plants.

Through a series of exercises led by a diverse group of expert facilitators, the course will focus on how continuous improvement of operational safety is achieved in practice. Participants will be supported in finding practical solutions on how to implement this approach in their own organizations. The course is designed to be highly interactive, and experience based.

## **Objectives**

The purpose of the event is to train participants to enhance operational safety in their States through the operating experience feedback programme, task observation and coaching, performance indicators, self-assessment and benchmarking. In addition, the course will provide an international forum for mid-level managers that will enhance their understanding of the continuous improvement of operational safety performance through a real-time experience. This will enable them to share their own practical experiences and to enhance nuclear safety in their organizations by applying relevant methods and techniques in their daily work.

The course will focus on how continuous improvement of operational safety performance is achieved in practice and aims to reinforce mid-level managers' understanding of their role in influencing safety on an ongoing basis. The workshop is intended for mid-level managers of licensees, regulatory bodies, technical support organizations, and other relevant organizations that are responsible for nuclear installations at any stage of development.

The course will be conducted in an interactive manner through real-time experience-based scenarios, reflections, and dialogues. A diverse group of invited experts will facilitate the workshop, providing a series of structured learning and reflection exercises that can be converted by the participants into more effective on-the-job strategies. The expected end result includes new insights, learning, and the exchange of experiences. The number of participants will be limited to 30 in order to ensure effective group dynamics.

The course will provide an opportunity to outline current best practices related to Performance improvement programs and an overview of the PROSPER performance improvement model.

Participants are encouraged to share experiences and current practices related to this topic.

## **Working Language(s)**

English

## **Structure**

The Scientific Secretary will provide participants with working material in advance of the course. This working material will serve as the basis for discussions.

# Topics

The event will address hands-on experience, practical applications, or case studies covering one or more of the following topics:

## **1. Corrective Action Programmes**

The general objective of a corrective action programme is to identify, document, evaluate, and find trends in issues, as well as to develop and implement appropriate actions to correct identified issues. Such a programme should be formal and rigorous, with requirements strictly defined to ensure that important issues are thoroughly resolved (cf. Requirement 13 “Measurement, assessment and improvement of the management system” in *Leadership and Management for Safety* - IAEA Safety Standards Series No. GSR Part 2, Vienna, 2016).

## **2. Operating Experience Programmes**

Operating experience programmes should be designed to ensure the effective and efficient use of lessons learned from internal and external operating experience in order to improve plant safety and reliability through learning, training, and the improvement of procedures (cf. Requirement 24 “Feedback of operating experience” in *Safety of Nuclear Power Plants: Commissioning and Operation* - IAEA Safety Standards Series No. SSR-2/2 (Rev. 1), Vienna, 2016).

## **3. Management Observation and Coaching Programmes**

Observations of daily work activities (both routine and unscheduled) influence safety culture. Managers, supervisors, and individuals should value observations because they generate feedback that sharpens work habits and provides opportunities to detect and prevent problems. By completing observations, managers, supervisors and individuals see what is happening in the plant at first-hand. The quality of individual performance and supervision, the adherence to standards and expectations, the effectiveness of administrative processes, procedures, and training, as well as the strength of the organization’s values and safety culture require continual scrutiny. Observations provide the ability to measure the effectiveness of an organization’s efforts to improve performance (cf. Requirement 9 “Monitoring and review of safety performance” section 4.35 in IAEA Safety Standards Series No. SSR-2/2 [Rev. 1]).

## **4. Human Performance Programmes**

The general objective of a Human Performance Programme (HUP) is to provide personnel of a nuclear power plant with specific soft skills supporting safe and reliable operation. It focuses on reducing human errors and strengthening barriers to prevent consequential events and/or mitigate their impact on the safe and reliable operation should they occur. Experience has revealed that most causes of human performance problems exist in the work environment and organizational and programmatic weaknesses. To ensure successful performance at the job site, appropriate individual and leader behaviours need to occur in concert with appropriate organizational processes and values. The monitoring and assessment of human performance does not have to be performed by a single system, and indeed the elements that make up a human performance programme are often embedded within other performance improvement areas, for example management observations and coaching or corrective action programme. (cf. Requirement 8 “Performance of safety related activities” sections 4.28, 4.29, 4.30 in IAEA Safety Standards Series No. SSR-2/2 [Rev. 1]).

## **5. Self-Assessment and Benchmarking**

Self-assessments are a proactive way of comparing existing performance against established standards in order to determine areas where improvement is needed. The purpose of a self-assessment programme is to

identify obstacles to achieving world-class excellence. During self-assessments, current performance is compared to management expectations, industry excellence, and regulatory requirements to identify strengths, weaknesses, and improvement opportunities (cf. Requirement 9 “Monitoring and review for safety” sections 4.33, 4.34, in IAEA Safety Standards Series No. SSR-2/2 [Rev. 1]).

Organizations should use internal and external benchmarking to identify potential improvements around identified gaps in performance. Benchmarking is conducted to ensure that organizations do not become isolated and that they are able to benefit from the experience and good practices of other successful organizations, both within and outside the nuclear industry. Very few problems are unique to one organization, and other businesses have more than likely addressed and resolved similar problems at their facilities (cf. Section 3.30 in *The Management System for Nuclear Installations* - IAEA Safety Standards Series No. GS-G-3.5, Vienna, 2009]).

## **6. Key Performance Indicators**

A set of measurable and objective indicators relating to safety performance should be defined to establish performance goals and enable senior managers to identify deteriorating performance and take appropriate actions to improve performance. The hierarchy includes higher tiered indicators to measure the overall plant safety and the performance of the operating organization; middle tiered indicators to measure achievement of specific organization’s objectives and performance in key processes; and lower tiered indicators to build a broader understanding of performance at the department or unit level. Performance indicators include both leading and lagging indicators. Improvements in leading indicators show an improvement in lagging indicators (cf. Requirement 9, “Monitoring and review for safety” section 4.34 in IAEA Safety Standards Series No. SSR-2/2 [Rev. 1]).

## **7. Integrated performance monitoring, assessment, and review**

Performance monitoring involves the collective analysis of information obtained from the wide spectrum of performance improvement activities. The organization integrates and monitors at different levels (departments/ plant/ fleet) all the outputs (problems/ issues/ improvement opportunities) that result from various performance improvement tools. As such, through performance monitoring activities, the organization defines performance gaps, creates or adjusts action plans, and develops organizational alignment and understanding. The most visible outcome is an organizational focus on the most important gaps to excellence that, if addressed effectively, will make the most impact on performance. (cf. Requirement 13 “Measurement, assessment and Improvement of management system” sections 6.1, 6.2, 6.4, 6.5, 6.6, in *Leadership and Management for Safety* - IAEA Safety Standards Series No. GSR Part 2, Vienna, 2016).

## **8. Leadership and management for performance improvement**

Leadership expectations for the PI program are clearly defined and are part of the organization’s vision, goals, strategies, plans and objectives. The management system also has to ensure the fostering of a strong safety culture, the regular assessment of safety performance and the application of lessons from experience. The management system also supports the development of proactive and responsive management (cf. Requirement 2 “Management system” section 3.4 and 3.5 in IAEA Safety Standards Series No. SSR-2/2[Rev. 1, IAEA Safety Standards Series No. GSR Part 2, Vienna, 2016]).

## Participation and Registration

All persons wishing to participate in the event have to be designated by an IAEA Member State or should be members of organizations that have been invited to attend.

**In order to be designated by an IAEA Member State, participants are requested to send the Participation Form (Form A) to their competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) for onward transmission to the IAEA by 31 January 2023.**

**Participants who are members of an organization invited to attend are requested to send the Participation Form (Form A) through their organization to the IAEA by above deadline.**

Selected participants will be informed in due course on the procedures to be followed with regard to administrative and financial matters.

Participants are hereby informed that the personal data they submit will be processed in line with the Agency's Personal Data and Privacy Policy and is collected solely for the purpose(s) of reviewing and assessing the application and to complete logistical arrangements where required.

## Papers and Presentation

The IAEA encourages participants to give presentations on the work of their respective institutions that falls under the topics listed above.

Participants who wish to give presentations are requested to submit an abstract of their work. The abstract will be reviewed as part of the selection process for presentations.

The abstract should be in A4 page format, should extend to no more than two pages (including figures and tables) and should not exceed 500 words. It should be sent by email to M. Benoit GABRIEL, the Scientific Secretary of the event (see contact details below), not later than **31 January 2023**. Authors will be notified of the acceptance of their proposed presentations by **27 February 2023**.

In addition, participants have to submit the abstract together with the Participation Form (Form A) to their competent national authority (e.g., Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) or their organization for onward transmission to the IAEA not later than Submission Deadline.

## 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 event. The IAEA has, however, limited funds at its disposal to help meet the cost of attendance of certain participants.

Upon specific request, such assistance may be offered to normally one participant per country, provided that, in the IAEA's view, the participant will make an important contribution to the event.

The application for financial support should be made using the **Grant Application Form (Form C)**

which has to be stamped, signed and submitted by the competent national authority to the IAEA together with the **Participation Form (Form A)** by **31 January 2023**.

## Venue

The event will be held at the Vienna International Centre (VIC) where the IAEA's Headquarters are located. Participants must make their own travel and accommodation arrangements.

General information on the VIC and other practical details, such as a list of hotels offering a reduced rate for IAEA participants, are listed on the following IAEA web page:

<https://www.iaea.org/events>.

Participants are advised to arrive at Checkpoint 1/Gate 1 of the VIC one hour before the start of the event on the first day in order to allow for timely registration. Participants will need to present an official photo identification document in order to be admitted to the VIC premises.

## Visas

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.

## Organization

### Scientific Secretary

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretary and correspondence on other matters related to the event to the Administrative Secretary.