

**NUCLEAR ENERGY AGENCY
COMMITTEE ON RADIOLOGICAL PROTECTION AND PUBLIC HEALTH**

Working Party on Nuclear Emergency Matters

The Sixth International Nuclear Emergency Exercise (INEX-6) General Information

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INEX-6 Exercise on the Long-Term Recover to Nuclear and Radiological Emergencies

This document provides an overview of the INEX-6 exercise on Long-Term Recovery to Nuclear and Radiological Emergencies, organised under the auspices of the OECD Nuclear Energy Agency. It provides basic information on the exercise and is intended to facilitate decisions on national participation in the INEX-6 exercise series by those organisations responsible for national exercise programmes.

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1. Introduction

1.1 Background to INEX-6

Since 1993, the International Nuclear Emergency Exercise (INEX) series, organised by the OECD Nuclear Energy Agency, has proved successful in testing, investigating and facilitating improvements in emergency management systems nationally and internationally. Previous INEX exercises focused largely on national and international aspects of early phase management of emergencies at nuclear power plants and more recently, in INEX3 and INEX4, have touched upon issues associated with consequence management and the transition to recovery. INEX6 will focus solely on the long-term recovery phase, which has not been tested before at the international level. The recovery phase, which corresponds in the long term to an existing exposure situation, begins when the radiation source at the origin of the event is considered to be sufficiently secured and/or the exposure situation is adequately characterised to support long-term decision-making (for off-site accidents only the latter applies).

1.2 INEX-6 Exercise Concept

Long-term recovery is a challenging and costly phase of an emergency, and one that is highly complex to exercise. The considerable number of issues that local, national and international authorities will be faced with makes it extremely difficult to set up an exercise that adequately tests all aspects of recovery. It will also be difficult to replicate reality in terms of condensing the recovery timeline into a single exercise. In reality, policy leads, lawyers, decision makers, regulators, government departments, public authorities, will all have more time to deliberate and decide on the course of action to take. With this in mind, INEX-6 has been developed as a series of modules to reduce the complexity involved and tackle each of the recovery issues as manageable, bitesize exercises. The modular format to INEX-6 is explained further in this document. The design of the exercise will also enable countries to re-use the materials for future exercises, i.e. to repeat with new emergency management staff or roll out to regions. For INEX-6, four modules are being developed to test the recovery topics shown in figure 1 below. Cross-cutting issues, such as stakeholder engagement, communications, and environmental monitoring, have been built into all modules.

Figure 1: INEX-6 Modules



All modules will be based on a single scenario. To ensure participants focus on long-term recovery issues and there is equal participation between nuclear and non-nuclear countries, the scenario will be focused on the consequences, i.e. contamination of the environment, rather than the cause of the emergency. Further to this, the scenario has been selected to target the specific module topics in question. As the exercise will start after the termination of the emergency phase, the response phase actions will be simulated, for example – any decisions around the preceding evacuation or shelter will be simulated and instead the focus in this example would be on the re-housing of residents and the associated MHPSS issues.

Each of the modules are designed as half-day, table-top exercises. Participating countries will be responsible for the organisation, delivery and evaluation of their country's involvement – this will be overseen by a National Planning Committee (NPC). All materials will be provided by the OECD Nuclear Energy Agency (NEA) to countries in order to deliver the exercise, however, countries can opt to amend parts of the information or conduct bolt-on national exercises if they wish. Some information provided cannot be amended to ensure that multi-national comparisons and learning can be drawn.

Participation in the exercise from national, regional and local organisations involved in the exercise will be at the discretion of the National Planning Committee (NPC). It will be necessary to tailor participation for each of the modules to ensure the appropriate decision makers, technical experts and other key stakeholders are present. Discussion among and between players should be open and non-critical. The goal is to establish an enhanced table top exercise environment where issues regarding long-term recovery activities can be identified and discussed freely and openly. Participation in the exercise is covered in later sections of this document.

Following its exercise, each country will complete a standard questionnaire to capture observations, lessons and issues for submission to the NEA. This feedback will form the basis of the follow-up INEX6 International Evaluation Workshop, being organised by NEA for late 2024 – early 2025. The workshop will allow participants to exchange and analyse experience from the national exercises and identify cross-cutting issues or gaps impacting multiple states. An important outcome will be the identification of good practices as well as key needs for future work that would benefit from international co-operation.

1.3 INEX-6 Objectives

The aim of INEX6 is:

- (i) To exercise national and international arrangements for the recovery phase of a nuclear or radiological emergency and to identify improvements to enhance national and international preparedness for recovery, and (ii) to exchange experience with other countries that have conducted and evaluated an INEX-6 exercise

To meet this aim, the following common objectives have been set:

- Test preparedness for recovery, including organisational structures, roles and responsibilities, stakeholder engagement, as well as mechanisms for multi-national cooperation to assess the adequacy of current arrangements and identify potential gaps against the [NEA's Framework for Recovery Preparedness](#);
- Test the decision-making process for the implementation of longer-term protective actions, including the justification and optimisation of such actions considering both radiological and non-radiological issues;
- Test the adoption of an all-hazards approach to recovery management, utilising skills, knowledge and capabilities from outside of the nuclear field.

Each of the INEX6 modules also have detailed objectives in support of the overarching common objectives above.

1.4 INEX-6 Scope

It is recognised internationally that while countries have robust exercise programmes addressing response and transition phases of radiological and nuclear emergencies, plans and exercises for the longer-term recovery are not as well established. INEX-6 therefore provides an opportunity for participating countries to test arrangements for the recovery phase and to work alongside other countries to draw international best practice and areas for improvement. A series of guiding statements have been agreed to set out the scope of the exercises. These are as follows:

The Sixth International Nuclear Emergency Exercise (INEX6) will:

- be delivered individually by participating countries as Table-Top Exercises using the same exercise scenario in order to draw comparisons between countries
- involve a series of 'modules' focussing on key topical issues associated with long-term recovery management
- be a "question-driven" exercise where players are challenged to use existing policies, protocols, and emergency preparedness plans/procedures to explain what longer-term protective actions will be taken
- be prepared as a package that enables countries to re-use the exercise materials after completion of INEX-6, including a methodology that allows for additional long-term recovery modules to be added at a later stage following the same format
- involve a scenario that begins after termination of a radiological or nuclear emergency, i.e. an existing exposure situation
- be open for all countries to participate regardless of their current level of preparedness for recovery
- maintain a direct link with the NEA publication 'Building a Framework for Post-Nuclear Accident Recovery Preparedness' to test implementation of the guidance
- build on experience from previous INEX exercises

- facilitate the examination of similarities and differences in recovery management strategies, including where possible on transboundary issues between neighbouring countries

The Sixth International Nuclear Emergency Exercise (INEX6) will not:

- test all elements associated with long-term recovery
- be built upon a very technically detailed accident scenario description, but rather on a more narrative or semi-quantitative one

A single common set of questions for each module has been developed to allow all participants to directly compare their approaches for managing the response to such events. To facilitate overall evaluation and experience exchange, all participating countries are required to adopt the common objectives and scenario questions. While countries may conduct bolt-on exercises to test specific elements of their arrangements, it is recommended that all participating countries focus their planning primarily on the core objectives and scenario questions provided by the NEA.

INEX-6 is a “no fault” exercise. Neither participating countries nor individuals will have their performance or outcomes assessed. Evaluation will focus on emergency management arrangements and approaches for longer-term recovery management in relation to the exercise scenario, including plans, procedures, organisational structures, information exchange, decision making processes, resources, international interfaces and supporting systems. Each country will perform its own exercise evaluation with the intent to share its experience internationally. To facilitate overall evaluation and experience exchange, a standard evaluation questionnaire will be prepared based on the common scenario and objectives, for completion and submission to NEA. Each country may also undertake any other internal evaluation that it feels appropriate, without requirement to share this information.

1.5 Who Should Participate in INEX-6

INEX-6 is open to all interested countries, both NEA member and non-member countries, and relevant international organisations. As an international exercise series, the key constituencies for INEX-6 participation include emergency planners, responders (i.e. relative to the recovery phase), and technical decision-makers from national authorities¹. The participation of relevant governmental and non-governmental stakeholders in the national exercises, consistent with the exercise objectives, is both encouraged and supported by the INEX-6 scenario. **The extent of participation within a country will be the choice and responsibility of each country overseen by the respective National Planning Committee (NPC).** It is expected that participation will differ between countries due to varied level of preparedness for recovery. Participation will also vary between modules, for example, technical experts, regulators and policy makers for the radioactive waste management module will be different to those required for the health impacts module. The half-day modules should involve a minimum of 10 participants per module representing organisations that would be involved in the recovery effort related to the module topic. NPCs should organise a venue for each module equipped with meeting space and projector.

The number of modules a country decides to run is not restricted. Where possible, participation in all four modules is strongly encouraged to ensure countries get most benefit from this unique opportunity to exercise long-term recovery and maximise multi-national comparisons and learning. It is recognised that a country may have a specific need to test part of their recovery arrangements, such as remediation and decontamination, and participation in INEX-6 in a reduced capacity will be equally supported by the OECD Nuclear Energy Agency. The INEX-6 Secretariat should be informed in writing of a countries intention to play all or some of the INEX-6 modules (contact details for the Secretariat can be found in section 3).

¹ and local authorities where relevant for recovery

INEX-6 Modules:

1. Health Impacts, including Mental Health and Psychosocial Support (MHPSS)
2. Food Safety
3. Remediation and Decontamination
4. (Radioactive) Waste Management

1.6 What Assistance Can National Exercise Organisers Expect?

Each country participating within the INEX-6 framework will be responsible for the organisation, conduct and evaluation of its own exercise. A set of generic technical materials will be provided by the NEA to support INEX-6 National Planning Committees (NPCs), including generic guidance, set of slides to be delivered during the exercise containing the scenario and questions, and exercise evaluation tools. Each participating country should base their national exercise on these materials, which NPCs can adapt to national conditions as necessary. Briefings will be provided to NPC representatives by the NEA throughout the exercise planning process to ensure that approaches are aligned.

2. Exercise Preparation**2.1 Proposed Timeline for Planning and Conduct**

To facilitate INEX-6 planning, conduct and evaluation, and organisation of the post-exercise evaluation workshop, it is proposed that all individual modules be held within a period of 3 months between January 2024 – March 2024. Individual exercises/modules should be organised at a time that is most convenient to each country. Exercise technical materials will be provided to National Planning Committees in ~September 2023 to provide sufficient time for any national adaptations required. The evaluation questionnaires provided as part of the set of exercise documents will serve as the basis for the INEX-6 evaluation workshop. These should be completed and submitted within 6 weeks following the completion of each module, or end of May 2024 at the latest.

A general timetable for INEX-6 planning and conduct is provided below:

Table 1: Proposed time line

Time	Action
January 2023	Invitation to Countries and International Organisations to Participate in INEX-6
31 March 2023	Deadline to notify the OECD Nuclear Energy Agency of intention to participate
18-20 April 2023	OECD Nuclear Energy Agency internal workshop to finalise exercise materials
June 2023 – Date TBC	Briefing for National Planning Committees + Q&A
September 2023	Issue exercise technical materials to National Planning Committees
January 2024 – March 2024	Official time window for INEX-6 conduct

End of May 2024	Completed INEX-6 Module Evaluation Questionnaires sent to OECD Nuclear Energy Agency
Autumn 2024	INEX-6 Evaluation workshop
Spring 2025	Publication of INEX-6 Evaluation/Summary report

2.2 INEX-6 National Level Planning

Participating countries will need to assign the following roles as part of the planning for INEX-6:

Role	Description
National Exercise Organiser (NEO)	The individual (or organisation) who “owns” the exercise and has overall responsibility for ensuring efficient exercise delivery and that all participating organisations are involved from the beginning of the exercise development process. The NEO will act as the main point of contact with OECD Nuclear Energy Agency
National Planning Committee (NPC)	The collective group of representatives from responsible organisations, chaired by the National Exercise Organiser, with the overall responsibility for delivering the national table-top exercises/modules.
Exercise Players	Participants in the exercise that are required to respond to the exercise scenario in accordance with existing policies, protocols, and emergency preparedness and recovery plans/procedures.
Exercise Moderator	The individual(s) with responsibility for maintaining the efficient conduct of a national INEX-6 exercise. The Exercise Moderator is responsible for ensuring that the exercise play and discussions progress smoothly according to the exercise framework, and that Exercise Players are provided with all necessary technical materials and driving inputs according to the exercise timeline.
Exercise Evaluator/Recorder	The individual(s) with the responsibility for ensuring that exercise activities in support of exercise objectives are effectively recorded to support the completion of the INEX6 Exercise Evaluation Questionnaire and any other exercise reporting.
Exercise Observer	Individuals invited to observe the exercise with no responsibility to contribute to exercise play or the organisation (neighbouring countries may be invited to observe modules)

The NEA will provide National Exercise Organisers/National Planning Committees with the set of generic INEX-6 Technical Materials. These materials provide a common basis for the national INEX-6 exercises as well as the necessary information to enable exercise organisers to develop their specific exercise arrangements. Each participating country will be responsible for the planning and organisation to support the conduct of its national INEX-6 exercise, including as appropriate, the development of specific exercise

plans, determination of scope of participation and invitation to players, pre-exercising training, exercise conduct and evaluation.

3. Exercise Participation

INEX-6 is open to all countries (both NEA member and non-member countries) as well as interested international organisations. In order to receive the INEX-6 Technical Materials and facilitate overall planning, countries intending to conduct an INEX-6 exercise should notify the NEA Secretariat, below, of their intention to participate and provide appropriate contact information for their National Exercise Organiser. International Organisations should also confirm in writing to the Secretariat of their intention to be involved in INEX-6.

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