

CRPPH-WORKING PARTY ON NUCLEAR EMERGENCY MATTERS (WPNEM)

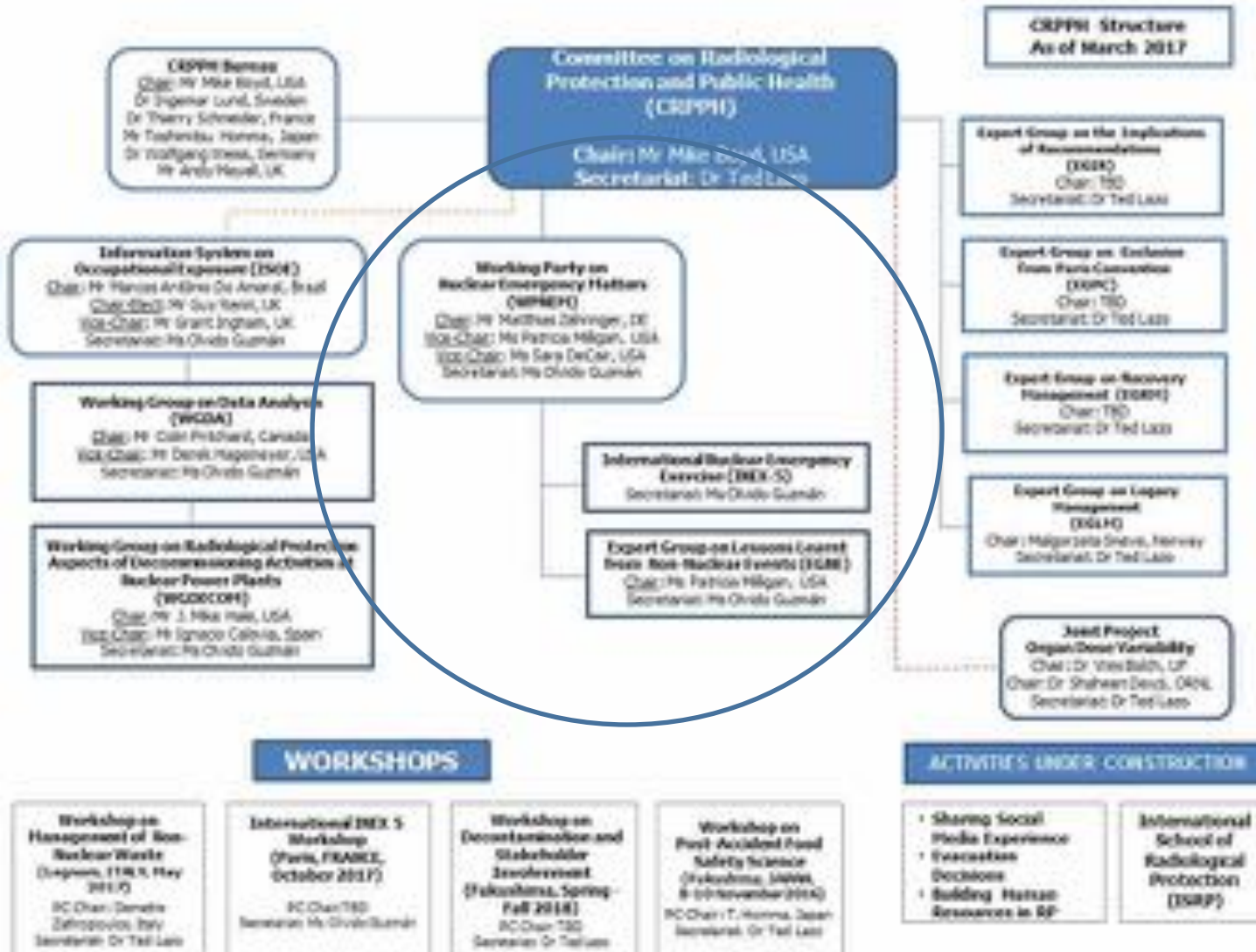
Ciara McMahon (Former WPNEM Co-Chair)
On behalf of the CRPPH-Working Party on Nuclear Emergency Matters

OECD Nuclear Energy Agency (NEA)

17th EAN Workshop: ALARA in Emergency Exposure Situations

NEA Committee on Radiological Protection and Public Health

CRPPH



WPNEM

- Established by CRPPH in **1993**
- **CRPPH's vehicle** to address emergency matters
- **Mission:** To improve nuclear emergency management systems within NEA member countries, and to share its knowledge and experience widely.
- **Avoid duplicating** activities of other international fora
- Seek **international collaboration** on specific emergency matters of interest to the NEA member countries
- **Report to the CRPPH** on progress and activities as requested, and at least on an annual basis

WPNEM

- **Scope:** All aspects of, preparedness and response for, the “early” and “intermediate” phases of a nuclear/ radiological emergency (including consequence management of malicious acts), with a view to prepare appropriate recovery actions

Preparedness	Response				Recovery
	Early		Intermediate		Late
Planning stage	Event/ response initiation	Crisis management	Consequence management	Transition to recovery (including recovery planning)	Recovery/long-term rehabilitation
	Emergency exposure situation				Existing exposure situation



- Foster an integrated **all-hazards approach** to EPR through co-ordination with relevant OECD bodies

WPNEM

Main Fields of Activity

INEX Exercise Series (incl. post-exercise evaluations/follow-up)

Input to development of international standards and recommendations

Framework for validation of relevant products

Identify and investigate as appropriate further advancements in all aspects of EPR



Examples of recent activities

INEX 5 Exercise

ON-GOING

Expert Group on Lessons Learnt from Non-Nuclear Events (EGNE)

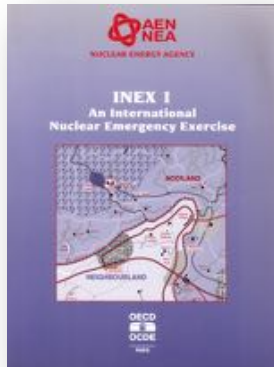
Update on Short-term Countermeasures in Case of a Nuclear or Radiological Emergency

Benchmarking of Fast-Running Software Tools to Model Releases During Nuclear Accidents

Expert Group on International Recommendations for Emergency Exposure Situations (EGIRES)



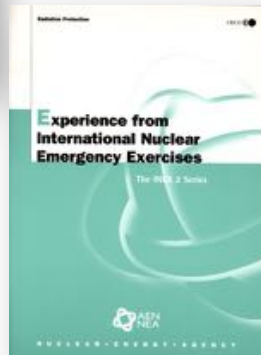
INEX Exercises



INEX 1 (1993)

Early phase table-top exercise at a fictitious country and NPP

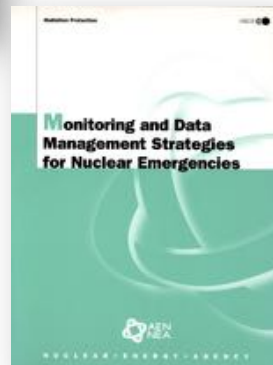
Goal: improve trans-boundary communications and coordination



INEX 2 (1996-1999)

Four early phase command-post exercises built on national exercises at real NPPs with simultaneous play of Accident “Host” Country; Near/Far-field Countries; International organisations

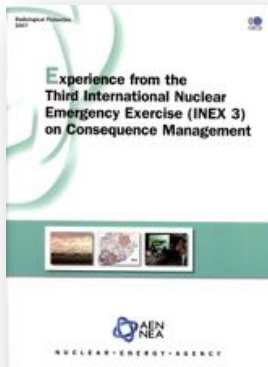
Goal: test real response arrangements; public/media aspects



INEX 2000 (1999-2001)

INEX 2-type exercise to test new data strategies; international coordination; aspects of Conventions on Third Party Liability. Included objectives from EC, IAEA, NEA, WHO and WMO

Key findings: Valuable for proving state of readiness but many lessons remain to be implemented; investigate later phase issues.



INEX 3 (2005-2006)

Response to international interest in longer-term issues

- Table-top consequence management exercise focusing on decision-making in the medium-longer term after an event causing serious contamination
- Flexible and scalable to meet national needs
- Each country played as an “accident” state

Key findings:

- Better guidance for a broad range of countermeasures, recovery needed
- Cross-cutting issues such as long-term social, economic and technical aspects in decision-framing

INEX 4 (2010-2013)

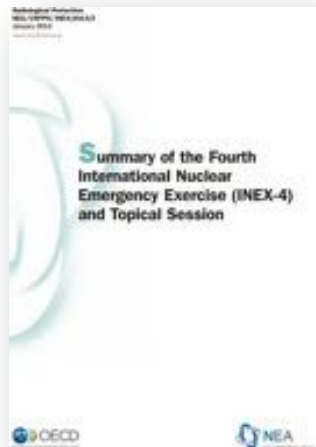
Consequence Management and transition to recovery

Concept:

- a series of issues-driven national table top exercises addressing issues in consequence management and the transition to recovery arising from a **radiological dispersion device in an urban area**
- Identify good practice and facilitate improvement of national and international arrangements;

Key findings:

- Participation at all levels (high level decision makers) with opportunity to experience and response to real situations
- Plans to be updated in response to gaps identified



INEX Exercise Follow-Up

Review and assessment of country questionnaires

Post-exercise workshop to share experience/findings

Report on main findings/themes

Identify issues where WPNEM could add value

Expert groups to develop guidance

Reports published

Radiation Protection

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Monitoring and Data Management Strategies for Nuclear Emergencies



NUCLEAR ENERGY AGENCY

Strategic Aspects of Nuclear and Radiological Emergency Management

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Strategic Aspects of Nuclear and Radiological Emergency Management

Planning for Effective Decision Making
Consequence Management and Transition to Recovery

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NUCLEAR ENERGY AGENCY
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

INEX 5 Context & Concept

Context

Since Fukushima accident , recognise difficulties of **notification, communication, and identifying and obtaining resources** during catastrophic events

Need for established protocols, policies, and procedures among and between country entities is critical for minimizing negative impacts



Benefits to design an exercise these aspects

Concept

Table-top exercise addressing EM aspects of **Notification, Communication & Interfaces (NC&Is)** related to Catastrophic Events involving Radiation or Radiological Materials

- **NOT** a real-time exercise,
- **NOT** intended nor designed to test any international conventions

Goal

Provide basis for enhancing national and international emergency management arrangements related to notification, communication and interfaces & obtaining resources through the exchange of exercise outcomes and experiences from participating countries, in order to identify good practices and common issues to be addressed

INEX 5.- Scenario

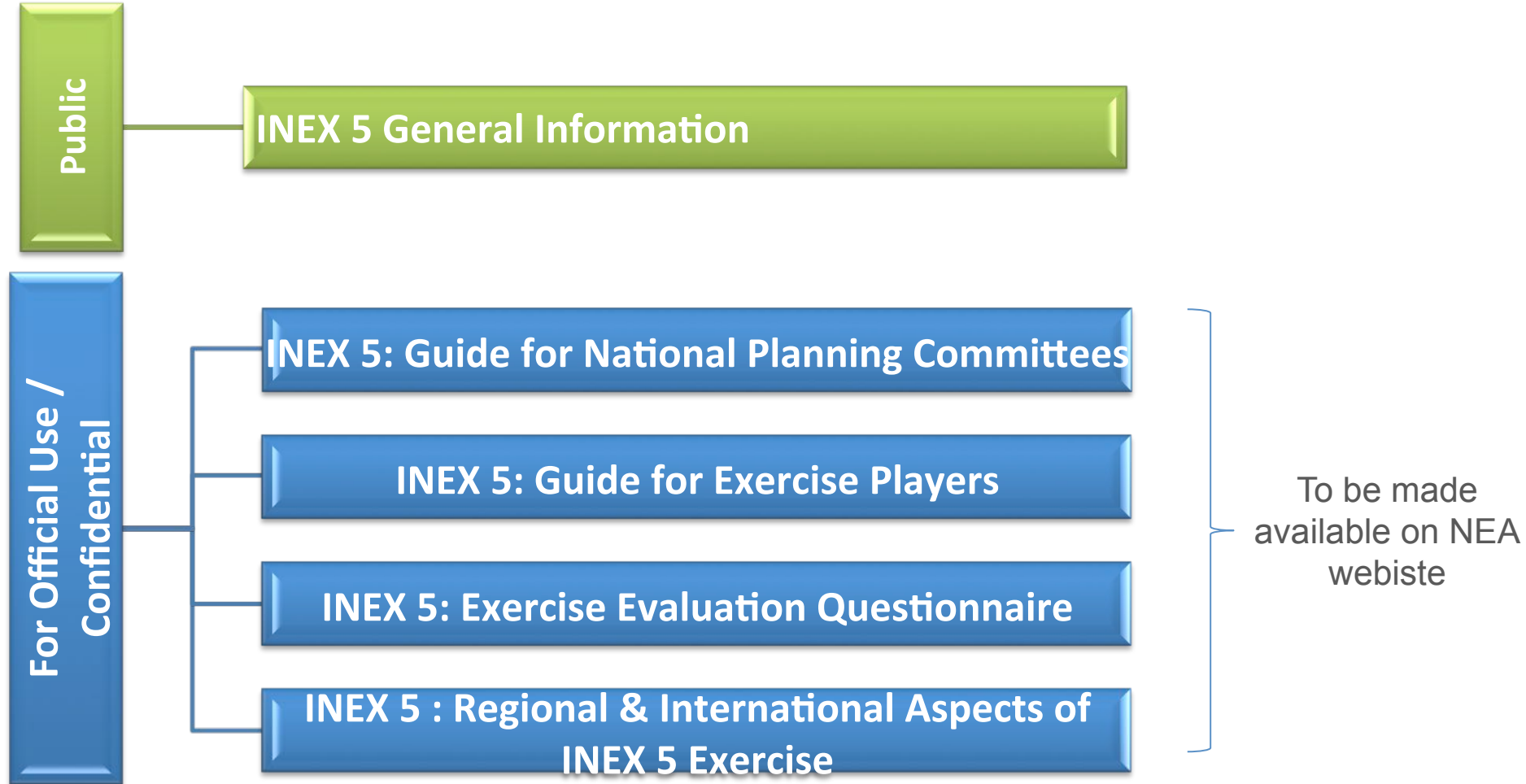
Single generic scenario based on a potential radiological event that escalates to an actual radiological event that is further impacted by natural disaster requiring/involving international interfaces.

FOCUS

- ✓ Decision making in uncertain circumstances
- ✓ Early availability and sharing of information
- ✓ Accident assessment considerations based on limited, uncertain information
- ✓ How to improve emergency communications
- ✓ How to address incoming trade
- ✓ ...

- Based on a **large scale NPP event, exacerbated by a natural disaster and radiological release of significant levels to affect trans-boundary locations.**
- State/National emergency response organizations make **decisions and initiate actions based on minimal or non-existent technical data.**
- Neighbouring countries, IAEA, WHO & WMO request information (countries without NPPs, to consider participating with neighboring countries w/ NPPs for receiving & requesting information)

Official Set of Documents



INEX 5 – Alternatives for playing



Ultimate goal: identify EP/R enhancements/improvements

INEX 5 Participation

22 Countries participating

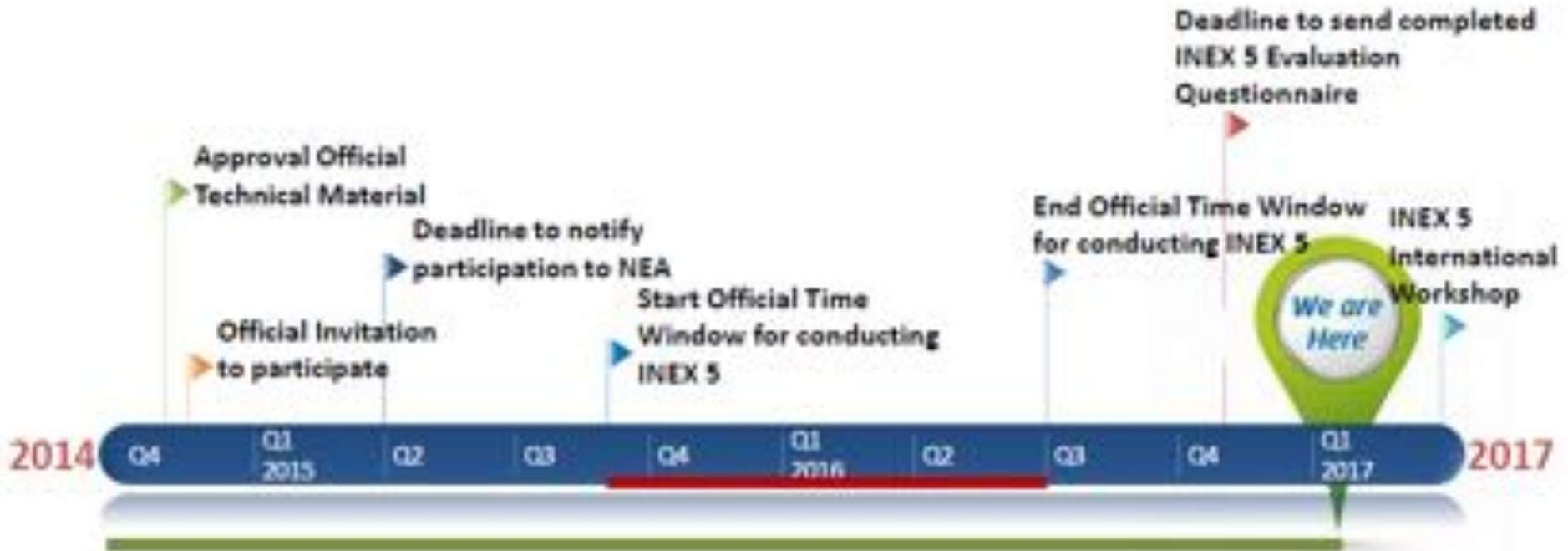
PARTICIPATING COUNTRIES	
AUSTRIA	NETHERLANDS
BELGIUM	NORWAY
CZECH REP.	POLAND
FRANCE	PORTUGAL
GERMANY	RUSSIAN FED.
HUNGARY	SLOVAK REP.
IRELAND	SLOVENIA
ITALY	SPAIN
JAPAN	SWEDEN
KOREA	UNITED STATES
CROATIA	CHINESE TAIPEI



3 Groups playing regionally
All in Europe

- Germany, Netherlands
- France, Germany
- Slovenia, Italy, Austria, Croatia, Hungary

INEX 5 - Timeline



INEX 5 Evaluation Workshop

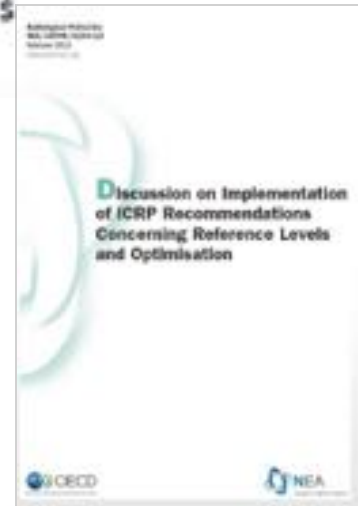
- ◆ Observations, lessons and issues captured in the INEX 5 Evaluation questionnaire used to form basis of the follow-up INEX 5 International Evaluation Workshop.
- ◆ The workshop will allow participants to exchange and **analyze experience from the national exercises and identify cross-cutting issues 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.**



Duration: 2 days
Where : OECD/NEA HQ

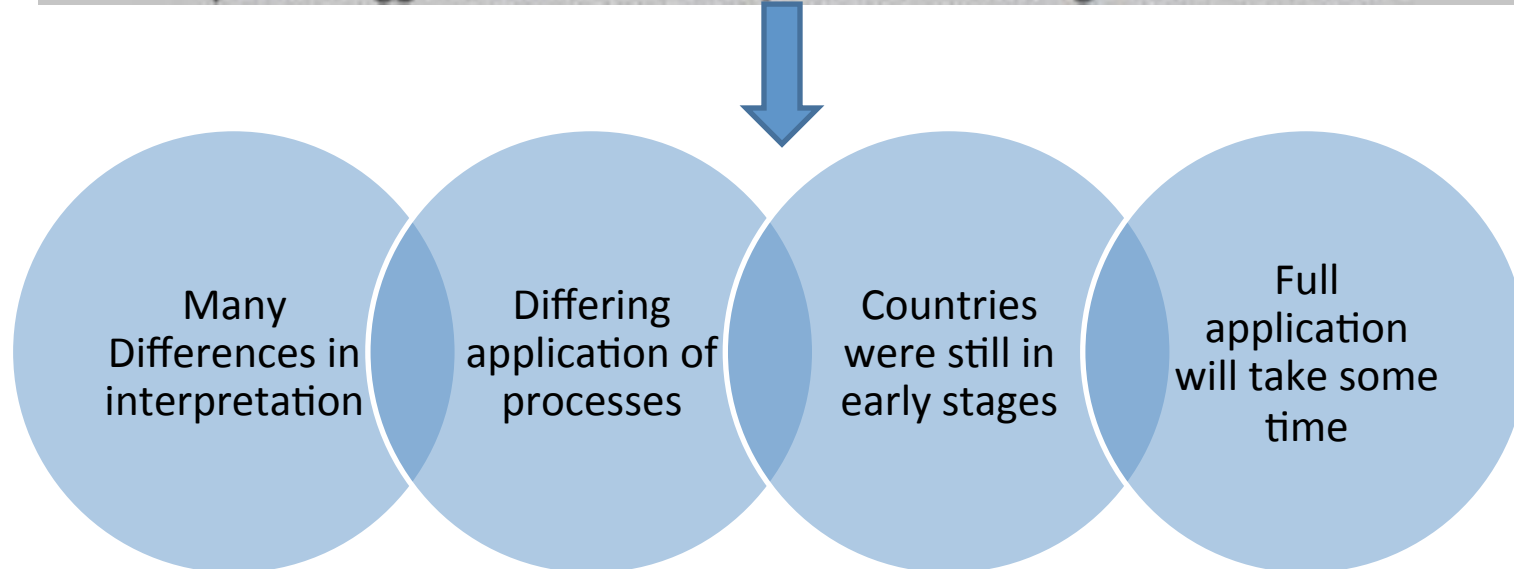
EGIRES - Expert Group Report

- **Expert Group on International Recommendations for Emergency Exposure Situations (EGIRES)**
 - Mandate: to investigate issues in, and approaches to, the implementation of the new ICRP recommendations and revised BSS for emergency exposure situations, specifically nuclear/radiological emergencies including accidents and consequence management for malicious acts.
- Report focuses on the new ICRP approach to
 - optimising protection strategies,
 - establishing reference levels, and
 - including stakeholder input in these processes.
- A survey was conducted
 - to analyse the established processes for optimisation of the protection strategy for emergency exposure situations
 - for practical implementation of the reference level concept in several member states of the NEA



EGIRES - Expert Group Report

- Information collected on
 - several national optimisation strategy definitions,
 - optimisation of protection for different protective actions,
 - optimisation of urgent protective actions,
 - national criteria for setting reference levels, their use, and relevant processes,
 - specific triggers and dosimetric quantities in setting reference levels.

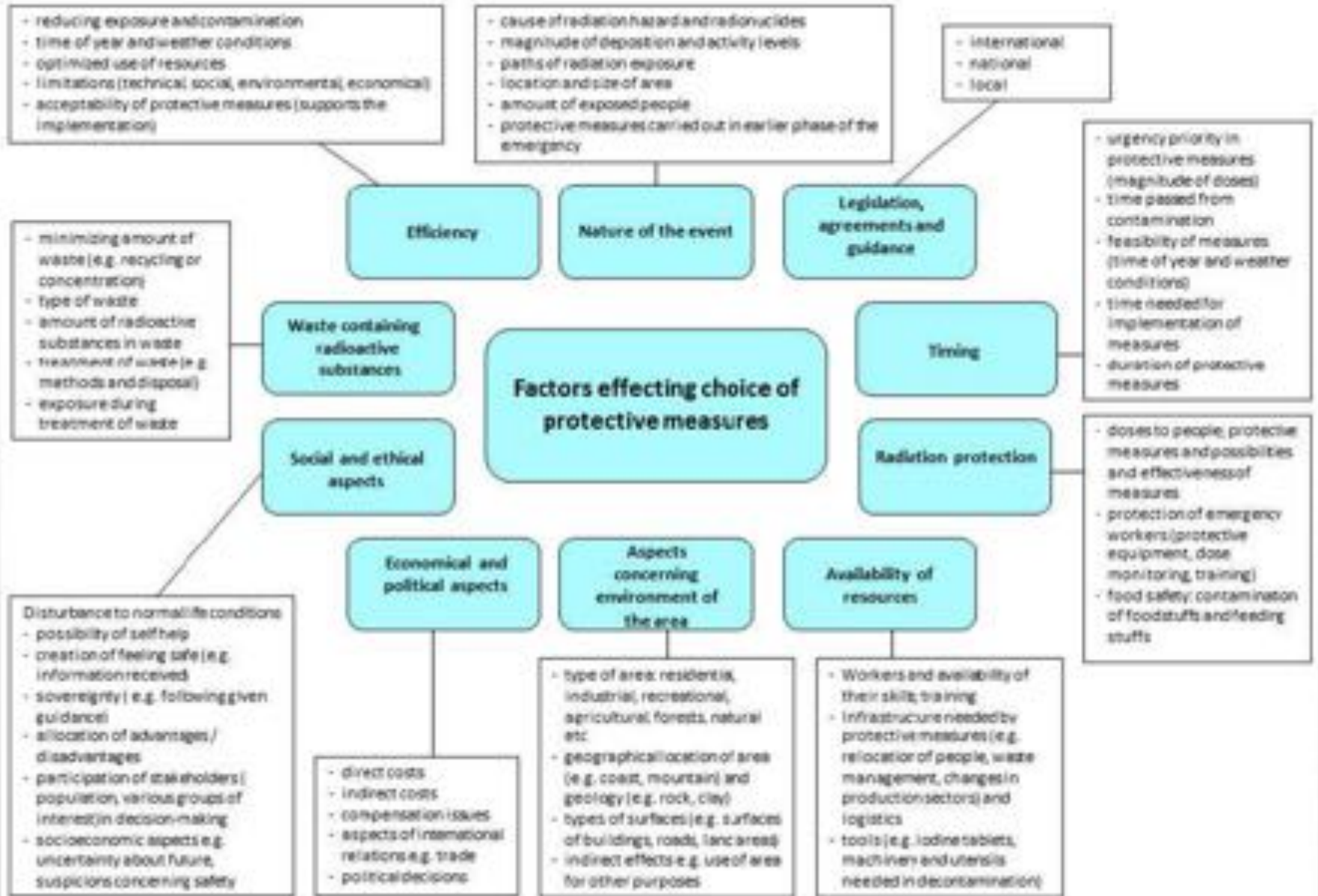


Reference levels

- Starting point for the optimisation of protection
- At the planning stage,
 - a protection strategy that would not reduce residual doses below the reference levels should not be considered appropriate.
- During the response (such as after the implementation of urgent protective actions),
 - the residual dose distribution has to be assessed and compared to the predetermined reference level to determine the effectiveness of the protection strategies.
- The EGIREs survey reveals that national protection strategies use established reference levels.
 - These reference levels varied widely among respondents from using typical annual and lifetime doses because of natural radiation to embracing the range of 20 to 100 mSv (urgent actions) or 1 to 20 mSv (longer term) as stated in ICRP Publication 103.

Optimization

- Optimisation is a common concept of many risk management programmes that address radionuclides and chemicals, although it is not always referred to as such.
- Optimisation analyses are quantitative and qualitative assessments applied at each stage of preparedness and response.
- The evaluation of these alternatives should take into account different type of factors. (Report includes a list and examples)
- The EGRES survey reveals that countries had established a process for optimising the protection strategy for emergency and existing exposure situations.
- (interpretation of the definition of optimisation), a wide range of responses suggest that there are marked differences in how countries understand optimisation as part of the protection strategy.



Stakeholder Involvement

- Decision making is the primary responsibility of decision makers and not stakeholders, the effective management of complex situations that an emergency creates requires the involvement of a broad range of stakeholders.
- Stakeholders are individuals or groups of people who have an interest in the outcome of an action, decision, strategy, or policy.
- Because stakeholders differ in the ways they are affected, the times at which they are affected, and the magnitude of the impacts, they can be divided into categories.
- It is important, therefore, not only to engage stakeholders but to address the concerns of each stakeholder group in developing both pre- and post-emergency plans.

Expert Group on lessons Learnt from non-nuclear accidents (EGNE)

■ Background & Overview

Survey “Information gathering guidelines for protective actions evacuation and sheltering study”

Chinese Taipei	Poland (completed by firemen)
<ul style="list-style-type: none"> 2014 Kaohsiung Gas Explosions 2009 Typhoon Morakot 	<ul style="list-style-type: none"> 2010 Floods in Poland, 2012 Railroad crash

- Fruitful collaboration with OECD/WGCA and JRC enlarged to other OECD bodies and experts led to EGNE report based on expert contribution from :
 - ✓ International organisations (OECD, JRC)
 - ✓ OECD bodies (ENV, GOV, NEA)
 - ✓ NEA member's countries
 - ✓ Experts: Havenaar, Bromet, Calvi-Parisetti, Guido



Directorate for Public Governance and Territorial Development

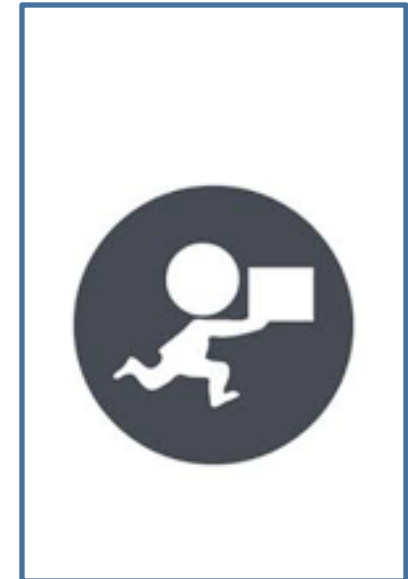


Chemical accident prevention, preparedness & response



EGNE Report outline

	Title	Org.
	Introduction	NEA
	Acknowledgments	NEA
	Executive Summary	NEA
1	OECD activities on chemical accident prevention, preparedness, and response	OECD/WGCA
2	Lessons learned from major accidents relating to emergency response (eMARS database)	JRC
3	Lessons Learnt from crisis : preparing for the future	OECD/GOV
4	Emergency planning and response for Natech accidents (Natural hazards triggering technological accidents)	JRC
5	Public health lessons learnt from other disasters involving exposure to toxic substances	NEA
6	Lessons Learnt from humanitarian crisis	Expert
7	US NRC Assessment of Emergency Response Planning and Implementation for Large Scale Evacuations	USA
8	Integrating lessons learnt from nuclear and non-nuclear disasters in national emergency plans: Japan's experience	NEA
	Conclusions	NEA



Thank you for your attention!!!!

All NEA publications available at
www.oecd-nea.org