

# Civil society investigation of nuclear EP&R provisions in Europe

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# Introduction - 1

Chernobyl accident – „wake up call“:

- major differences in the responses of European countries to the Chernobyl accident in April 1986,
- international discussions were initiated with the object of strengthening international cooperation in the development and use of nuclear energy.

Results:

- IAEA Member States (and the IAEA) undertook an obligation, in the event of an accident in their own country, **to notify any other states** for which there was a danger of harmful radiological effects as quickly as possible;
- the Member States and the IAEA also agreed on an undertaking **to provide assistance** in case of nuclear accident or radiological emergency.

Two conventions were drawn up in a very short of time (by at the end of September 1986):

- Convention on Early Notification of a Nuclear Accident,
- Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency.



## Introduction - 2

The Fukushima accident in March 2011 has intensified European concerns about EP&R:

- The EC (European Commission) & ENSREG (European Nuclear Safety Regulators Group) initiated the process of **stress tests at NPPs** – however it focused on safety and **did not include off-site EP&R**, 2011,
- HERCA formed a **working group on “Emergencies”** in June 2011,
- DG ENER commissioned a “**Review of current off-site** nuclear emergency preparedness and response arrangements in EU member States and neighbouring countries” (ENCO study) in 2013,
- **BSS directive** adopted in end of 2013, also with Articles related to EP&R,
- WENRA (Western European Nuclear Regulators Association) and HERCA (Heads of the European Radiological protection Competent Authorities) adopted **ATHLET approach, end of 2014**,
- IAEA prepared **Report on the Fukushima Daiichi Accident** in 2015: aims to provide an understanding of what happened, and why, so that the necessary lessons learned can be acted upon by governments, regulators and nuclear power plant operators throughout the world,
- Civil society association **NTW published its report on the views from civil society on EP&R in Europe** in 2015.



## EP&R objective are set

Key objectives of off-site EP&R are:

- to **prevent injuries and deaths** by implementing urgent protective actions for the workers and the public;
- **to keep the doses to workers and the public below accepted levels** for which protective actions and other actions are justified to reduce the risk of health effects to the extent practicable;
- to **prevent or reduce psychological, economic and societal effects** in the population by promptly:
  - addressing the concerns of the public,
  - ensuring that all traded goods meet international standards.
- to enable, to the extent practicable, the **resumption of social and economic activity** after the accident.

These key objectives are included in EU regulations!



# EU development

- European study was performed identifying issues to be treated for improvement of emergency preparedness (beyond mutual assistance) at the European level.
- HERCA and WENRA have jointly developed improved guidance on mutual assistance between regulators, and recommendation on consistent approach with regard to the management of nuclear and radiological emergency situations – AtHLET approach.
- Civil society organisation NTW has published an overview of the EU provisions regarding EU provisions on EP&R from the civil society views.
- Other non governmental organisations in EU published reports on EP&R: Superior Health Council in Belgium and ACRO (covering Belgium and France).



## Current overview on development in EU - Study

- Review of current off-site nuclear emergency preparedness and response arrangements in EU member states and neighbouring countries- by consortium ENCO (Austria) and UJV (Czech R).
- Objective:
  - **Assess the status of the existing arrangements and capabilities for off-site EP&R** within and between the EU Member States (MS) and neighboring countries in respect of their coherence and completeness;
  - Identify **best practice, gaps and inconsistencies**, in particular related with cross border arrangements;
  - Assess **how current arrangements and capabilities could be made more effective** (in particular optimized to make better use of available resources and avoid duplication, both nationally and across borders); and
  - Make **recommendations on potential areas** for improvement.
- Study in 28 EU countries, plus Norway, Russian federation, Switzerland, Ukraine, Armenia.
- Focus on NPP provisions.



# Results of self assessments – NPP countries

Table 6-1: Benchmarking for countries with NPP<sup>6</sup>

	BE	BG	CZ	FI	FR	DE	HU	NL	RO	SK	SI	ES	SE	UK	AM	CH
<b>Requirement (IAEA GS-R-2)</b>																
<b>General requirements</b>																
1. Basic responsibilities																
<b>Functional requirements</b>																
2. Establishing emergency management and operations																
3. Identifying, notifying and activating																
4. Taking urgent protective action																
5. Providing information and issuing instructions and warnings to the public																
6. Protecting emergency workers																
7. Assessing the initial phase																
8. Managing the medical response																
9. Keeping the public informed																
10. Taking agricultural countermeasures, countermeasures against ingestion and longer term protective actions																
11. Mitigating the non-radiological consequences of the emergency and the response																
12. Conducting recovery operations																
<b>Requirements for infrastructure</b>																
13. Authority																
14. Organization																
15. Coordination of emergency response																
16. Plans and procedures																
17. Logistical support and facilities																
18. Training drills and exercises [Questions 7.1, 7.2]																
19. Quality assurance programme [Questions 6.3, 7.1, 7.2, section 11]																
<b>EU Requirements (Basic Safety Standards Directive, Public Information Directive, Regulations on food intervention levels)</b>																
<b>BSS Directive (96/29/Euratom)</b>																
Article 50. Intervention preparation																
Article 51. Implementation of intervention																
Article 52. Emergency occupational exposure																
Article 53. Intervention in cases of lasting exposure																
<b>Public Information Directive (89/618/Euratom)</b>																
Article 5. Prior information																
Article 6. Information in the event of an emergency																
Article 7. Information of persons who might be involved in the organization of emergency assistance																
Article 8. Information procedures																
<b>Regulation laying down maximum permitted levels of radioactive contamination of foodstuffs (Council Regulations 3954/87 and 2218/89 and Commission Regulation 944/89)</b>																



# Results of self assessments – countries without NPPs

Table 6-2: Benchmarking for countries without NPP<sup>1</sup>

	AT	HR	CY	DK	EE	GR	IE	IT	LV	LT	LU	MT	PL	PT	NO
<b>Requirement (IAEA GS-R-2)</b>															
General requirements															
1. Basic responsibilities															
<b>Functional requirements</b>															
2. Establishing emergency management and operations															
3. Identifying, notifying and activating															
4. Taking urgent protective action															
5. Providing information and issuing instructions and warnings to the public															
6. Protecting emergency workers															
7. Assessing the initial phase															
8. Managing the medical response															
9. Keeping the public informed															
10. Taking agricultural countermeasures, countermeasures against ingestion and longer term protective actions															
11. Mitigating the non-radiological consequences of the emergency and the response															
12. Conducting recovery operations															
<b>Requirements for infrastructure</b>															
13. Authority															
14. Organization															
15. Coordination of emergency response															
16. Plans and procedures															
17. Logistical support and facilities															
18. Training drills and exercises [Questions 7.1, 7.2]															
19. Quality assurance programme [Questions 6.3, 7.1, 7.2, section 11]															
<b>EU Requirements (Basic Safety Standards Directive, Public Information Directive, Regulations on food intervention levels)</b>															
<b>BSS Directive (96/29/Euratom)</b>															
Article 50. Intervention preparation															
Article 51. Implementation of intervention															
Article 52. Emergency occupational exposure															
Article 53. Intervention in cases of lasting exposure															
<b>Public Information Directive (89/618/Euratom)</b>															
Article 5. Prior information															
Article 6. Information in the event of an emergency															
Article 7. Information of persons who might be involved in the organization of emergency assistance															
Article 8. Information procedures															
<b>Regulation laying down maximum permitted levels of radioactive contamination of foodstuffs (Council Regulations 3954/87 and 2218/89 and Commission Regulation 944/89)</b>															

## Main findings

- The study findings show that current arrangements and capabilities for off- site nuclear **EP&R appear, on paper, to be broadly compliant** with current EU legislative requirements and international guidance.

### However – the gaps are:

- Provide greater assurance to the EU public
- Longer term protective measures to be developed
- Harmonisation of criteria across the countries
- Cross - border arrangements
- Effective use of resources and cost savings
- Mainstreaming nuclear emergency preparedness into civil protection mechanisms
- Governance and interactions between responsible authorities

**General comment:** the methodology very subjective, although the findings are relevant and real.



## AtHlet approach -1

- HERCA-WENRA Approach for a **better cross-border coordination of protective actions during the early phase** of a nuclear accident:
- Divided into 3 steps:
  - the preparedness phase: aim is to achieve and maintain a **shared understanding of the existing** national emergency arrangements through the improvement of bilateral or multilateral arrangements, the testing of these arrangements and the implementation of improvements,
  - the early phase: foresees **rapid information exchanges** by using existing dedicated bilateral and international arrangements, including the exchange of liaison officers as appropriate,
  - the later phase: **common situation report**, accepted by all impacted countries, will further support coordinated protective actions.



## Athlet approach -2

- HERCA and WENRA consider that in Europe:
  - evacuation should be prepared up to 5 km around nuclear power plants, and sheltering and ITB up to 20 km;
  - a general strategy should be defined in order to be able to extend evacuation up to 20 km, and sheltering and ITB up to 100 km;
- Nuclear and radiation safety authorities in Europe should continue attempts to promote compatible response arrangements and protection strategies amongst the European countries.
- **General comment:**
  - the Athlet approach is recommendation
  - Shared understanding is questionable
  - Rapid information exchanges is burden with many problems from beginning (languages, social context of messages, communication channels, multiple sources of information,.....).



## The results of the EP&R report of NTW

The report included many deficiencies pointed out by CSOs:

- EP&R provisions remains **out-dated, inadequate and not realistic (design based scenarios)**. Evacuation (large scale) is not possible in many cases,
- **New situations are not addressed**, even the environment (social and spatial) around NPPs has changed drastically,
- **Citizens and CSOs are not involved** in emergency and post-accident strategies,
- Local authorities and specially local population are **little aware** about trainings,
- **Lessons from emergency exercises & drills** are limitedly taken into account,
- **Communication and notification lines are not entirely working**, sometimes total lack of communication between different concerned administrations,
- It is **not foreseen to use and to take advantages of new media tools** for information dissemination, nor for citizens contribution to monitor (crowdsourcing),
- EP&R is dealt at national level, with **little transboundary cooperation**, heterogeneity of existing EP&R provisions among member states is a real threat,
- Need for **clarification of food standards** and their harmonisation
- **Issues with nuclear liability** – who will pay the consequences?



# Recommendations of the Superior Health Council

1. Enlarge risk analysis and vulnerability analysis:
  - Complexity of technology and organisation measures (population density)
  - Scenarios with low probability and large consequences
2. Extend planning zones:
  - Sheltering, Iodine distribution, evacuation
3. Develop long term recovery and relocation strategy
  - More attention for psycho-social impact, Social impact can be disturbed over decennia
  - Budget for EP&R and liability for huge costs
4. Reinforce bilateral and European coordination and support
5. Pay particular attention to the meaning of risk and the impact of perception
6. Balanced communication should guarantee structured transparency while managing conflicts
7. Organise effective public participation in a precautionary approach



# Conclusion

- The EP&R system in the Europe has all element which are required also according to the IAEA safety standards and is nationally implemented to a good degree, on paper;
- But, soon as the provisions are evaluated in practise, there are many problems;
- The recommendations exists – they need to be implemented;
- Very long way ahead – there is strong resistance between responsible authorities;
- BSS directive gives opportunity for qualitative improvements of deficiencies;
- Civil society will actively support the implementations.

