
Nuclear Transparency Watch



Methodology for work of Working Group on Emergency Preparedness & Response

Final

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I. Introduction

There are several international and legal standards which require that the different interested parties are involved in the emergency preparedness and respond (EP&R) in case of nuclear accident. Basic requirements are set in the Aarhus convention, in particular in Article 5.1.c) of the Convention: *“In the event of any imminent threat to human health or the environment, whether caused by human activities or due to natural causes, all information which could enable the public to take measures to prevent or mitigate harm arising from the threat’...’is disseminated immediately and without delay to members of the public who may be affected”*.

Also the ICRP Publication 109, for example, says: *“During planning, it is essential that the plan is discussed, to the extent practicable, with relevant stakeholders, including other authorities, responders, the public, etc. Otherwise, it will be difficult to implement the plan effectively during the response. The overall protection strategy and its constituent individual protective measures should have been worked through with all those potentially exposed or affected, so that time and resources do not need to be expended during the emergency exposure situation itself in persuading people that this is the optimum response. Such engagement will assist the emergency plans by not being focused solely on the protection of those at greatest risk early in an emergency exposure situation.”*

This is recognised also by EC through different EU projects, like for example in EURANOS (European approach to nuclear and radiological emergency management and rehabilitation strategies) which recognized that local actors and civil society is a key stake at the local, national and European level and assures quality of EP&R. The NERIS platform, created at the end of EURANOS took this concern on board stresses: *“stakeholders need to be involved at the planning stage to help determine appropriate reference levels for emergency exposure situations and trigger levels for the implementation of emergency countermeasures.”*

II. Objectives of WG EP&R

The working group on emergency preparedness and respond was established on 7th of November 2013 as a first working group within Nuclear Transparency Watch with the aim to:

- *Identify key stakes regarding nuclear EP&R from the point of view of civil society,*
- *Identify main needs for improvements of existing EP&R provisions in Europe at the local, national and European level:*
 - *concerning the content of EP&R arrangements (exposure standards, intervention levels, zoning, ...),*
 - *concerning the decision-making processes for EP&R in the perspective of the Aarhus convention.*
- *Identify strategic opportunities to push forward key changes in EP&R at the local, national and European level.*

The proposed process will identify country-specific or site-specific issues on EP&R, including trans-boundary (identified and addressed by national investigations) and EP&R issues of European relevance for the viewpoint of civil society. The WG on EP&R will prepare concrete conclusions and recommendations at the European and national level with special report by end of 2014.

The proposed process will rely on interactions between:

- National investigations led by EP&R WG members (in cooperation with other civil society organizations) at the national and/or local levels notably through national or regional Aarhus Convention & Nuclear (ACN) roundtables (when appropriate),
- Investigations at the European level (seminar, meetings, hearings, ...) by NTW, integrating national views.

Support from EP&R WG will include the activities as inception seminar, methodological and strategic advice, issuing of guidelines for national investigations and participation of NTW members to ACN roundtables.

III. Inputs for the research on EP&R

I. Findings from initial seminar of WG EP&R, February 2014

In different EU countries there are several serious problems regarding the implementations of EP&R provisions in practice. First investigations into the EP&R provisions during the initial seminar of working group on EP&R in February 2014 have shown following gaps, non-consistencies and problems:

1. Monitoring feasibilities:

- Limited competent teams to perform measurement in case of long term needs in many countries,
- Availability of sufficient(calibrated and certified) equipment for measurements,
- Lack of automatic data management support (e.g. GIS).

2. Communication and notification:

- Late transfer of data from on-going development at the affected area to the response centre, delay in reporting,
- Management of response without radiological expert and/or without detailed adequate micro-climate model and quality meteorological input data,
- Lack of permanent operational room for response at response centre,
- Manifold contact lists (wrong and missing contacts),
- Weak trust in official information sources (in some countries),
- Inadequate capacities of NGOs, civil initiatives and independent experts to provide adequate information in time when approached by affected citizens.

3. EP&R at local municipalities:

- No proper preparedness (availability of plans, training, involvement of local population, ...),
- Evacuation plans might be based on non-realistic/outdated presumptions (not taking into account the impact of internet and new social media on information of the affected population, presuming top down organised mass evacuation based on collective means of transportation whereas in the reality the majority of people would try to evacuate by their private cars),
- Outdated evacuation plans (not taking into account recent changes in urban planning like new settlements, shopping malls, medical centres, roads etc. respectively new generators of traffic and/or transport infrastructure),
- Lack of local media (radio) for informing,
- Lack of responsible personnel (e.g. 1 person for 5 different EP plans in 1 municipality – for nuclear emergency, for flooding, for earthquake, for terrorist attack, for chemical disaster),
- Availability of information for citizens,
- Iodine prophylaxes – only small % of population have the tablets in 10 km zone, for others there is no clear information.

4. Technical arrangements for EP&R:

- a. size of the EPZ (emergency preparedness zones) differs very much between the countries,
- b. how many people live in radius of 30km around each NPP,
- c. how many schools, hospitals, nursing homes are in the EPZ,
- d. how far is the nearest border (neighbouring country) from NPP,
- e. number of farms with animals,
- f. evacuation time estimate ((this is compulsory around NPPs in USA),
- g. triggers or OIL (operational intervention levels)...

12.1 IAEA criteria/guidance used in mapping comparisons

Emergency planning zones (IAEA Safety Guide GS-G-2.1)

Table 12-1: Suggested radii of emergency planning zones for reactors >1000 MW(th)

Precautionary action zone (PAZ)	3-5 km
Urgent protective action planning zone (UPZ)	5-30 km

5. Exercises and drills:

- Many remarks, but problems with implementations of conclusions, inadequate quality of evaluation and/or weak impact of evaluation on adequate changes of plans, exercises and drills,
- Involvement of citizens is very limited,

- Only limited to country with accident, not taking into account potentially affected population in neighbouring countries.
- 6. Medical support:**
- Not enough equipment and not enough medical personnel in some countries,
 - No agreement with other medical centres.
- 7. Trans boundary arrangements:**
- In many countries cross border cooperation is not in place (however there are many NPPs on border),
 - Different arrangements in EP&R provisions, lack of trans-boundary co-operation and co-ordination,
 - Lack of cross-border exercises.
- 8. QA/QC (maintaining the plans, or new plans):**
- Poor maintenance of plans regarding important recent spatial changes (new residential neighbourhoods, shopping malls, medical centres, elderly housing, schools, roads etc.)
 - Plans are not taking into consideration recent changes in technologies (internet, mobile phones), media landscape (cable TV, NSM), social values and lifestyles therefore they might be based on outdated/false presumptions,
 - Limited improvement based on drills and exercises,
 - Some plans are missing (Agriculture, Health, ...).

II. EU study on EM&R

DG ENER commissioned in 2013 a study with the title *“Review of current off-site nuclear emergency preparedness and response arrangements in EU member states and neighbouring countries”*. Study was prepared by consortium ENCO (Austria) and UJV (Czech R). The objective of the investigation was:

- Assess the status of the existing arrangements and capabilities for off-site emergency preparedness and response (EP&R) within and between the EU Member States (MS) and neighbouring countries in respect of their coherence and completeness;
- Identify best practices, 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.

This study was conducted in 28 EU countries, plus Norway, Russian federation, Switzerland, Ukraine and Armenia.

Methodology for the study included:

- Collection of information on current arrangements: 2 questioners sent to national contact points;
- Benchmarking against the requirements (IAEA and European Union):
 - GS-R-2: Preparedness and response for a nuclear or radiological emergency, 2002.
 - Council Directive laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation, 96/29/Euratom, 1996.
 - Council Directive on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency, 89/618/Euratom, 1989.
 - Council Regulation laying down maximum permitted levels of radioactive contamination of foodstuffs and of feeding-stuffs following a nuclear accident or any other case of radiological emergency, 3954/87/Euratom, 1987, as amended by Council Regulation 2218/89/Euratom, 1989.
- Mapping against International or European requirements, guidance or recommendations;
- Involvement of Stakeholder Group to internally review the work;
- Case studies – limited to cross border arrangements: AT–CZ and CH-DE-FR;
- Collection of information on future improvements (questionnaire and discussion).

Official information from DG ENER on the study availability from February 2014 is *that „Study contract is on-going, and the report of the study is currently being evaluated by DG ENER and other Commission services according to the formal procedure. it is premature to present draft findings without the Commission conclusions on these findings. the Commission intends to set out its thinking on the way forward in a possible Commission communication this spring.“* But the first impression from NGO who participated in the study stakeholders’ group is that the geographical scope of the review is limited, consideration is limited to arrangements of operating NPPs, the public or other institutions have not been involved and the study is a self- assessment of the member states represented mainly by regulatory bodies. The review of national provisions on the EP&R is a paper exercise and it is not based on practical drills.

IV. Methodology for national and trans-boundary investigations

Based on the discussion during the initial seminar it was agreed that the EP&R WG will focus its investigation on:

- Inclusion of Civil Society Organizations (CSO) in EP&R plans and exercises,
- Checking the implementation of national and trans boundary provision on EP&R,
- Setting the regulatory framework and harmonisation,
- Improvement of information for public.

For this purpose the investigations will include national research on how well the EP&R is organised within the country by taking into account beside the paper arrangements also the information from the field, the round tables discussion organised at national or trans-boundary level, and comparison of the results with the findings from „DG ENER“ study.

For the EP&R investigations following inputs are available:

1. Lessons learnt from first seminar (6-7 February) and minutes with all presentations on the web page www.nuclear-transparency-watch.eu.
2. GS-R-2: Preparedness and response for a nuclear or radiological emergency, 2002: http://www-pub.iaea.org/MTCD/publications/PDF/Pub1133_scr.pdf
3. ENCO study is not available yet but the formal request for access to information made under the terms of the Aarhus Convention (Article 4 on Access to Information) and under Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information also applies has been send to EC in beginning of March 2014.

I. National investigations

In each of NTW/EP&R country the investigation should be based on the findings from the initial seminar which are given in sub-chapter III.i Findings from initial seminar of WG EP&R, February 2014. The proposed tool is a collection of data through the interviews and/or round tables by including the responsible institutions in the country and the local population (citizens, NGOs, municipalities). It is assumed that each national member of EP&R WG will prepare a short report on the findings from III.i in their country.

Additionally there is a **questionnaire (below)** prepared to obtain the EP&R provisions and organisation in the country. It is also expected that the EP&R member will collect nationally the information in order to answer to the questions by involving national responsible representative. The investigation should be summarized in a short report.

Questionnaire on EP&R provisions from a (practical) perspective of civil society

- 1) Which **stakeholders** should be **included in off-site nuclear emergency and response (EP&R) activities** in case of nuclear accident, according to national legislation and regulations in your country? Please provide evidence (The name and the paragraph of the relevant law/regulation/decre, date of issuance and by whom it has been issued). Which stakeholders should be in your opinion included, why, in which role and at what stage?
- 2) What are the provisions regarding **inclusion of civil society** (local initiatives, NGOs) and/or local communities in EP&R activities according your national legislation and regulations? Which paragraph of which law or which regulation or decree are defining

these provisions? When and by whom have they been issued? How are they defining inclusion of civil society and/or local communities?

- 3) At what stage – if at all- **local communities and/or NGOs/local initiatives are included** in EP&R activities:
 - a) In the preparation of the methodology and the guidelines for EP&R plans of activities at national level
 - b) In the approval of the methodology and the guidelines for EP&R plans of activities at national level
 - c) In the preparatory activities for a detailed off site EP&R plan of activities at the specific location of a NPP.
 - d) In the approval of the detailed plan off site EP&R plan of activities at the specific location of a NPP.
 - e) In the approval of the detailed plan of EP&R of activities at the specific location of a NPP.
 - f) In the implementation of EP&R drills and exercises as defined by local EP&R plan
 - g) In the evaluation activities of EP&R drills and exercise as carried out at local level
- 4) Are the local communities and/or civil society engaged in **cross-border EP&R activities**? In what role and how often?
- 5) How do you assess provision of **sheltering** in off-site EP&R plans in your country?
 - a) Are the locations and capacities for sheltering adequate?
 - b) If not, what are main weakness/problems regarding provisions of the adequate sheltering at the specific locations?
 - c) How sheltering can be improved at specific locations?
- 6) How (and by whom) the stocks of **stable iodine pills** are planned in your country?
 - a) Are they planned as individual counter measures or they are connected with sheltering?
 - b) Are those stocks sufficient also in case of major nuclear accident?
 - c) How and by whom is organized delivery of iodine pills?
 - d) Are there in place clear instructions when the pills should be distributed and consumed by the people (potentially) exposed to radiation?
- 7) How do you assess provisions for **evacuation** plans in case of nuclear accidents in your country?
 - a) What are their strengths and weaknesses?
 - b) Have the evacuation plans been updated after the accident in Fukushima or are they at least planned to be updated? In the latter case until when?
 - c) How evacuation can be improved in general and on specific sites?

- 8) Is there a clear strategy regarding **decontamination** in your country?
 - a) Are decontamination sites clearly defined and accessible?
 - b) Is there sufficient well trained staff and equipment for an effective decontamination?
 - c) How many staff would be needed in addition to assure sufficient capacities in case of major nuclear accident?

- 9) How EP&R plans in your country are addressing the issue of **relocation**?
 - a) Have those plans been updated after the accident in Fukushima or are they at least planned to be updated?
 - b) What major changes have been made (respectively are planned) to be undertaken?

- 10) How are **food and drinking water restrictions** managed under EP&R plan at national level?
 - a) How will the control be assured? Are there adequate capacities to assure an effective control?
 - b) How are the provision of non-contaminated food and drinking water assured? Are there sufficient stocks of non-contaminated water and food also in case of a major nuclear accident?
 - c) Have there been – or are at least planned – changes after Fukushima accident? What are these changes?

- 11) Are there in EP&R plans clear criteria under what circumstances people will be allowed to **return** (to their homes) **from evacuation or relocation**?
 - a) How this return will be organized?
 - b) Are there clear instructions to people on what to do and what not to do after return?
 - c) Are there sufficient information channels and capacities to distribute in time those instructions?

- 12) How people in emergency protection zone are **informed on EP&R activities**?
 - a) What are the basic means/media of informing the people on what they should do in case of an accident in nearby NPP?
 - b) Are there any additional media/forms of communication and if yes which?

- 13) How (by which media) and by whom the people in the emergency planning zone **will be informed on a nuclear accident** in the nearby NPP? How and by **whom the general public will be informed** on nuclear accident?
 - a) What – if anything – should be improved in this respect in the first and/or in the second case?

- 14) Would the **information** on the level of exposure to radiation, sheltering measures and evacuation activities **provided by authorities be considered as reliable, sufficient and trusted** by the people?
- Do you believe that in case of emergency people would behave according to the instructions provided by authorities?
 - If not why and what should be improved to enhance trust in information and instructions?
- 15) Are there in your country enough calibrated measurement devices to assure an adequate **measurement of levels of radiation** in case of severe nuclear accident?
- Are there enough skilled and trained people to provide measurement?
 - How the situation could be improved?
- 16) Which **civil society organization(s) and/or independent experts and/or institute(s) have a potential to provide trustful, credible and effective information** on EP&R in case of a severe accident in NPP in your country?
- What would be needed to increase capacities of those organizations/individuals to provide reliable, in time and quality information on nuclear EP&R?
 - Which channels of distribution of that information would be most useful in case of an emergency situation?

Contributions on national level should be prepared by October 2014. The WG EP&R will support the national investigations with methodological advice and guidelines upon request.

II. Round tables

In parallel „Round tables“ will be organised in different countries with focus on national and cross border EP&R arrangements. There is already preliminary list of events with dates, organisation responsibilities, involved countries and expected outcomes. This data could be changed and serve as a first information on planned activities. It is expected that for each of the round tables there will be detailed report prepared with all information regarding the event, the participants attended the round table, the summary of the discussions and the recommendation adopted.

Event	Date	Place	Organisers	Countries involved	Expected outcome
RT on EP&R of NPP Cattenom	May 17 2014	Schengen (Lux)	Greens Fichtelgebirge, CI Cattenom non merci, Greenpeace Luxemburg	B, Lux, F, Germany	Suggestions for improvement of EP&R for NPP Cattenom

<i>RT on EP&R on Eastern Balkans</i>	June 20 2014	Sofia (Bg)	Zelenite, Foundation for Environment and Agriculture	Bg, Srb, MN, Ro, FYRM	Overview of EP&R in involved countries
<i>RT on EP&R in France</i>	September or October 2014	?	ANCLLI and HCTSIN	Fr	Recommendation for improvement of EP&R in France
<i>RT on EP&R of NPP Temelin</i>	September 27 or October 4 or 11	Temelin?	Greens Fichtelgebirge, Greenpeace Czech Rep.c?	Cz, Svk?, A?	Recomendations for improvement of EP&R for NPP Cattenom
<i>RT on EP&R cross border aspects of NPP Krško</i>	October 2014	Krško or Brežice	REC Slovenia, CI Krško-Brežice, Focus, Zelena Akcija	Slo, Cro, A	Recomendations for improved cross border cooperation on EP&R for NPP Krško
<i>RT on EP&R in Ukraine</i>	October	Kiev ?	Mama 86	U, Pol, Hu?	Overview of EP&R in Ukraine with suggestions for improvements

III. Report

Based on the results of the research, the report is planned to be prepared on the EP&R provision as seen through the eyes of civil society. It will include following table of content:

- Introduction,
- Results of NTW investigation (seminar, results from questionnaire, comparison of the EC study - examine the reality of EP&R by national investigation with involvement of responsible and affected people (experts, fire brigades, mayors, local population, NGOs, citizens, ...),
- Round tables deliveries,
- Suggestions and recommendations,
- Conclusions

The report will be delivered at the end of 2014.