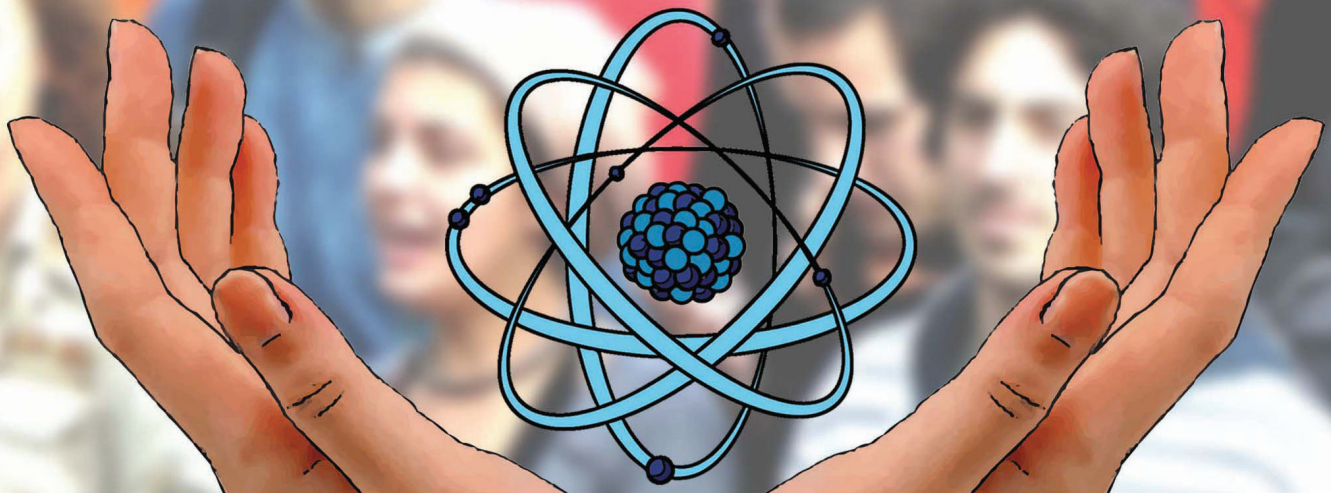
Nuclear Transparency Watch

NTW

NUCLEAR TRANSPARENCY WATCH

Position paper of NTW on Emergency Preparedness & Response (EP&R) situation in Europe



Publisher: Nuclear Transparency Watch

Editor: Nadja Železnik

Cover and page design: Maša Primc

March 2015

Executive Summary

In reaction to the lack of adequate assessment by the European Commission (EC) and European governments of the lessons to be learned from the 2011 Fukushima catastrophe concerning current nuclear emergency preparedness and response, one of the first steps of the Nuclear Transparency Watch (NTW) was to establish the working group (WG) on Emergency Preparedness and Response (EP&R). The aims of the EP&R WG were to carry out an evaluation of the existing European and national EP&R provisions from the civil society point of view, to inform the public on the findings and to provide guidance for further activities of the interested public.

The working group collected information on EP&R provisions in Europe and Ukraine and made analyses based on the following methods and sources: desk work reviewing the national provisions and international requirements, interviews and questionnaires with representatives of responsible institutions and members of local populations, trans-boundary round tables involving the participation of responsible institutions and civil society, international seminars with experts' institutions and international associations as well as the available investigations performed by the European institutions (e.g., the "Review of current off-site nuclear emergency preparedness and response arrangements in EU member states and neighbouring countries" study). It has to be emphasised that the NTW investigations were performed by individuals or associations which did not possess or have access to dedicated resources to perform the work and also under conditions where they were sometimes obstructed from obtaining requested information. Hence, the results do not claim to be comprehensive or homogeneous, but provide initial information on the EP&R situation as seen from the civil society point of view.

In this position paper the main findings, viewpoints, recommendations and proposals of the members of the EP&R Working Group are presented.

It has been revealed that the usual top-down approach which has been used to date in EP&R should be changed and that local populations and interested civil society organisations should be involved in this development. This would be the best cure against sectoral "silo thinking" and in particular, the problems properly defining the responsibilities of civil protection on the one hand and the safety and radiation protection authorities on the other. Public participation would also increase the scope, reduce the use of false or outdated presumptions and/or data, steepen the learning curve necessary after the Fukushima experiences and overcome cross-border obstacles. Current limitations due to a certain "tunnel view" based on a reluctance to include the unexpected need to be overcome if the complexity of nuclear emergency situations in real world settings is to be addressed. The European Parliament, the European Commission, national governments, regional bodies and municipalities should therefore together with nuclear operators provide access to relevant information as well as support participation in emergency preparedness and response planning of interested citizens, citizens' initiatives and civil society organisations (CSOs) regardless of their general position on the commercial use of nuclear power.

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"It should be assumed that "all possible phenomena would occur". Moreover, it is necessary to recognize that there could be kinds of phenomena, which do not even be recognized as impossible phenomena, in other words, unthinkable phenomena can also occur. […]

It is necessary to make full preparations based on the assumption that unthinkable phenomena might occur."

Prof. Yotaro Hatamura, Chairman of the Investigation Committee on the Accident at the Fukushima Nuclear Power Stations of Tokyo Electric Power Company, Chairman's remarks, 23rd of July 2012

1 Introduction

Directly after the Fukushima nuclear catastrophe, which started on 11 March 2011, the European Council initiated a reflection on lessons learned from this event in the form of the European nuclear stress tests. Already at early stage, several citizens' organisations noticed that although Fukushima had seen severe problems in the off-site emergency response, resulting in a high casualty toll as well as unbearable situations for many of the involved people from the surrounding areas, the issue of off-site emergency preparedness and response was entirely missing from this exercise. They called upon the European Commission to address this gap, and pursued the issue during the development of the European nuclear stress tests.

At the end of 2013, Nuclear Transparency Watch (NTW) was created by members of the European Parliament from a range of political groups and CSOs with the objective of ensuring greater vigilance and public involvement in relation to all activities in the nuclear sector. The principal focus of NTW is on transparency and public participation as means to reduce nuclear risk and the protection of human health and the environment. The objective of NTW is to enhance the levels of civil society attention and public participation in nuclear related decision-making processes such as decisions on the construction of nuclear installations, nuclear power plant lifetime extension, radioactive waste management, emergency provisions and decommissioning. It also strives for improved public access to information in nuclear related areas at national and European levels, and initiates partnerships and cooperation in developments regarding nuclear transparency in various European countries.
One of the first steps of NTW was to establish the working group on Emergency Preparedness and Response (EP&R) in the case of nuclear or radiation accidents with the aim to carry out an evaluation of the existing European and national EP&R provisions from the civil society point of view, to inform the public on the findings and to provide guidance for further activities of the interested public. The objectives of the EP&R WG were to identify:

- Key challenges regarding nuclear EP&R from the point of view of civil society;
- Essential improvements of existing EP&R provisions in Europe at the local, national and European level with particular reference to:
  - the content of EP&R arrangements (including exposure standards, intervention levels, zoning, trans-boundary arrangements) and
  - the implementation of the provisions of the Aarhus Convention relevant to EP&R decision-making processes and
- Strategic opportunities to push forward key changes in order to strengthen EP&R at the local, national and European levels.

In order to achieve the above objectives the working group EP&R adopted a methodology [1] and implemented national and international investigations based on guidelines [2]. Information was collected and analysed based on the following methods and sources: desk work reviewing the national provisions and international requirements; interviews and questionnaires with representatives of responsible institutions and members of local pop-

ulations, trans-boundary round tables involving the participation of responsible institutions and civil society, international seminars with expert institutions and international associations as well as the available investigations performed by the European institutions (e.g., the "Review of current off-site nuclear emergency preparedness and response arrangements in EU member states and neighbouring countries" study[1]). The detailed results of this analysis by the working group EP&R are described in a separate report. The NTW investigations were performed by individuals or associations with very limited dedicated resources to perform the work and also under conditions where they were sometimes obstructed in obtaining requested information. Hence, the results do not claim to be comprehensive or homogeneous, but provide initial information on the EP&R situation as seen from the civil society point of view.

This position paper presents the main findings, viewpoints, recommendations and proposals of the members of the EP&R working group, summarising the opinion of NTW on the EP&R situation in Europe.

2 Background information

Following the International Atomic Energy Agency's (IAEA) recommendations, nuclear safety is based on *"defence in depth"* with five independent levels of protection. The objective of the last level is the *"mitigation of radiological consequences of significant releases of radioactive materials"* by means of off-site emergency response. The IAEA stresses that even if the efforts described in the lower levels are expected to be effective in limiting the consequences of severe accidents, *"it would be inconsistent with defence in depth to dismiss off-site emergency plans"*. Therefore in 2002, the IAEA adopted in cooperation with other international institutions safety requirements on preparedness and response for a nuclear or radiological emergency which integrate the different bodies involved, common concepts and expectations, a clear allocation of responsibilities among all response organisations, well defined agreements between these organisations and arrangements for co-ordinating an integrated response. Citizens' organisations and the affected population do not have a specific active role in these plans.

But there are several international and legal standards that require that the different interested parties, also the public, are involved in the emergency preparedness and response in case of nuclear accident. Basic requirements are set in the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters [3], in particular in Article 5.1.(c) which requires Parties to ensure that:

> *"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 and is held by a public authority is disseminated immediately and without delay to members of the public who may be affected".*

Also the Publication 109 [4], 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."*

[1] http://www.nuclear-transparency-watch.eu/wp-content/uploads/2014/03/Report-ENCO.pdf

The need for adoption of a stronger legal framework in this area has been recognised also by the European Commission, especially after the Chernobyl accident in April 1986, which led to the acceptance of several legal requirements dealing with early exchange of information, on informing the general public about health protection measures, steps in the event of a radiological emergency and other basic safety standards for radiation protection [5, 6, 7]. In addition, the European Commission supported several different EU projects, for example EURANOS (European approach to nuclear and radiological emergency management and rehabilitation strategies, http://www.euranos.fzk.de) which recognised that local actors and civil society are key stakeholders at the local, national and European levels to assure the quality of EP&R. The European NERIS platform (European Platform on preparedness for nuclear and radiological emergency response and recovery, http://www.eu-neris.net), created at the end of EURANOS, took this concern on board and 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."*

The Fukushima accident in March 2011 has intensified European concerns about EP&R provisions. Although the European Commission and European Nuclear Safety Regulators Group (ENSREG) initiated a process of stress tests for all operating nuclear power stations in Europe, this process focused only on safety and did not include off-site EP&R. This is contradictory to the defence in depth basis of the IAEA concept of nuclear safety. Civil society organisations (e.g. Greenpeace) pointed out the need to assess off-site EP&R [9]. As indicated in several accident assessments, also for example in the official report of the Fukushima Nuclear Accident Independent Investigation Commission prepared by the National DIET of Japan [8], there have been many mistakes related to EP&R in Japan, such as incomplete scenario considerations and consequently unrealistic threat assessments, poor crisis preparation and management and a lack of preparation of the local population for the response. The Investigation Commission stated in the conclusions

> *"that the residents' confusion over the evacuation stemmed from the regulators' negligence and failure over the years to implement adequate measures against a nuclear disaster, as well as a lack of action by previous governments and regulators focused on crisis management. The crisis management system that existed for the Kantei and the regulators should protect the health and safety of the public, but it failed in this function."*

As a matter of fact, it is a question whether current EP&R provisions are scaled to face INES (International Nuclear and Radiological Event Scale) 7 nuclear accidents or even lower levels. Present EP&R plans may be suited to face an accident with a limited release of radioisotopes in time and space. The Chernobyl and Fukushima accidents proved that they are unable to cope with large scale releases and contamination and in complex situations where the accident is linked to other external (catastrophic) events.

Also in 2012, the Aarhus Convention & Nuclear process organised two European round tables respectively on post-accident issues (February 2012) and on nuclear safety (December 2012) which identified that there is no proper preparedness for a similar nuclear accident in Europe and there is a need to improve EP&R. One of the main deficiencies according to the participants of the round tables is the lack of participation of the local public and citizens' organisations in the EP&R planning, exercises and implementation. In parallel, due to the recognition of the need, civil society has taken various initiatives on EP&R at the national level, e.g. the development of guidance on off-site emergency plans, crisis exercises, and iodine distribution campaigns by the French association ANCCLI (Association Nationale des Comités et Commissions Locales d'Information), or for example, the implementation of an international project coordinated by municipalities in Slovenia (with the cities of Krško and Brežice) on the assurance of preparedness in local municipalities in a trans-boundary context involving also Croatia (Zagreb) and Romania (Cernavoda).

It has also been recognised that several European regulatory bodies' associations, like HERCA (Heads of Radiological protection Competent Authorities, http://www.herca.org) and WENRA (Western European Nuclear

Regulators Association, http://www.wenra.org), have identified problems related to EP&R approaches such as: lack of agreement on zoning and other urgent protective measures, harmonisation of national approaches and trans-boundary arrangements and communication challenges related to the exchange and coordination at international level and in particular at the European level. They started to develop a more consistent approach with regard to the management of nuclear and radiological emergency situations as a top priority with the aim to develop a comprehensive approach to harmonisation. At the end of 2014 they proposed the AtHLET (Ad hoc High-Level Task Force on Emergencies) approach [10], which considers that within Europe, evacuation should be prepared in an area of minimally 5 km around nuclear power plants, sheltering and ITB (iodine thyroid blocking) in an area of minimally 20 km and 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. In 2013 the European Commission DG ENERGY commissioned a report entitled *"Review of current off-site nuclear emergency preparedness and response arrangements in EU member States and neighbouring countries"* which, however, provides only a formal overview of the EP&R provisions and fulfilment of international requirements based on a self-evaluation by national regulatory bodies.

Then in 2013 Nuclear Transparency Watch formed a special EP&R working group with members from across Europe and started to investigate the arrangements and challenges of EP&R from a civil society point of view. The results of the work can be found on the NTW web page: http://www.nuclear-transparency-watch.eu/category/activities/nuclear-emergency-preparedness-and-response.

3 Viewpoints and recommendations of NTW

3.1 Evaluation of national EP&R provisions

Findings

1. Emergency preparedness is mostly based on an INES 5 nuclear accident and response plans generally cannot cope with an INES 7 accident. This is especially true for severe accidents with longer duration of radioactive releases.

2. **Gaps in the implementation of emergency preparedness provisions**: the NTW national assessments demonstrate the existence of large gaps between the announced provisions and the reality and/or the absence or poor implementation of planned activities in practice.

3. **The feasibility of the evacuation of large urban areas appears to be unrealistic**, at least in some cases where the structure of settlements, topography and/or transport infrastructure, either individually or in combination, makes it impossible to evacuate the population in due time to avoid exposure to excessive radiation. Evacuation from large urban areas presents furthermore a large stress to vulnerable groups like the elderly, people with handicap, patients at hospitals, etc. **Vulnerable people are to a larger extent at risk during an emergency evacuation.**

4. **Regional or local authorities are not properly prepared for a nuclear accident:** NTW has observed that many regional and local authorities are not really prepared for a nuclear accident (lack of sufficient devoted staff and accurate evacuation plans; lack of adequate training and full scope exercises with the involvement of the local population)

5. NTW has observed a l**ack of capacity to perform post-accident off-site radiation monitoring**. Especially in smaller countries, there are only 2 or 3 competent teams in the country capable of performing the valid

radiological measurements. Additionally, the availability of (state of the art, calibrated and certified) equipment for measurements is too limited.

6. **Inadequate medical support** in the country and, in trans-boundary situations, internationally: NTW identified medical support to be in most cases available only on a **limited scale**. There is not enough equipment and not enough medical personnel in some countries. Training of medical staff (doctors, nurses, etc.) on the subject of nuclear EP&R is not appropriate, especially because in the case of a real nuclear emergency they are and will remain important primary reliable information sources for the general public.

Proposals

1. **EP&R plans should take into account the possibility of a large-scale accident and a long duration release of radioactive materials.**

2. **A review of all EP&R provisions and their implementation is necessary to assess whether they are still up to date:** NTW demands national reviews of effectiveness of EP&R provisions under realistic circumstances. These should be performed by an independent body that has the capacity to do a scientifically sound assessment as well as by civil society (e.g. local inhabitants, organised local committees, NGOs and relevant civil associations). This review should include also an investigation into the feasibility of large urban area evacuations, including the assessment of Evacuation Time Estimates, availability of post-accident radiation monitoring, sufficient and adequate medical support and other relevant issues related to implementation.

3. **The gaps in local EP&R need to be overcome**: NTW recommends that gaps in local emergency preparedness and response are identified systematically in partnership with national authorities and civil society organisations in a way that reflects the real situation, is based on the interest of (local) citizens and takes trans-boundary arrangements into account where necessary.

4. **Operators and/or national authorities have to allocate appropriate resources** to local municipalities, civil rescue teams, medical support, CSOs and civil initiatives to participate in exercises and evaluations.

5. **Operational availability of competent teams to perform radiation monitoring as a tool to coordinate the emergency response:** NTW proposes the establishment of a European “emergency task force” that would help to provide necessary equipment and expertise to the Member States to undertake prompt measurement of radiation and environmental data

3.2 Assessment of Plans, including Citizens and Stakeholders involvement

Findings

1. NTW observed that even where there are many exercises and drills on EP&R, **the problem is how lessons learned are taken into account**. Many remarks and data are collected during exercises and drills, but these are not sufficiently reflected into revised plans.

2. NTW identified gaps in the field of **organisation of nuclear emergency and response plans resulting in sub-optimal management of emergency response**. This includes lack or late transfer of data from affected areas, lack of radiological expertise among first responders, absence of meteorological input data, lack of established operations rooms, etc.

3. **NTW identified poor maintenance of EP&R plans** regarding important recent spatial changes (new residential neighbourhoods, shopping malls, medical centres, schools, roads, etc.). Plans are also not taking into consideration recent changes in technology (internet, mobile phones, new social media), and in social values and lifestyles.

4. NTW noticed that **EP&R plans have not been assessed by an independent body nor have been quantitatively evaluated**. Examples include the question how many people would be able to hear the alarm, or how many will receive alerting text-messages?

Proposals

1. **Creating a legally based role for CSOs in EP&R:** NTW believes that there is a need for developing a legal framework related to EP&R requiring the involvement of CSOs at each level of EP&R preparation and for related decisions, in the spirit of and in compliance with the requirements of the Aarhus Convention. Efficient EP&R can be expected only where there is cooperative action by all concerned stakeholders in order to co-manage the situation.

2. **Improvement of EP&R plans:** there is a need to improve EP&R plans by introducing quality control procedures including feedback from new events (accidents) anywhere in the world and lessons learned from drills and exercises. Evaluation of plans should be performed by an inter-disciplinary team including both experts and CSOs. The EP&R plans should take into account recent changes in information technologies, social values and lifestyles to ensure that they are based on current conditions.

3.3 Emergency information

Findings

1. **There are crucial gaps in the management of information during an emergency phase.** European legislation (Council decision 67/600/Euratom and the Directive 2013/59/Euratom) requires from Member States that they inform the population about health protection measures and steps to be taken in the event of a radiological emergency as well as providing regular updated information to people likely to be affected in such a case of emergency. However, problems with practical implementation of information dissemination during the Chernobyl and Fukushima catastrophes and other accidents resulted in a lack of clarity, loss of time, wrong decisions and distrust.

2. NTW noticed that even during exercises and drills, the **communication and notification lines for the responsible institutions are not entirely working**. The contact data of involved personnel are sometimes wrong and/or outdated. Necessary stand-by positions are not arranged. Different concerned administration services are not communicating between themselves.

3. During the Fukushima catastrophe, **social networks** played an important role in how citizens gathered ongoing information in Japan and beyond, but this dynamic is not taken into account in EP&R plans. How will authorities use this means of communications to dispatch quickly relevant information to a wide audience? How are they going to tackle contradictory information, rumours, etc.?

Proposals

1. Management of information during the emergency phase: NTW takes note of the proposal of HERCA-WENRA regarding the management of early information and co-ordination in the emergency phase (which is characterised by strong uncertainty) while suggesting further investigation into the consistency and trustworthiness of the proposed options. It should be noted that different groups of the affected populations will have different criteria regarding credibility of information sources and the risk of communication chaos exists. There should not only be attention for good practice, but especially challenges in information management should be addressed. Such an assessment should involve civil society in order to test and update public information provisions. The obligation to organise such reviews has to be included in the regulatory framework of nuclear installation operation.

2. Independent experts, local NGOs, CSO representatives, and stakeholders involved in emergency response should have direct access to technical information related to the accident as required by Article 5.1.(c) of the Aarhus Convention.

3.4 Trans-boundary dimensions of nuclear accidents

Findings

1. The **transboundary dimension of emergency management**. Nuclear EP&R is definitely a transnational issue and there is a long way to go to make it such in the mind of the decision-makers across the concerned countries. NTW identified insufficient communication on trans-boundary arrangements between relevant authorities in all cases it assessed. This is likely to result in different responses and inconsistencies along and across borders, leading in turn to distrust in the decisions of authorities and thereby amplifying the seriousness of the crisis.

2. The first round tables organised by NTW demonstrated the **difficulty to bring together all the players across borders in order to discuss EP&R** as a common issue.

3. **The heterogeneity of measures in different countries** (like the distribution of iodine, evacuation perimeters and zoning) is another crucial trans-boundary dimension. This is potentially a source of chaos, distrust, loss of credibility and, most important, of failure to protect human populations. Among the important observed issues is the lack of skills to communicate fluently in English among those that are in charge of counter-measures.

Proposals

1. **An EU-wide policy on trans-boundary EP&R provisions:** It is proposed that the European Commission takes the lead in developing an EU-wide policy by assessing the current shortcomings and adopting an action plan to remedy insufficient communication between Member States on trans-boundary emergency situations. This should include provisions and capacities for an immediate international peer-reviewed assessment of existing EP&R provisions after each accident that requires off-site emergency measures.

2. **Harmonisation of the EP&R measures:** NTW is very keen to examine how it is possible to harmonise national provisions for EP&R measures in a trans-boundary context, like emergency zoning for evacuation, sheltering, and distribution of iodine prophylaxis. NTW is ready to support efforts to organise such harmonisation (benchmarking and/or legal frameworks).

3.5 Post-accident consequences

Findings

1. The **long term management of radiological contamination** (post-accident management). This issue has hardly been addressed by European countries. France is one of the few countries having developed national policies for post-accident management. This is a situation that needs to be improved. It has to be acknowledged that a "return to normal" situation is not possible after a severe nuclear accident with large radioactive emissions. It is recommended to harmonise the norms for decontamination and resettlement in line with long term ICRP exposure norms and to avoid the confusion as seen after the Chernobyl and Fukushima catastrophes.

2. **There is a need for clarification of food standards and their harmonisation especially in the post-accident context.** It has been noted that there are several different food standards imposing the limitation of radioactivity per mass or volume, e.g. the FAO and WHO standards state 1000 Bq/kg of food stuff for Cs-137 (Codex Alimentarius) and the EU imposes different limits for import of food from areas affected by a nuclear accident (e.g. 370 Bq/kg for Cs-137 in diary products from the Chernobyl area and 200 Bq/kg for Cs-137 in dairy products from Japan after the Fukushima catastrophe).

The proposals

1. **Long term management of radiological contamination:** NTW sees an urgent need for proper post-accident strategies and operational programs that should in principle prepare society for the challenges after a nuclear disaster. As a first step, the European Parliament and the European Commission should strengthen the legal framework to address this issue on EU level.

2. **Food standards harmonisation:** A repetition of the chaos in food standards after the Fukushima catastrophe has to be prevented at all cost. The situation of confusion caused mistrust in the legal framework and the responsible institutions. The European Commission and other authorities should create a transparent, scientifically sound and publicly accepted set of standards and create harmonisation across Europe.

3.6 On-site emergency management

Findings

1. According to NTW observations more specific mechanism are required to ensure the mitigation of accident consequences on-site. The management of a nuclear accident in a highly contaminated environment is an extremely challenging issue that cannot be based on voluntary workers only.

2. The Fukushima emergency management has revealed severe problems regarding the protection of workers (e.g. the misuse of dosimeters, involvement of the yakuza, recruitment of homeless and socially weak workers) and hesitation of workers to be engaged in on-site emergency management (also in the context of the safety of their family members). The position and safety of workers should comply with the relevant provisions of Directive 2013/59 /Euratom [5] as also with all relevant provisions under the TEU and TFEU and without prejudice to the latter.

3. Different technical tools should be available in advance to assure as low as possible doses for all on-site workers during an emergency response.

Proposals

1. **Management of accidents and emergencies on-site:** NTW proposes to the European Commission to consider the establishment of a special European task force of professionals in support of management of on-site nuclear emergencies that would include support in operation of reactors that are under on-site emergency regime. Developments in robotic research and innovation programmes to reduce exposure of emergency workers to radiation should be supported.

2. **Information disclosure during on-site emergency management:** NTW proposes that legislative protection for whistle-blowers amongst on-site nuclear emergency workers should be strengthened in the case of nuclear emergency information provision whereby the benefit of the public should prevail over private interests of nuclear operators and suppliers.

3. **Access to information during on-site emergency management.** On-site emergency management is the responsibility of the operator. However, in the opinion of NTW, the surrounding population, including CSOs, should have wide access to information about on-site developments that are relevant for off-site management in accordance with Article 5.1 of the Aarhus Convention

3.7 Nuclear liabilities

Findings

1. Any **review of liability provisions in case of nuclear accidents demonstrates the significant divergence** between existing insurance and liability provisions for nuclear accidents and the estimated cost of large and medium size accidents. It is clear that the current liability provisions within Europe will lead to a lack of sufficient cash flow to provide victims of a large nuclear emergency with sufficient compensation at the moment it is needed. Causes include capping of liability at totally inadequate levels; far too low amounts of guaranteed financial reserves; lack of clarity on the role of public funds in liability; lack of clarity of responsibility for granting and disbursement of compensation directly during and after the emergency situation and others.

Proposal

1. **NTW suggests to the European Parliament that it address this major problem actively** in partnership with CSOs in order to investigate how to establish appropriate liability provisions. This should entail a review of existing surveys on the cost of nuclear accidents. Liability policies should be based on creating the required cash-flow for those in need during and after the emergency situation - not on the economic performance of nuclear operators. NTW wants to see European and EU initiatives to achieve this in the short-term

4 Conclusions

It is NTW's position that active, well-informed, knowledgeable citizens and CSOs supported by non-partisan expertise are a key pillar of an effective, off-site EP&R system together with NPP operators, national authorities and municipalities. This system should be responsive to the continuous changes of framework conditions and should generate fast learning processes in order to adapt and improve.

Through the investigations of its working group on EP&R, Nuclear Transparency Watch has recognised the importance of civil society involvement in this critical area and made its own comprehensive analyses of the EP&R arrangements in a number of EU countries. This position paper has been adopted on the basis of these investigations and findings. Its main purpose is to inform the public, the responsible national authorities and above all the European political institutions that a serious improvement of EP&R capacities must be initiated.

NTW's assessment has made it obvious that the usual top-down approach which has been used to date should be changed and that local populations and interested civil society organisations should be involved in this development. NTW considers this the best cure against sectoral 'silo thinking', and in particular, against the problem of articulation of the responsibilities of civil protection authorities on the one hand and the safety and radiation protection authorities on the other. Public participation would also increase the capacity of involved institutions to deal with nuclear emergencies by reducing the number of false or outdated assumptions and data, increase fast learning and help overcome cross-border obstacles. The capacity for fast learning and adaptation to new circumstances is vital for effective EP&R, because the unexpected is inevitably a part of any complex emergency situation.

Therefore, NTW recommends in the strongest possible terms that the European Parliament, the European Commission, national governments, regional bodies and municipalities together with nuclear operators should provide access to relevant information as well as support to interested citizens, citizens' initiatives and CSOs regardless of their general position on the commercial use of nuclear power.

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[2]Council Directive 89/618/Euratom of 27 November 1989 on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency

[3]Council Directive 90/641/Euratom of 4 December 1990 on the operational protection of outside workers exposed to the risk of ionizing radiation during their activities in controlled areas

[4]Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation.

[5]Council Directive 97/43/Euratom of 30 June 1997 on health protection of individuals against the dangers of ionizing radiation in relation to medical exposure

[6]Council Directive 2003/122/Euratom of 22 December 2003 on the control of high-activity sealed radioactive sources and orphan sources


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