Observations of NTW on the Nuclear and Radiological Emergency Plan for the Belgian Territory

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Nuclear Transparency Watch (NTW) took note of the draft "Nuclear and Radiological Emergency Plan for the Belgian Territory", which was presented on 10 January 2017 to the subcommittee on Nuclear Safety of the Belgian Federal Parliament.

Nuclear Transparency Watch was launched in 2013 after a call from Members of the European Parliament from different political parties for "a watch about nuclear transparency", following the disaster of Fukushima. The main objective of this organisation is to develop transparency and safety in nuclear activities and we aim to offer a counter-expertise essential for safety issues as well as for the protection of the environment. NTW has developed several working groups, especially one about the emergency preparedness and response, trying to learn from the experience of Fukushima.

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I. Legal principles and recommendations that form the basis of the expectations of civil society regarding access to information and participation in the preparation and management of nuclear and radiological emergencies and their consequences (Reminder)

Several international texts concerning public information and participation as well as the rights of displaced persons are applicable to the preparation and management of a nuclear or radiological emergency and its consequences.

The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, in addition to its general provisions on information, participation and access to environmental justice, also includes provisions specific to emergencies. Article 5.1 (c) provides that each Party shall 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."*

The Council Directive 2014/87/Euratom of 8 July 2014 amending Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations (Nuclear Safety Directive) requires of the regulatory authorities and operators that they provide *"rapid information in the event of an incident or accident to workers and the public".* In the field of public participation in safety decisions, the Nuclear Safety Directive states in its preamble that a *"key lesson learned from the Fukushima nuclear accident is the importance of enhancing transparency on nuclear safety matters. Transparency is also an important means to promote independence in regulatory decision making…. Moreover, the public should be given opportunities to participate effectively in the licencing process of nuclear installations."* This includes, in particular, the decision-making process for emergency and post-accident management planning at the federal level, as well at the level of federated entities, provinces and municipalities.

Council Directive 2013/59/Euratom of 5 December 2013 laying down basic standards for health protection against the dangers arising from exposure to ionizing radiation *(Basic Safety Standards Directive - BSS) also lays down public information obligations for Member States. Article 70 provides notably that (paragraph 1) "Member States shall ensure that the members of the public likely to be affected in the event of an emergency are given information about the health protection measures applicable to them and about the action they should take in the event of such an emergency".* According to the same article (paragraph 4), "*Member States shall ensure that the information is updated and distributed at regular intervals and whenever significant changes take place. This information shall be permanently available to the public."*

The draft of the Council conclusions on "Off-site nuclear emergency preparedness and response*", adopted in the 3439th meeting of the General affairs Counci,l stresses "the benefits of involving civil society in preparedness activities, in particular during nuclear emergency exercises, to increase transparency and public participation, and to improve public confidence in the arrangements".*

Finally, recalling that "evacuation almost always generates a situation of hardship and suffering for the affected populations", the **United Nations Guiding Principles on Internal Displacement** provide guarantees to the persons concerned, which apply in particular in the case of displacements following a technological disaster. In particular, "*Competent authorities have the primary duty and*

responsibility to establish conditions, as well as provide the means, which allow internally displaced persons to return voluntarily, in safety and with dignity, to their homes or places of habitual residence, or to resettle voluntarily in another part of the country. Such authorities shall endeavour to facilitate the reintegration of returned or resettled internally displaced persons." On this last point, the guiding principles state *"Special efforts should be made to ensure the full participation of internally displaced persons in the planning and management of their return or resettlement and reintegration."*

It arises from the above quoted conventions and directives that, as an important stakeholder in EP&R, the public must be involved in an early phase in the elaboration of nuclear emergency plans. NTW has ascertained that this has not been the case with the new Belgian EP&R-plan. The credibility and support can only be assured if all concerned citizens have been involved in advance in a wide consultation process and in large-scale emergency exercises. The effectiveness of a nuclear emergency plan in times of a radiological crisis greatly depends on its credibility with the public and the support of civil society.

Therefore NTW recommends that, before the new EP&R plan is finalised, a broad consultation process is set up with the most important stakeholder: civil society.

II - Observations on the draft of the Nuclear and Radiological Emergency Plan for the Belgian territory

The plan doesn't reply to the risks to which Belgium is exposed

In theory, the plan claims to be an answer to a radiological contamination covering the entire territory of the country. It envisages the possibility of large-scale discharges, the possibility of a nuclear accident leads to contamination of territories such that it does not allow a return to the situation prevailing before the accident and envisages the possibility of a long post- accidental period lasting several decades.

But this does not match with the dimensions of the Emergency Planning Zones. An EPZ for evacuation limited to only 10 km and the pre-distribution of iodine tablets limited to 20 km (just like in the old plan) are not appropriate. By not extending the EPZ for evacuation to 20 km (as advised by the Superior Health Council) means that the EP&R plan avoids the essential advance preparation for the evacuation of the city of Antwerp (500,000 inhabitants), which is an expensive and complex preparation. Although the restricted 10 km evacuation EPZ is justified by the claim that the Belgian NPPs are much better protected thanks to a double concrete containment and that because of this a substantial off-site release of radioactivity is extremely unlikely, this does not count for all the Belgian reactors, nor for the French reactors close to the Belgian border. Belgium has 20 commercial reactors within or near to its borders. Furthermore, Belgium has the particularity to have a population density around its NPPs which is 10 times higher than in Fukushima with big cities and population centers as close as a few kilometers from its NPPs.

NTW is deeply concerned that the emergency planning areas are not compatible with the recommendations of the Belgian Superior Health Council.[1]

This plan does not take into account a Fukushima-type event

It should be noted that the provisions of the Emergency Plan may be inadequate in situations of long emergency where the situation remains uncontrolled for several days or even weeks as was the case for the accident of Fukushima. Indeed, the emergency phase, defined by the Emergency Plan as beginning at the *"knowledge of a danger or risk of exposure of the population"* and ending at the moment "*when the situation returns under control from a technical point of view and where any risk of deterioration and subsequent material release can reasonably be discarded*", is characterised, from the point of view of the protection of the population by measures of sheltering or preventive evacuation (before releases reach populations) and, depending on the case, stable iodine intake. The evacuation is envisaged in two cases: preventively before the passage of the releases or in a delayed way after the end of the release.

However, the experience of Fukushima shows that the emergency phase and the releases can be of long duration (several days or several weeks). A situation should therefore also be considered where extending sheltering is extremely difficult for practical reasons (beyond one or a few days) and where it is necessary to provide either a supply of essential products to people sheltered to prolong shelter, or an evacuation while the discharges are still in progress or the situation is not yet under control.

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[1] http://www.nuclear-transparency-watch.eu/activities/nuclear-emergency-preparedness-and-response/the-recommendations-of-the-belgian-superior-health-council-a-real-opportunity-to-upgrade-safety-standards.html

This plan is based on a linear and top-down view of public information which is challenged by feedback from Fukushima

The provisions for informing the population, as defined by the Emergency Plan, do not, however, take into account the possible discrediting of the authorities and institutional experts following a nuclear accident or the multiple modalities of access to information used by the population, through traditional media and via the Internet and social networks. Indeed, in the event of a nuclear accident, the national authorities will constitute only one of the multiple sources of information used by the population. In the same way a diversity of actors will be free to express themselves and will not be under the control of the authorities: independent experts, civil society organisations, authorities from foreign countries, etc., while the reliability of information provided by the authorities and institutional experts will probably be questioned in a more or less profound way. Moreover, the experience of Fukushima shows that, following a nuclear and radiological emergency, citizens and civil society quickly become producers of information and data, in particular in terms of measuring radioactivity in the environment, foodstuffs, etc.

However these realities do not in any way relieve the authorities of their duty to inform the public. Rather it should encourage them to do some in-depth thinking in the preparation phase of the response to an emergency and post–accident situation on the best conditions for providing reliable information to the population in these circumstances. This reflection cannot be carried out solely by the authorities and requires the participation of a wide range of players in the real information system (traditional and social media, independent experts and civil society organisations, etc.).

People are involved in their own protection and will not limit themselves to applying the recommendations of the authorities

The emergency plan rightly points out that the population is the "primary actor of its security". However, the emergency plan places the population, including in the post-accident phase, essentially in the position of recipient and applicator of the recommendations of the authorities.

On the one hand, this raises, even in the emergency phase, the question of the realism of the hypothesis of an obedient population confident in their authorities, in a situation where the credit of the latter will be more or less affected by the fact of the occurrence of a nuclear accident. For example, can we be certain that some people who are advocated for shelter will not opt for spontaneous evacuation?

On the other hand, beyond the few days following the accident, this raises the question of the necessary freedom of choice for people in a democratic context, which is not really taken into account in the emergency plan. Indeed, depending on their geographical, family, professional and patrimonial situation, people will be confronted with a multitude of questions and choices which cannot be solved by the simple application of the recommendations of the authorities and will result from the following considerations: Leave or stay? How to pursue a professional activity? How to feed? How to organise the displacement or the absence of displacement of the members of the family? How to continue the education of children ... Depending on each personal or family situation, the choices made by the people will be diversified. Behaviours will not be standardised. In particular, to the extent that there is no safety threshold for exposure to ionizing radiation, people are justified in seeking a higher level of protection than the intervention levels used.

Staffs transformed into nuclear workers under duress?

The Emergency Plan provides that all workers in an emergency or post-accident situation must be subject to the workers' protection regime provided by the General Regulation for the Protection of the Population, Workers and the Environment against the danger of ionizing radiation (RGPRI).

However, NTW notes, as does the Emergency Plan, that the range of workers concerned is extremely wide, including workers trained to intervene in a radiological exposure situation, but also different staffs not initially trained to intervene in this type of context: health workers, communal services (roads, police, etc.).

This raises not only the question of the training of these staffs and their control of the risks associated to situations of contamination, but also the question of the right of withdrawal of these workers, which is not addressed: can a firefighter or an employer of community services freely refuse occupational exposure and under what conditions? Or are these players de facto transformed into nuclear workers without having a say?

Public participation in the preparation phase is essential for the credibility of the EP&R scheme. The Belgian plan does not specify it sufficiently

NTW welcomes the affirmation by the Emergency Plan of the need for the participation of the public and the different stakeholders in the decisions that concern them. As stipulated in the Emergency Plan, this is necessarily modulated according to the phases of the accident, between an emergency phase where operational constraints do not allow dialogue and consultation, a transition phase where the conditions of dialogue must be restored and a post-accident phase where broad public participation in the decision-making process is necessary. NTW also notes with satisfaction that the Emergency Plan adopts a broad understanding of the concept of stakeholders, which is consistent with the perspective of the Aarhus Convention in particular.

It would, however, be desirable that, beyond the clear affirmation of the principles of information and public participation, the arrangements for information and public participation in decisions should be clarified. Better yet, they should be decided in dialogue and consultation.

In addition**, to the extent that emergency management can make little or no room for dialogue and consultation, it is essential that emergency preparedness should include and be based upon dialogue and broad and effective participation of stakeholders,** which has not been the case so far for this Emergency Plan.

A number of points addressed in greater or less detail by the Emergency Plan deserve to be the subject of an in-depth consultation with all the stakeholders, both in the preparation phase and in the post-accident phase, especially:

• Actions to protect the population (sheltering, stable iodine intake, evacuation, etc.)

• The strategy for measuring radioactivity in the environment (in preparation and in the post-accident phase), food and drinking water

• Dosimetry and medical and epidemiological monitoring of exposed populations

• Socio-economic analyses of the vulnerability of the territories carried out during the preparation, which must be carried out in an extensive consultation and whose results must be made public

• Information strategies for the population (in preparation and in the post-accident phase)

• Compensation and support schemes for persons and professionals affected by the accident and its consequences

• Stakeholders must also be involved in the strategy for the management of radioactive waste in the transition phase.

• Interaction with stakeholders is foreseen in the transition phase, but discussion with stakeholders must be initiated prior to the accident. This helps to get to know and understand each other better.

Public information obligations must be specified

NTW notes with satisfaction the repeated recall of the need to promptly and comprehensively inform people about the accident or post-accident situation, its consequences and the protection measures, in accordance with the obligations set out in the Aarhus Convention, the Nuclear Safety Directive and the BSS Directive.

However, the precise modalities of this information should be clarified in consultation with the public and civil society in order to allow effective information. Practical arrangements are missing: whether the information will be available in advance, the location where it should be, how it is provided to the citizens, the alarm concept, responsibilities, connections, alternative ways of communication, strategy for social media, etc. Who is responsible for which information? For example, the French national plan specifies that the operator only communicates on the conditions of his installation. It also outlines that the uncertainties must be explained. The Aarhus Convention is demanding: all information that can be useful should be available to the affected populations, which is difficult to implement in case of strong uncertainties.

In addition, cross-border problems are not mentioned. There does not appear to be any direct information for people of neighbouring countries.

A communication strategy for the transition phase is foreseen, but details on the implementation of the Aarhus Convention is missing and a situation of great uncertainty is not addressed.

NTW also notes that these modalities will have to be specified in other contingency planning documents, in particular those of Discipline 5 and will be careful to ensure that this work is organised in such a way as to allow real participation of the various stakeholders and including civil society actors.

The "return to a normalised situation": a leap into the unknown?

The Emergency Plan states in particular that "in the presence of a significant and sustainable residual contamination of the environment, it is not always possible, for the whole population, to guarantee compliance with the effective dose limit for the population (1 mSv per year) ". This is another way of saying that a return to normality is not always possible. NTW welcomes this realism. However, on the basis of this realistic basis, the Emergency Plan shows a certain ambiguity about what can constitute an absence of return to normality, calling the alternative a "return to a normalised situation".

Beyond the paradox of the idea of a "return" to a situation that will be totally new, the notion of "return to a normalised situation" is problematic. On the one hand, the Emergency Plan refrains from defining what it means by a "normalised situation". Is this a situation where it is sufficient to apply new standards (which will not be the same as those prevailing in the rest of the country)? Experiences of the populations of the Chernobyl and Fukushima-contaminated territories show that the enactment of new public norms (even through a decision-making process including public participation) is not sufficient in a permanently contaminated territory to rebuild the conditions of " a life worth living and worthy". What return is desired? There is a big difference between Chernobyl where vast territories have been sacrificed and Japan where the government wants to reclaim all the territories (which is not without problems: populations who do not want to return, no storage place for the 22 million cubic meters of expected waste).

Has Belgium already decided between these two approaches? It is a genuine reinvention of the living conditions that only people and the actors of the territory who decide to continue their life or activity in the territory are able to carry out, with the indispensable support of the authorities and the National community (as required by the United Nations Guiding Principles on Internal Displacement). The question of the conditions for such support and solidarity is not addressed in the

Plan.

On the other hand, the notion of a "normalised situation", which opposes both a normal situation and a situation where public authorities prohibit living in the territory concerned, raises the question of the freedom of choice of persons in law and in fact. Once living conditions in a territory no longer provide the same guarantees as in the rest of the territory, people must have the choice of reconstructing their lives either elsewhere or in their territory of origin. This choice depends not only on individual and family situations but also on the choices made by other actors in the territory, which determine the possibility or not of rebuilding a social life and access to the infrastructure, goods and services necessary for life.

This presupposes, in particular, conditions of compensation and economic and financial support allowing a real freedom of choice, as well as an equitable compensation system. Again, the Emergency Plan does not address this issue.

Measures concerning the protection of the population are not precise

The Emergency Plan foresees a return to a level below 1mSv/year, without proposing a timetable. In the United States for example, the plan provides 20mSv in the first year, 5mSv/year from the second year so as to remain below the 50mSv limit over 50 years. Limits on cumulative doses are needed. Specific levels for children should be specified. 100mSv during the transition phase is an important dose, especially for children. They may be eligible for lower reference levels.

Then, the plan calls for an evacuation to start at 50mSv, but it indicates a reference value for the emergency phase up to 100mSv.

Guide levels for the protection of the population are not complete. Other guide levels (iodine, evacuation, shelter, etc.) are not included.

With regard to sheltering, the Plan considers that houses and buildings offer sufficient protection. However, some buildings are not suitable for sheltering such as those made of wood or metal walls. This is the case in many supermarkets for example. What to do in this case? In addition, how far should the shelter be prepared? It is necessary to inform the population beforehand.

The Emergency Plan foresees that a return home is permitted as soon as the estimated exposure dose to the most sensitive individuals (children and pregnant women) is less than 20mSv/year. But this limit is very high and will probably not be respected as in Japan. 20 mSv/year is too high for children and pregnant women.

Management by the food standard is not enough

Concerning foodstuffs, the Emergency Plan sets out, by type of foodstuff, the levels of contamination beyond which the products cannot be marketed. This raises the question of consumer information, their freedom of choice and the actual behaviour of markets.

Consumers are entitled to choose whether or not to consume contaminated products, even if they comply with European standards. In the event of insufficient traceability of the products, it is highly likely that consumers wishing to protect themselves will stop consuming products from the area concerned (region, even country). How to ensure real freedom of choice for the consumer? The Emergency Plan does not address the issue.

From the producer's point of view, making products legally marketable does not guarantee that they are actually marketable in fact. What will be the possibilities of compensation for the real economic loss suffered by the producers, again the issue is overlooked. NTW recalls, for example, that the SOCATRI accident in France, despite the very low intensity of contamination, has caused significant harm to the wine producers in the region. The AOC Coteaux du Tricastin had to be abandoned purely and simply by the producers.