

**Convention on Nuclear Safety**  
**Questions Posted To Luxembourg in 2017**

No.	Country	Article	Ref. in National Report	Question	Answer	Support Documents
1	Iceland	General	Introduction (p. 5)	Iceland thanks Luxembourg for a thorough and well structured National Report. In particular, Iceland welcomes and identifies with the positive stance taken in the introduction where Luxembourg reports: "Luxembourg considers the CNS [peer] review as a highly valuable exercise. It allows for a small country with limited nuclear expertise to gain insight to relevant safety issues in other countries. Besides the aspect of being reviewed, having frank and open discussions with qualified experts while profiting from constructive inearly cost-free advice is extremely useful.	Thank you for this kind comment.	
2	Bulgaria	Article 7.1	page 11, Art. 7 (1a)	It is stated that in the context of the transposition EU-BSS Directive and the amended Nuclear safety Directive (EU-NSD), the DRP works on a complete revision of the framework law of 1963. The provision of the new law will update and strengthen all provisions concerning radiation protection, nuclear safety and radioactive waste management. Please explain to what extent the IAEA safety standards in the area of emergency preparedness and	The new draft law attributes main roles and responsibilities, including overall criteria, such as reference levels, as requested by the directive 2013/59/EURATOM. More detailed provisions will be part of a decree. Concerning of GSR Part 7, some requirements related to the preparedness of category III and IV facilities have been used for drafting this decree. However a complete assessment GSR Part 7 against the existing emergency provisions has not yet been scheduled.	

				response will be taken into account in the new law, in view of the preparation for the upcoming IRRS mission in 2018.		
3	Indonesia	Article 7.1	Section A	Please describe the clauses stated in bilateral agreement with your NPP neighboring countries regarding civil nuclear liability?	The bilateral agreements do not comprise any clauses regarding civil nuclear liability.	
4	United States of America	Article 7.1	General	Luxembourg is revising the law framework to reflect the amended nuclear safety directive. The adoption in the parliament is scheduled for the second half of 2017. Because of the deadline for submitting the CNS report, it was not possible to report on the provisions and changes proposed. If the information is available, please provide the status of this activity.	The council of government has adopted the new draft law on 14th December 2016. Following that, a consultation process with relevant stakeholders has been launched on 16th January 2017. This consultation process will lead to a revised draft law to be submitted, probably early summer, to the parliament. Above a draft decree is in preparation to complete the legal provisions. With regard to the nuclear safety directive, the draft law has foreseen the following main provisions: a) Developing and maintaining competence for nuclear safety within the RB by means of international cooperation and staff training; b) Inviting every 10 years for an IRRS mission and publication of its results; c) Participation by the RB in the process of the topical peer reviews and in IRRS missions in other countries.	
5	United States of America	Article 7.1	Bilateral arrangements	The report makes mention of bilateral cooperation agreements with certain neighboring countries (i.e., France and Belgium). Please clarify: (1) Do you have a bilateral cooperation agreement with Germany? (2) Do you host emergency drills with all your neighboring countries, including Germany?	There is indeed no bilateral cooperation agreement with Germany on nuclear safety and radiation protection. However frequent exchanges exist with the relevant authorities in the two federal states close to our border and with the German RB at national level. This includes the participation of Luxembourg and Germany at emergency drills at the French NPP Cattenom. Organizing and running of the exercise is done with the involvement of all 3 countries. More information on such cooperation can be found in our previous national report on pages 25 to 26. It is however worth to mention that the implementation	

					of the HERCA-WENRA approach will lead to further analyzing cooperation mechanisms; "Would it be beneficial (and realistic to achieve) to have a multilateral arrangement between France, Germany and Luxembourg or several bilateral arrangements between these 3 countries?"	
6	Indonesia	Article 7.2.1	Section B	According to your regulation, please describe the time frame for licensing process and the licensing fee arrangement?	In the present legislation, the licensing process for a new license for holders of radiation sources can take up to 205 days. No fees apply.	
7	Czech Republic	Article 7.2.3	p. 14	Does the Minister of Health, who is responsible for the licensing procedure of a new nuclear installation, have some experts in nuclear engineering and nuclear safety?	As it is stated on page 17 of the national report "The DRP is composed of 9 agents with master degree, including 4 with PhD, specialized in radiation protection (1), medical physics (2), nuclear physics and engineering (2), physics (1), geology (1), biology (1) and chemistry (1)." This is clearly not sufficient for a licensing procedure of a new nuclear installation". On the other hand, it is very unlikely that the Government would accept any nuclear installation. The new draft law also contains a provision to forbid nuclear installations, as defined by directive 2009/71/EURATOM, in Luxembourg. Should energy policies once change, the Government would need to set up appropriate legislation and ensure the staffing of the RB accordingly.	
8	United Kingdom	Article 7.2.4	page 15	The report states that the inspectors of the Department of Radiation Protection (DRP) are entitled to impose appropriate measures in case of non-conformity. The report does not go on to describe these measures. Please provide a description of the measures that inspectors are entitled to impose in the case of non-conformity?	The present legal framework does indeed not specify these measures. In practice inspectors have though imposed measures, often of minor importance, such as improving signalization, up to even temporarily closing a service. Licensees have always responded to these instructions and never legally challenged them. If challenged, however, the only possibility would be to report to the prosecutor. The new draft law contains more detailed provisions on: a) the inspector, who can impose the remediation of a non-conformity in a timeframe set by the inspector, b) administrative	

					sanctions by the minister, ranging from changing license conditions up to closing a facility.	
9	United Kingdom	Article 8.1	page 17	The report explains that The Department of Radiation Protection (DRP) is composed of 9 agents. It highlights their level of education but does not give any information on their level of experience. Please explain how you ensure that the experience of the DRP agents is suitable for their roles.	The means for maintaining competence at the RB are described on the same page of the national report in the two paragraphs that follow the paragraph you mention in your question. It can be added that the new draft law contains provisions that further promote professional international exchanges as means of capacity building. Given the size of the RB, every agent has its own international network of contacts with people working on the same subjects. As practical example, we can mention the cooperation with France and Belgium during the European week of inspection of medical justification in November 2016, with cross participation in inspections.	
10	Czech Republic	Article 16.1	p. 24	Emergency Intervention Plan in case of a Nuclear Accident Who is responsible for preparing the plan? What is the assumption of the review of the plan? How will the plan be put into practice?	(1) The High Commission of National Protection (HCPN) is the national agency under the Prime Minister, responsible for the coordination of all national emergency plans in Luxembourg. The coordination task force led by the HCPN is charged with preparing or reviewing the emergency response plan in case of a nuclear accident. This task force is composed of the HCPN, the DRP, the rescue services agency and the government crisis communication office. The later one has been created after the adoption of the new plan. Before the government press office participated in the task force. All other relevant administrations and ministries contribute. They elaborate operational procedures relevant to their missions, participate in subgroups and introduce comments to the draft emergency plan throughout its elaboration.  (2) The main assumptions of the plan are two scenarios at the French NPP Cattenom: a fast kinetic scenario with smaller source term and a low kinetic scenario with larger source term (core melt with	

					<p>filtered venting). However, the accident in Fukushima showed that the possibility of a more severe accident couldn't be completely ruled out, albeit its probability is very low and has even been lowered by the implementation post-Fukushima back-fittings. Therefore the new plan does not comprehensively plan for such an event but adapted several provisions in order to take such major scenarios into account. For example, we have pre-distributed iodine tablets to all households for the full country. Those could be taken on short notice. We have also stated not to evacuate under the plume and we have even reduced our evacuation-planning zone from 25 to 15 km. On our territory, this zone goes from 10 to 15 km and has a population of 60.000, which is 10% of the total population. Obviously, in case of filtered venting, evacuation above 10 km is most probably not needed. In the unlikely case of unfiltered releases (loss of containment), however 15 km could be not enough. It is our strategy (not planned) to extend evacuation after the release beyond the planning zone.</p> <p>(3) As soon as the Luxembourg Emergency Call Centre (112) is informed of a nuclear accident, it alerts the Radiological Evaluation Cell (chaired by the DRP), which immediately carries out an evaluation of the information available. If the accident could pose a danger to the population, the High Commissioner for National Protection is informed. After consulting with the Rescue Services Agency and the DRP, the High Commissioner for National Protection informs the Prime Minister and Minister of State who decides whether to activate the Crisis Cell. The Crisis Cell initiates, coordinates and monitors the execution of all the measures intended to deal with the crisis and its effects. It is assisted by the Radiological Evaluation Cell and the Communication/Information Cell and works closely with its</p>	
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					foreign counterparts.	
11	Czech Republic	Article 16.1	p. 28	<p>Exercises ñYou wrote that ASS and DRP regularly organize national exercises. And in the same paragraph you wrote that the authorities have organized twice per year small-scale national exercises. How often is the national exercise organized? Who are the participants of the national exercise and small-scale national exercises?</p>	<p>Please find some more details on such exercises that have taken place in recent years:</p> <p>a) Trilateral exercises focused on a nuclear emergency at the Cattenom NPP, involving the two German federal States, Sarreland and Rhineland-Palatinate, Luxembourg and France have taken place on the 8 and 9 April 2010, during 2 days the last week of June 2012, the 5 to 6 December 2012 and 4 days in June 2013. The next exercise of this kind will be in October 2017.</p> <p>b) A larger scale common exercise with deployment of the French, Belgian and Luxembourgish decontamination chain and approximately 200 participants was hold from the 8th to 10th October 2010 in Luxembourg.</p> <p>c) An exercise for field measurements was held on 25 September with Luxembourgish, German and French first responders in the border area of the free countries.</p> <p>d) In September 2014, the EU-Modular Field Exercise CBRN involving 8 nations took place in Luxembourg. The objectives of this exercise were to respond to CBRN events while integrating stakeholders from other countries, called for international assistance. The DRP with the special unit "Radiation protection" of the ASS were involved.</p> <p>e) In October 2015, the DRP held together with the army and the civil protection an exercise on radiological screening of persons.</p> <p>f) During the nuclear emergency exercise in Tihange (Belgium), that took place in November 2016, we have participated with a partial activation of our radiological evaluation cell for testing information exchange.</p> <p>The small-scale one-day national exercises always take place once in May and once in September. They always involve the DRP and the special unit "Radiation protection" of the ASS (approx. 20 people). In 2009 and in 2016, the laboratory of</p>	

					the DRP held a one-day emergency exercise, testing its capacities under emergency conditions.	
12	Singapore	Article 16.1	Page 28	It is stated that Luxembourg participates in trilateral nuclear power plant emergency exercises every three years between two German States (Sarreland and Rhineland-Palatinate), Luxembourg and France. Are members of the public in the 3 countries involved in these exercises? Are these exercises open to observers from regulatory and response authorities of other countries?	We can only answer the question with regard to our situation in Luxembourg. We have not yet involved members of the public in these exercises. There is however more openness towards inviting observers from other countries. In 2012, we had observers from the French regulatory body ASN, and an observer from the European Commission in 2010. It is though worth to note that language is an obstacle for observers, since the language spoken in the crisis center is Luxembourgish, a language that is not widely known in other countries.	
13	Singapore	Article 16.1	Page 26	It is stated that in Luxembourg's new emergency intervention plan in case of a nuclear accident, that preventive distribution of potassium iodide (KI) tablets to all residents of the country has been organised. Is pre-screening of members of the public performed prior to this distribution?	The pre-distribution has not been subject to any condition. Every citizen has been invited to pick up its blister on iodide tablets at the indicated distribution points. Citizens have been informed on the potential risks and contraindications, such as the following: Anyone can take potassium iodide tablets. However, any child or adult suffering from the following illnesses or allergies is strongly discouraged from taking them: Hypersensitivity to iodine (a rare form of allergy that should not be confused with the more common allergy to the contrast products used for X-rays); Dermatitis herpetiformis (also known as Duhring's disease): a chronic skin condition characterised by the formation of blisters that resemble those of herpes, a rash and severe itching; Hypersensitivity or allergic vasculitis: an allergic inflammation of the vessels; Congenital myotonia (a genetic muscular illness); Pemphigus vulgaris (a cutaneous illness). For anyone who has had their thyroid completely removed, iodide tablets are of no use. It is nevertheless advisable to check with the doctor to find out whether the whole thyroid gland has indeed been removed. In the event of only	

					<p>partial removal, iodide tablets have some use and therefore should be taken in the event of a nuclear accident.</p> <p>People with thyroid dysfunction, asthma, heart failure, renal impairment or auto-immune illnesses should consult their doctor before taking iodide tablets.</p> <p>For adults over the age of 45 the potential risks of taking stable iodine tablets can outweigh the potential benefits. Stable iodine is therefore not recommended in large quantities from this age.</p> <p>There is no immediate danger however if someone over the age of 45 accidentally takes an iodide tablet.</p>	
14	Bosnia and Herzegovina	Article 16.3	Page 29	<p>1.1. In the paragraph 16 (3a) you have written: Luxembourg does not perform an own situation assessment, neither an own radiological prognosis but has concluded agreements with France for sharing their assessments. All exercises have indeed shown a high degree of uncertainty and margins of interpretation. Assessments done by 2 countries thus always result in decisions for protective actions that are inconsistent along borderlines. Could you say that the general public is satisfied with this approach? Additionally, have you received any request to organize your own radiological prognosis, maybe through <a href="http://www.radioprotection.lu">www.radioprotection.lu</a> or during past work of Ministry of Health's press offices?</p> <p>1.2. Is the publication "What to do in the event of a nuclear alert" available outside of Luxembourg?</p>	<p>To your first question: We have presented our approach in several occasions to environmental groups, that are opposed to nuclear power and also probably the most critical fraction of the population with regard to nuclear emergency preparedness and those groups have so far never questioned this approach, neither has anybody else from the public. We have highlighted that even though, we could do a dispersion modeling, we would not have the technical capacity and the necessary parameters available to assess the status of the reactor. For projected sources terms and probable time of release, we would in any case need to rely on information from the country where the accident happens. Since the two latter factors have a far higher influence on the extent of protective actions, why should we then not also trust the dispersion modeling. We have also highlighted that these assessments are done by the regulatory bodies and their TSOs, that are independent from operators. Their role is to protect the population, not the nuclear industry. While we understand your question in the way that it is indeed sometimes difficult to explain such processes to public. We, as regulatory body, should therefore also clearly state, that we know how our counterpart is in</p>	



				Especially the one in Braille?	<p>neighboring countries work and that we can trust that they do it to their best knowledge.</p> <p>Concerning our publication "What to do in the event of a nuclear alert?", the English, French, German, Luxembourgish, Portuguese and German-Easy Language versions can be downloaded freely from the webpage:  <a href="https://www.infocrise.lu/en/nuclear-emergency-publications">https://www.infocrise.lu/en/nuclear-emergency-publications</a>. The audio version can be listened to on the same webpage and a phone-number is given for ordering the one in Braille. The latter one has been made for citizens in Luxembourg, while the office of crisis communication may also accept requests from abroad.</p>	
15	United States of America	Article 16.3	HERCA	<p>The issuance of the HERCA-WENRA approach is a significant milestone and should be considered an area of good performance. In this regard, Luxembourg self-identified the implementation of the approach as a continuing challenge.</p> <p>(1) In your opinion, what are the most challenging implementation areas?</p> <p>(2) Expand on your plans to address these challenges.</p>	<p>It is true that the development has been and implementation of the HWA will be a long journey, with many difficulties to overcome. The most challenging areas that we see are the following:</p> <p>TRUST: This means the trust between the authorities! The one who receives the information needs to trust that it is based on the best intentions. This means that it is as fast as possible exchanged, as complete as possible and factually correct to the best knowledge. The one who gives the information needs to trust it is used with the best intentions. This means that the receiving country does not try to get an advantage over the info-giving country, such as publishing it before it is free for publication, or decide protective actions unilaterally. We believe that the work on the HWA, the fact that European Regulatory Bodies for nuclear and/or radiation safety closely cooperate through ENSREG, WENRA, HERCA and bilaterally, has already helped to build such trust in many cases, including between our neighboring countries and ourselves. However nuclear emergency preparedness involves other authorities. In particular decision takers have not been involved in the development</p>	

					<p>of the HWA. It will nevertheless be essential that the same trustful information exchange take place between decision takers.</p> <p>ATTITUDE: The HWA is a soft (incentive) mechanism. It needs a decision taker who puts the interests of the whole affected area over the sole interests of its own territory, or at least at the same level. Decision takers in each country will have to take an attitude towards managing the crisis together in the common interest of all of them. At present exercises often show that other interests, such as political or economical, influence decisions. During exercises a unilateral decision does not have a real negative effect. In a real case however, the negative effect might be dramatic, dramatic for everybody.</p> <p>FLEXIBILITY: Emergency plans have in the past mostly been drawn rather rigidly, giving the expertise body and the decision taking body highest legal certainty. Simplified it means that you assess according to prescribed methods and you decide according to fixed intervention levels or triggers. If more than one country is concerned, this inevitably leads to differences in response. In contrast, the HWA asks for a crisis management able to find compromises during the response to a nuclear emergency. Legally and politically, it seems difficult in several countries to grant such flexibilities to crisis managers.</p> <p>The implementation will need to be done together with our neighboring states. We therefor envisage to start with a seminar as explained in the report. We hope to convince our partners in the regions for setting up a task force charged with the implementation. We hope that more regular meeting will help to increase the trust, to develop positive attitudes and to convince that flexibility is essential. The task force should work on operational issues. An example is the setting up of videoconferences between the crisis centers. Such conferences are only useful if well prepared and</p>	
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					highly focused. Otherwise there will be monologues and repetitions of information that has already been exchanged in written form. While implementing, we will also need to look at other regions in Europe that do the same implementation exercise in order to learn from each other. Finally we have to continue testing the HWA during exercises, and using lessons learned.	
16	Czech Republic	Article 17.3	p. 5	<p>The French NPP "Cattenom" is located only 8.5 km from the border. How is the continuous evaluation of the site carried out in terms of geology, tectonic and seismic activity, hydrogeology, etc., when the reconnaissance area extends to territory in your country?</p> <p>Is a joint survey carried out?</p> <p>Do you have common transboundary groundwater collectors in this area?</p>	<p>The continuous evaluation of the Cattenom site in terms of geology, tectonic and seismic activity and hydrogeology falls under the responsibility of France. We monitor radioactivity in the air (including one station in France) on water (groundwater and surface water) other samples (soil, feed and foodstuff, etc) and do exchange these results with the French ASN, respectively IRSN.</p>	