Since the 2014 Nuclear Security Summit, Belgium has strengthened nuclear security implementation and built up the global nuclear security architecture by[1]…

STRENGTHENING NUCLEAR & OTHER RADIOACTIVE MATERIAL SECURITY

A.- NATIONAL NUCLEAR MATERIAL SECURITY REGIME

a) LEGAL & REGULATORY FRAMEWORK- LICENSING

Belgium strengthened and updated its legal and regulatory framework regarding physical protection a few years ago. This enhanced legal and regulatory framework necessitates the restructuring of the physical protection systems of the nuclear facilities. This restructuring process will be finalized in the coming months. It is being monitored by the Federal Agency for Nuclear Control (FANC), which is an independent public agency responsible for nuclear safety and security, radiation safety and for many aspects related to nuclear safeguards.

b) IPPAS (International Physical Protection Advisory Service)

An IPPAS mission took place in Belgium in November 2014. According to its findings, the national physical protection regime is a robust one, but there is room for some improvements. The Belgian authorities responsible for nuclear security are currently working towards the implementation of the IPPAS report.

c) CRITICAL INFRASTRUCTURES

In the framework of the protection of critical infrastructures, the Belgian authorities are continuously improving the security of the Belgian nuclear power plants, including the parts dedicated to the transmission of electricity.

d) THREAT- TRUSTWORTHINESS

DESIGN BASIS THREAT (DBT)
Belgium's Coordination Unit for Threat Analysis (CUTA) and the FANC have pooled their activities to establish the **Design Basis Threat** for the nuclear sector nationwide. In particular, thanks to a fruitful collaboration with the stakeholders, the specific reference threat for each nuclear operator has been established. The Belgian authorities are currently revising the DBT in function of the changing threat environment.

**INSIDER THREAT & TRUSTWORTHINESS**

The Belgian authorities are currently assessing how to strengthen the legal and regulatory framework regarding *vetting and trustworthiness*, and how to extend its scope. Moreover, the nuclear operators have implemented specific programmes aiming at increasing the vigilance with regards to trustworthiness. This vigilance towards the insider threat relates not only to the nuclear security areas, but also to the non-nuclear areas of the nuclear installations.

Regarding the security of radioactive materials, the insider threat issue is already taken into account in a concrete manner, as illustrated (see point B)) by the practical aspects of the recent training organised jointly with the IAEA.

e) RESPONSE

The restructuring process of the national physical protection regime calls for strengthened and improved *response capabilities* in case of a nuclear security incident. At the Seoul Nuclear Security Summit in 2012, Belgium stated its determination to accomplish this task which requires the cooperation and efforts of all involved parties. One of the main achievements in this regard is the recent decision by the Government to establish a new General Directorate “Surveillance and Protection”, within the Federal Police. This Directorate will be tasked with the protection of the critical infrastructures and the nuclear facilities. In the interim period, the military forces ensure this protection.

As a follow-up to the IPPAS mission, reflection is currently underway to extend the powers and competencies of private security guards, notably with a view to improve their equipment for self-protection, to improve the synergies with the intervention forces and to better take into account the specificities of sensitive activities.
B.- NATIONAL RADIOLOGICAL MATERIAL SECURITY REGIME

Belgium underscores the need to protect all radioactive materials which are not nuclear materials by taking into account their potential danger and their attractiveness for criminals or terrorists. In this perspective, the relevant Belgian authorities are updating the legal and regulatory framework, in order to strengthen both safety and security of radioactive materials, notably by duly taking into account the nexus between them.

Two achievements are worth mentioning in this regard. First, **the FANC has organized a workshop** aimed at raising awareness of the threat posed by these materials and of their potential attractiveness for criminals and terrorists. Second, **Belgium and the IAEA have jointly organized a national training course** related to the protection of radioactive materials, which took place from 15 to 19 February 2016. This training course for the main operators and carriers has effectively reinforced the good cooperation with these stakeholders.

C.- CYBER SECURITY

For several years, international as well as national efforts focused on strengthening the physical protection systems of nuclear facilities. However, given the numerous cyber-attacks against governments and industries, cybersecurity is now a top priority both at the international and the national level. This is why the relevant Belgian authorities have initiated a process aimed at identifying the principal features of potential cyber-attacks against the nuclear sector. This has allowed the identification of the specific threats and risks against our nuclear facilities.

The **Cyber Security Centre** for Belgium, under the authority of the Prime Minister, was established in 2015.

As far as the regulatory framework is concerned, it should be mentioned that in line with the existing regulations (in particular the Royal Decree of 17 October 2011 regarding the categorisation and the protection of nuclear-related documents), the nuclear operators must protect all sensitive information, whatever medium is being used. As a consequence, they have to protect any piece of information in digitalised form on networks or other electronic systems.
Belgium voluntarily extended the scope of the “stress-tests”, set up after the Fukushima accident, to include man-made events, such as cyber-attacks. These stress-tests provided valuable insights, but they gave only a kind of snapshot. Given the rapidly and constantly evolving situation, a continuous monitoring is indispensable and this mind-set is fostered in all nuclear facilities of the country.

The FANC pays heed to the global recommendations of the IAEA in the field of cybersecurity. The FANC is also committed to the exchange of information with foreign authorities in order to share good cybersecurity practices.

Finally, the Cybersecurity Centre and the FANC are examining what kind of initiatives Belgium should take in order to optimize its cybersecurity and to reinforce the international cooperation in this field.

II.- …MINIMIZING NUCLEAR & OTHER RADIOACTIVE MATERIALS

Belgium subscribes to the objective to eliminate in time, when economically and technically feasible, the use of highly enriched uranium for civilian purposes.

Belgium actively works towards the timely conversion, subject to regulatory approval, of the research reactor BR2 of the Nuclear Research Centre (SCK•CEN) to low enriched uranium, as soon as an appropriate high density fuel has been qualified for this purpose. The SCK•CEN is participating in numerous irradiation experiments for the qualification of the high density LEU fuel, not only for its own reactor, but also for foreign research reactors. As such, the SCK•CEN takes the lead in a broad international cooperation.

Belgium also works towards the timely conversion, subject to regulatory approval, of the processing facility of the National Institute for Radioelements (IRE) for medical radioisotopes to low enriched uranium. This conversion program is very advanced and runs on schedule. IRE is regularly communicating with the appropriate US authorities on the progress of this project.
Belgium plans to continue its collaboration with interested European countries and the United States to eliminate additional stocks of excess special nuclear materials, consistent with their commitment to prevent nuclear terrorism.

III.- ...COUNTERING NUCLEAR SMUGGLING

Belgium participates in the Megaports Initiative aimed at enhancing the detection capabilities for special nuclear and other radioactive materials in containerized cargo transiting the global maritime shipping network.

IV.- ...SUPPORTING MULTILATERAL INSTRUMENTS

Belgium deposited its instrument of ratification of the 2005 Amendment to the Convention on the Physical Protection of Nuclear Material (CPPNM) on 22 January 2013. Although the 2005 Amendment has yet to enter into force, the Belgian national legislation, regulations and policies have already been adapted to fully comply with the amended CPPNM.

Belgium ratified the International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT) on 2 October 2009. Through the implementation law of 23 May 2013, intrusion or attempted intrusion into the security areas of the Belgian nuclear sites constitutes a criminal offence.

V.- COLLABORATING WITH INTERNATIONAL ORGANIZATIONS

A.- CONTRIBUTION TO THE IAEA’S NUCLEAR SECURITY-RELATED ACTIVITIES

Belgium actively supports the IAEA’s nuclear security initiatives, and Belgian experts contribute to many of these activities. For instance, Belgium actively participates in the process of developing documents in the IAEA's Nuclear Security Series, notably in the Nuclear Security Guidance Committee; Belgian experts have participated in IPPAS missions in other States; Belgium also shares information on the illicit trafficking of nuclear and radiological materials by participating in the IAEA Incident and Trafficking Database.
In addition, since the 2010 Washington NSS, Belgium has contributed 300,000 USD annually to the IAEA Nuclear Security Fund. The same contribution is scheduled for 2016. This will bring the total amount of Belgian voluntary contributions to this Fund since 2010 to more than two million USD.

B. - SUPPORT FOR OTHER NUCLEAR SECURITY-RELATED INTERNATIONAL INITIATIVES

The Belgian Nuclear Research Centre SCK CEN and the national Institute for Radioelements (IRE) have collaborated with the Comprehensive Nuclear-Test-Ban Treaty Organisation (CTBTO), US and European organisations to examine how medical isotope production facilities influence Treaty related noble gas analysis and to help develop an understanding of the global radioxenon inventory.

The SCK-CEN, together with the FANC and the Royal Meteorological Institute (KMI/IRM), has become a national data centre within the International Monitoring System (IMS) of the CTBTO.

Belgium is a partner country in the Global Partnership against the Spread of Weapons and Materials of Mass Destruction and also participates in the Global Initiative to Combat Nuclear Terrorism.

Belgium is committed to the full implementation of Security Council Resolution 1540 and has fulfilled its national reporting obligations in this regard.

Belgium recognizes the important role ENSRA (European Nuclear Security Regulators’ Association) plays as a forum for exchange on nuclear security regulatory matters, aiming notably at achieving or promoting, as far as practicable, a common approach of nuclear security practices. The FANC is one of the founders of this forum, and intensively participates in its activities.

VI.- PARTNERING WITH EXTERNAL STAKEHOLDERS

The policy of the Belgian nuclear security authorities is to consult and to collaborate to the greatest possible extent with the stakeholders. Outreach efforts were undertaken during the process of reinforcing the physical protection regulatory framework. Such outreach is also taking place during
the current process of enhancing the security of radioactive materials. The national training course on the physical protection of radioactive materials, jointly organized by Belgium and the IAEA in February 2016, illustrated the close cooperation with the stakeholders.

ANNEX: LIST OF THE JOINT STATEMENTS/GIFT BASKETS BELGIUM JOINED

1. Multilateral Cooperation on High-Density Low-Enriched Uranium Fuel Development for High-Performance Research Reactors

2. Strengthening the Security of High Activity Sealed Radioactive Sources (HASS)

3. Sustaining Action to Strengthen Global Nuclear Security

4. Mitigating Insider Threats

5. Sustainability in Reporting and Information Sharing

6. Increasing Cyber Security of Industrial Control and Plant Systems at Nuclear Facilities


[1] As one of the subscribing states to IAEA Information Circular (INFCIRC) 869, some of the accomplishments mentioned in this report are directly associated with the additional commitments described in this Information Circular.