

## Radiation Protection Instruction for ENRICH 2017

### 1. Introduction

When handling encased radioactive substances, the participants of the ENRICH 2017 "Exercise: Nuclear power plant accident" (Locating of radioactive areas with hotspots of radioactive material, -detection, -measuring and marking in a digital map), may be exposed to  $\gamma$  radiation.

The objective of this Radiation Protection Instruction is to keep the chance of radiation exposure as low as possible by issuing respective regulations.

### 2. Legal Basis

This Radiation Protection Instruction takes into account the provisions of sections 4, 14, 16, 17, 18, 19, 25, 30 and 31 of the *General Radiation Protection Directive*, the *Radiation Protection Act*, and the stipulations of the notices of approval, issued by the competent provincial governments.

### 3. Scope of Applicability

This Radiation Protection Instruction is applicable to the handling of encased radioactive substances used in the course of ENRICH 2017.

All persons active in this area have to follow this Radiation Protection Instruction and the instructions issued by the radiation protection officer and his proxies.

### 4. Approval

Through the notices of approval of the provincial governments of LOWER AUSTRIA (KRW2-BA-0943/001), STYRIA (A23-002867/2010-0005), TYROL (1f-STR-ra-1013/6) and UPPER AUSTRIA (US-491145/2-2009-Spe/Ho), the handling of encased radioactive substances has been authorised.

### 5. Radiation Protection Supervising Organisation

The office in charge of the tasks of radiation protection is the Armament and Defence Technology Agency/NBC Defence and Environmental Protection Technology Department (ARWT/ABCUT).

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Radiation protection officers:

- |   |                    |                       |
|---|--------------------|-----------------------|
| 1. Proxy: KELLERMANN Daniel   | ARWT/ABCUT         |                       |
| 2. Proxy: BALOUN Robert   | ARWT/ABCUT         |                       |
| 3. Further personnel responsible for radiation protection and radiation protection officers in charge of their respective organisational element: |                    |                       |
| WO II   | GUBA Josef         | NBCDEF COY/7 HQBN     |
| WO III  | DVORAK Erwin       | NBCDEF COY/3 MECHHQBN |
| WO III  | STEINKELLNER Ernst | NBCDEF COY/3 MECHHQBN |
| WO I  | HEUBACHER Anton    | NBCDEF COY/6HQBN      |

## 6. Access Regulation:

The participants of the ENRICH 2017, "Exercise: Nuclear power plant accident" may enter the control area only in exceptional cases, e.g. if a robot gets out of control, a defect occurs, or in the event of any other breakdown, accompanied by a radiation protection officer or a person entrusted with radiation protection. Before entering the control area, the radiation protection officer or the person entrusted with radiation protection has to deposit the radioactive substances in their transportation and storage containers with the help of suitable distance tools to keep the dose as small as possible.

Adolescents, as well as pregnant and breast-feeding women are prohibited from entering the control area.

## 7. Instruction

Before starting, every person participating in the exercise with radioactive substances has to be instructed on the work methods, the possible dangers, and the safety and protection measures to be applied.

The Radiation Protection Instruction and the supplementary exercise manual are also part of the instruction. The instruction is available on the internet: <http://hackathon.european-robotics.eu> . The instructor will keep records regarding the contents and the date/time of the briefing, and every person instructed has to sign off on the record when the dosimeters are handed out.

1. Exercise participants may enter the control area only after the radioactive substances have been locked away by the radiation protection supervising organisation.
2. Radioactive substances may only be handled with a suitable distance tool.
3. Participants of the radiation protection exercise are obligated to carry a thermoluminescence dosimeter (TLD) and an electronic personal dosimeter (EPD) for the duration of the exercise.
4. The dosimeters are to be returned to the Radiation Protection Supervising Organisation at the end of the exercise, and, from then on, participants may only stay outside the marked restricted locations
5. The instructions issued by the Radiation Protection Supervising Organisation are to be followed at all times.
6. The Radiation Protection Supervising Organisation will be present at all times when radioactive substances are removed from their respective transport and storage containers (from the entrance doors, which are not locked up, until the reactor plateau / exercise location H39m), with one member being in the middle of each of the four sides of the building and marked by an orange flashing light.
7. Remaining in the control area for no reason is prohibited.
8. In the event of imminent danger the Radiation Protection Supervising Organisation may break off the exercise without stating the cause.
9. The exercise participants have to register in the dosimeter list on the internet, to be found at <http://hackathon.european-robotics.eu>. Should additional personnel participate in the competition, they may still be entered into the dosimeter list on the first day of ENRICH 2017.
10. The participants, by signing off on the first day of the event before the exercise starts, confirm that they understand the instructions.

The dosimeter number will be entered by the Radiation Protection Supervising Organisation when the device is handed out.

11. Persons not listed in the dosimeter list will be refused entry to the exercise location.

## **8. Medical Supervision**

Service personnel working in the Radiation Protection Supervising Organisation has to present, corresponding to his employment as a person exposed to radiation, a valid medical certificate concerning physical fitness in accordance with the Radiation Protection Directive, Federal Law Gazette No191/2006 (4. passage medical examination).

## **9. Other**

The radiation sources as well as transportation, transport assets, and marking of sources in the depot of TRITOLWERK and AKW-ZWENTENDORF will be organized and executed by ABCAbwKp/StbB7 (2 pcs. CO<sub>60</sub> source), ABCAbwKp/PzStbB3 (1 piece CO<sub>60</sub> source), ABCAbwKp/StbB6 (1 piece CO<sub>60</sub> source) and ABCAbwKp/PzStbB4 (1 piece CO<sub>60</sub> source).

## **General Radiation Protection Directive**

### **Requirements for Control and Supervision Areas**

Section 18 The following requirements apply to the control area:

(3) In the event of mobile radiation sources, the holder of the licence has to ensure that the limits of the control and supervision areas established in the approval procedure are heeded, and that the required measures are maintained in accordance with paragraphs (1) and (2).

(1) The control area is to be delimited and marked as such with the radiation warning symbol and the additional information as per Annex 3.

(2) Access is to be limited to those persons that have received the respective instructions. Access controls are to be conducted in accordance with the procedures laid down in writing by the holder of the licence. If required, technical measurement devices to prevent the dispersion of radioactive contamination are to be installed at the access/exit points of persons and goods.

### **Access to Radiated Areas by Persons Not Exposed to Radiation in their Profession**

Section 19. (1) The licence holder has to issue written regulations should he wish to grant access to radiated areas to persons not exposed to radiation in their profession. These regulations must provide for, in particular, the type and content of possible instructions for the persons to be granted access, as well as the type and extent of possible access controls. Moreover, an estimate has to be conducted as to the occurring dose. These access regulations and dose assessments are to be submitted to the authority on request.

(2) Should on the occasion of such an entry an effective dose exceeding 10 microsievert be incurred, or should, due to multiple entries, an effective dose of more than 100 microsievert per year be expected, records have to be kept, giving account of the actually occurring doses. These records are to be stored for at least seven years and to be submitted to the authority on request (Section 25 par 4).

Responsible for radiation protection:

Mr. Rudolf DEUTSCH, MBA m.p.