Radiation Protection Instruction for EnRicH 2019

1. Introduction

The main purpose of EnRicH 2019 ”Exercise: Nuclear power plant accident” is to locate, shut off radioactively contaminated water pipes as well as measure and mark those critical points in a digital map.
When handling encased radioactive substances, the participants of the EnRicH 2019 may be exposed to a certain amount of radioactive dose caused by gamma-radiation. Therefore, 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 2019.
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), UPPER AUSTRIA (US-491145/2-2009-Spe/Ho) and KORNEUBURG KOW2-BA-0425, 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).

Rudolf DEUTSCH, MBA
Telephone: +43 50201/1030930,
Cellphone: +43 664 6225644
e-mail: arwt.abcut@bmlvs.gv.at,
AG Vorgartenstraße 225, 1024 Vienna,
Postal address: Rossauer Laende 1, 1090 Vienna

Radiation protection officers:

1. Proxy: KELLERMANN Daniel ARWT/ABCUT
2. Proxy: Dipl-Ing. Dr WILFINGER Roman, MBA ARWT/OPMT
3. Further personnel responsible for radiation protection and radiation protection officers in charge of their respective organisational element:

	BALOUN Robert	ARWT/ABCUT
WO II	GUBA Josef	NBCDEFCOY/7 HQBN

WO III	DVORAK Erwin	NBCDEFCOY/3 MECHHQBN
WO III	STEINKELLNER Ernst	NBCDEFCOY/3 MECHHQBN
WO I	HEUBACHER Anton	NBCDEFCOY/6HQBN

6. Access Regulation:

The participants of the EnRicH 2019 may enter the control area only in exceptional cases and always accompanied by a radiation protection officer or a person entrusted with radiation protection. Such exceptional cases are given if a robot cannot be accessed any longer by remote control, a defect either on the robot or on its remote control unit occurs, or in the event of any other breakdown. 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 or any other compartment suitable to effectively reduce the dose rate affecting the personnel accessing the robot in the competition area (according to the ALARA principle). The safekeeping of the radioactive substances must be done by means of a suitable distance tools to keep the dose rate on the radiation protection officer or the person entrusted with radiation protection as low as reasonable achievable (according to the ALARA principle).

Children, 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 exercise location H0m), 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 BEFORE the first day of the EnRicH 2019 event. Should additional personnel participate in the competition, they may still be entered into the dosimeter list on the first day of EnRicH 2019.
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_{60} source), ABCAbwKp/PzStbB3 (1 piece CO_{60} source), ABCAbwKp/StbB6 (1 piece CO_{60} source), ABCAbwZ (2 pieces CO_{60} sources) and ABCAbwKp/PzStbB4 (1 piece CO_{60} 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.