

OSART Good Practices

RADIATION PROTECTION

Radiation protection policy

Bohunice 3/4, Slovakia

Mission Date; 1-18 Nov., 2010

Automatic transfer of dose data from the operative and legal dosimetry between Bohunice NPP and Mochovce NPP. Transfer of received doses from the legal dosimetry department JAVYS, Bohunice NPP and Mochovce NPP.

Transfer of received doses from the legal dosimetry

- After the personal dose evaluation from the legal dosimetry, the exposures are automatically transferred to the other NPP, where they are recorded into the personal exposure employees' record as the local doses.
- Wherever the NPP employee received a radiation dose e.g. abroad, this information is automatically transferred to other locality.
- After dose evaluation from the legal dosimetry, exposures are imported into the dosimetry software (SEOD) and included into the employees' personal dose records. This personal dose information is automatically transferred to the other plant. Transfer of received doses from operative dosimetry:
- After the completion of the work in the controlled area, or log off of the operative dosimeter, the dose information is transferred within 5 minutes to the other plant.
- After each transfer of operative or legal exposure, the personal operative dose credit is automatically recalculated.
- Operative dose credit is calculated as the difference between the internal annual limit and sum of the legal dosimetry and operational dosimetry (after the last legal dosimeters evaluation).
- This operational dose credit is transferred from SEOD to the SAP system.

There is therefore:

Immediate, continuous exchange of dose information and dose credit of every person entering into controlled area in all NPPs of Slovenské Elektrárne Management of personal exposures of persons moving between the different sites.

The information about operational dose credit is automatically transferred to SAP and it is displayed and checked during the preparation of activities requiring a Radiation Work Permit.

Pickering, Canada

Mission Date; 19 Sep. -6 Oct, 2016

Simulation of radiological conditions during learning activities system.

Since early 2015, the plant has implemented use of remotely controlled radiofrequency technology to simulate radiation environments. The use of technology has been employed in dynamic learning activities to simulate radiological conditions, including gamma and contamination hazards and detector response, without the need for radioactive sources.

Main benefits:

1. Provide a safe learning environment since no real radiation hazards exists at the scenario.
2. Allow workers to perform in a simulated radiation area with detailed preparation to improve the training objective and results.
3. Permit the workers to clearly understand the radiation exposure and radiation of contaminated materials.



Dynamic Learning Environment Room



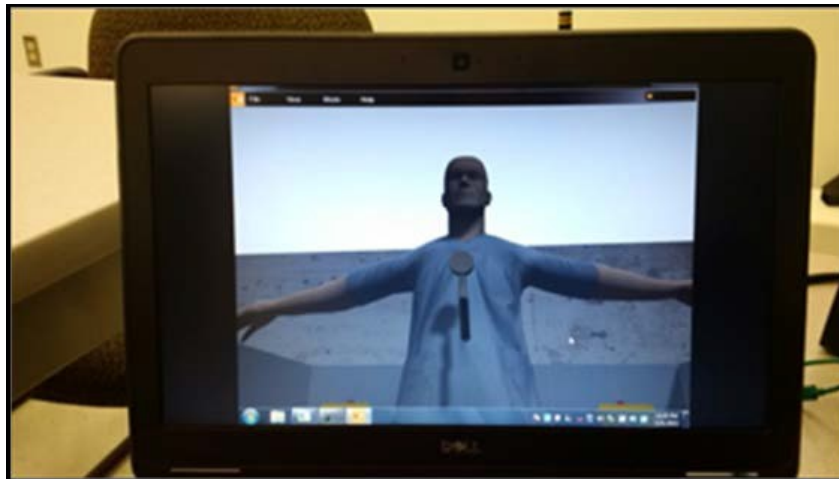
Dosimeter operated by radiofrequency



Simulated gamma meter and radiofrequency remote control



Simulated pancake probe and radiofrequency remote control



Phantom simulating a worker to be monitored

Civaux, France

Mission Date; 30 Sep. -17 Oct., 2019

Use of a resin (RTV FA 878) to facilitate the decontamination of the equipment and reinforce the integrity of the containment airlocks

The scaffolds used in a highly contaminated environment are difficult to decontaminate. The 'classic' manual decontamination is difficult, long and requires important technical, human and organizational means.

The spraying of the resin (RTV FA 878) in order to trap the contamination enables to fix the contamination and to remove it easily. The tests performed on the nuclear power plant scaffoldings have given satisfaction. 80% of the contamination has been removed in one only go.

- Fluid silicone resin, self-levelling and acting as a fixing agent, it can be either sprayed or applied with a spatula
- It can be applied with a manual spray
- High resistance to rupture and rips
- Durability of the mechanical properties
- Injectable under water



Washable protection/decontamination on a scaffolding catwalk

Ambition and stakes: Improve decontaminations and the containment of the protective airlocks.

- Enhance the level of contamination control in the radiation controlled area rooms
- Facilitate the decontamination process (time-saving trick, therefore saving dose)

- Multi-purpose use (airlock, waste containers...)

Tests and results observed:

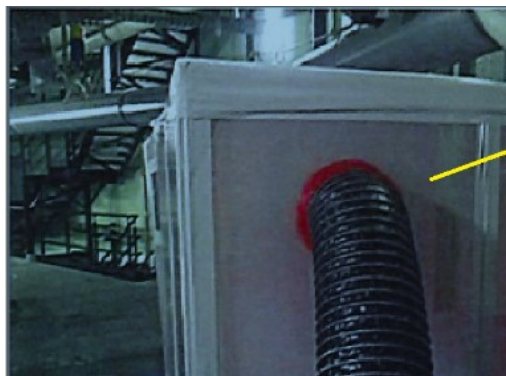
Scaffolding catwalks were tested twice, and the results are as follow:

- On a scaffold catwalk that has a non-fixed contamination of 100 Bq/cm² detected with a smear: after spraying and peeling the resin RTV FA 878, the non-fixed contamination was of 20 Bq/cm² detected with a smear. The measure of specific activity on the resin was of 200 kBq.
- On a scaffold catwalk that has no non-fixed contamination detected with a smear, but a specific activity of 4 kBq (Geiger counter): after spraying and peeling the resin RTV FA 878, the activity recorded by the Geiger counter on the scaffold catwalk was of 2 kBq and it was of 2 kBq on the peeled resin.
- Implementation during the unit 2 outage in 2019, with 3 integrity tests on ventilated airlocks.

Expected results:

The resin can be used to prevent a risk of contamination. It can also be used as a decontamination solution for equipment.

Its use should be extended to the preparation of construction sites and for their demobilization.



Improvement of the integrity of ventilated airlocks 2R16



Decontamination and protection of concrete waste containers