

EUROPEAN TRAINING AND EDUCATION IN RADIATION PROTECTION FOUNDATION

### EUTERP Workshop Radiation protection training in Europe – the next steps

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# TRAINING and AUTHORIZATION for PERSONS INVOLVED on RADIOLOGICAL SAFETY in NUCLEAR FUEL PLANT PITESTI ROMANIA

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## 1. EDUCATION, TRAINING, RECOGNISON of PERSONS INVOLVED on RADIOLOGICAL SAFETY

#### 1.1. Radioprotection Officer - RPO

According to the Romanian legislation in force [1], [2] and [3] the RPO is the person who is responsible to ensure compliance with the regulations in controlled and supervised areas and shall to obtain a work permit level 2 granted by CNCAN based on examination.

In the Romanian legislation is stated that for each controlled/supervised area at least one RPO shall be nominated for ensuring that work with radiation is carried out in accordance with the

A number of 19 FCN employees (01 Jan 2011) were certified by CNCAN for possessing the permit level 2 for working in the nuclear field for different domains. Part of them is classified like RPO and they are nominalised on FCN authorizations. The name given in FCN is Responsible with Radiological Safety (RSR) according with [4] and [5]:



Fig. 1 CNCAN norms

1. Nuclear Raw Material – Fuel Elements Fabrication

2. Unsealed Radioactive Sources – Other applications with URS

- 3. Sealed Radioactive Sources Other applications with SRS
- 4. Radioactive Material Transportation Non-fissile material

The RPO certificate is valid for 5 years and then must be renewed. This is in effect a focussed Continuous Professional Development

#### 2. Refresher Courses - contributions to improve the education and training activities

FCN carries out education and training activities in radiation protection in the frame of courses organized by several other institutions [2]. These activities are less oriented to provide knowledge on standardized methodologies or to develop harmonised education programmes, as they have to comply with the specific objectives of the organizers of the courses.

The last refresher course was organized in march 2008 with the participation of 13 persons involved in FCN in radiological safety/radioprotection (RPO, managers of compartments). Lectures was given in courses organised by the Institute for Physics and Nuclear Engineering Horia Hulubei (IFIN-HH) National Center for Nuclear Training (CPSDN).

The refresher course was approved by CNCAN by emitting Approval no 33/2008. The theme of this course was *"Radiological safety in fabrication of CANDU nuclear fuel*".

At the end of the refresher course was susteined an exam with questions included in the syllabus :

- 1. Romanian legislation in the nuclear field
- 2. Radiation and Dosimetry
- 3. Biological effects of the ionising radiation
- 4. Working with uranium. Effect of radon
- 5. Unsealed and Sealed Radioactive Souces
- 6. Radioactive Wastes Management

The duration of recycled course is 5 days, one time at 5 years [2]. At the end of the course an examination following the domains mentioned. The verification test has 60 questions.

After the graduated of the refresher course the persons was examined by CNCAN for obtaining the work permit level 2 on the domains mentioned at 1.1.

#### 3. Radiation Protection Technicians

In DSN is organised a Laboratory for Radioprotection and Personal Dosimetry (LRDP) who is responsible according with [4] for:

- the measurements of individual doses,
- the measurements of work-place doses, contamination monitoring,
- radiological monitoring
- personnel training and examination,
- issuing the work permit level 1

The Radioprotection Technicians in FCN are employee possessing permit level 1 but have the more ability and competence for:

#### advise the employer

- possess the knowledge, experience and competence required in order to advise with respect to the employer's circumstances
  - supervision and gives information of its RPO to fulfil law obligation
    - operates laboratories for the calibration of survey monitors (secondary

laboratory in the national calibration system), the individual monitoring of the internal contamination (whole body counters, alpha, gamma), the personal monitoring for external exposure (track and thermo-luminescence dosimetry services) and radon concentration evaluation service;

- assures the radiological environmental surveillance;
- runs computing activities of support (e.g. numerical calculation, formulas, tables, assesments)
  - in addition to the activities carried out to fulfil the law obligation for FCN

- research and development in radiation protection improvement specific to raw nuclear material, nuclear fuel fabrication;
- qualification of measurement techniques and methodologies, by contributing to national and international standardization) standards development, harmonization of dose evaluation procedures.

#### 4. CONCLUSIONS

#### 1. Trainers

Employers and those responsible for training development and course design fully understand the concepts of competency and suitability. The training provider can provide a level of knowledge and develop a basic level of competency, but it is up to the employer to assess the adequacy of both and make judgements on the suitability of an employee for a role he is to be given

#### 2. Harmonised approaches to education and training

The education to standardised methodologies and the harmonisation of the training path is one of the management traits of the education and training activities of FCN, in respect to other national centres (universities, hospitals, public and private institutions, professional associations) running courses and trainings in radiation protection [6] and [7]

**3.** On the base of this experience gained in the field of NUCLEAR RAW MATERIAL (MPN) FCN can participate to the ENETRAP project or other projects which can contribute to the improvement of training activities in radioprotection in FCN.

#### 4. e-learning

The training and examination of employees by computer with managment of course and questions in INTRANET is the next step of Radioprotection and Education and Training in FCN

#### 5. REFERENCES

[1] Law no. 111/1996 on the safe deployment, regulation, authorization and control of the nuclear activities, republished in 2006

[2] Fundamental Radiological Safety Norms approved by CNCAN's president order no. 14/2000 and published in Official Gazette of Romania no. 404/2000

[3] Norms for granting the work license and for recognizing the qualified experts approved by CNCAN's president order no. 202/2002 and published in Official Gazette of Romania no. 936/2002

[4] FCN Radiological Safety Manual, edition five 2009

[5] CN-RP-62 - Trainning on radiological safety and issuing of permit level 1 for FCN personnel

[6] BSS – IAEA Basic Safety Standards

[7] Council Directive 96/29/EURATOM of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from Ionizing radiation