

Radiation Protection Workers' Continuing Training Program at CNE Cernavoda NPP

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NUCLEARELECTRICA
Puterea Viitorului

INTRODUCTION

The goals of successful training and qualification programs are to produce and maintain well-qualified, competent personnel to safely and reliably operate, maintain, and improve the performance of nuclear power stations. Continuing training is used to refresh and improve the application of knowledge and job-related skills to meet management's expectations for individual and station performance.

Training and qualifying assigned personnel are important responsibilities of line managers. Assigned personnel include permanent on-site and off-site station personnel, contractors, and temporary workers.

High-quality training and job qualification are viewed as an integral part of everyone's job function. Thus, training is recognized as an important part of the plant's core business. Achievement of organizational performance goals and objectives is facilitated when personnel understand the bases of organizational policies and practices and when they are highly motivated, trained, and qualified.

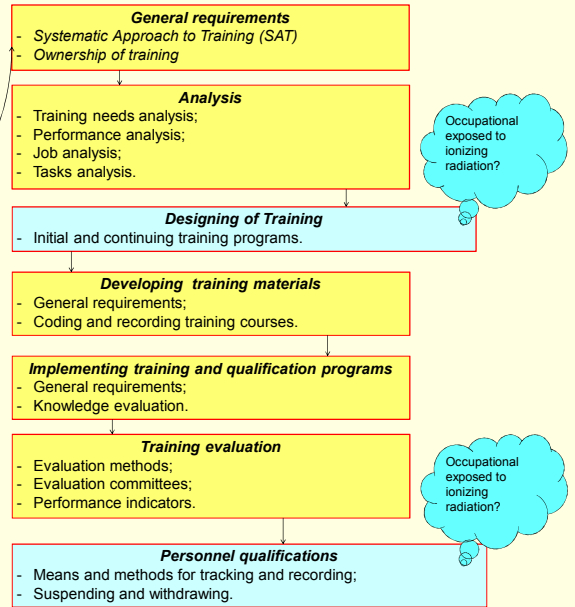
Radiation protection training program is part of plant personnel training process.

TRAINING PROCESS AT CNE CERNAVODA

"A systematic approach to training is used to provide highly skilled and knowledgeable personnel for safe and reliable operations and to improve performance."



TRAINING AND QUALIFICATION PROGRAM



RADIATION PROTECTION TRAINING AND QUALIFICATION PROGRAM

CNE Cernavoda station personnel and contractors, **occupational exposed to ionizing radiation**, have radiation protection qualification according to their necessities.

The final objective of this training is the issue of **Nuclear Activities Work Permit**.

There are three qualification levels, with different skills and responsibilities.

Untrained - "RED" persons
Need special approval for accessing radiological area and perform radiation work

Need access in Radiological Area?

Level 1 work permit – RP qualification "ORANGE"
1 Day course - basic radiological training: Plant access rules – eating, drinking and smoking areas; Individual dosimetry; Contamination monitors.

Can enter Radiation Controlled Area and perform Radiation Work only in Zone 2 and Zone 3 (contamination free, environmental background radiation dose rates) by them self.

They are not responsible for their radiation protection in Zone 1, thus they are not allowed to perform activities in Zone 1 without a Radiation Protection Assistant.

Fit for workers with permanent workplace inside RCA zone 2 and 3 or frequently performing activities inside RCA zone 2 and 3.

Re-qualification for "Orange" – every 5 years - half day (4 hours) course, a reminder and update of the information in initial qualification course.

Level 2 work permit – RP qualification "YELLOW"

- Advanced 17 days RP theory course (rights and responsibilities, radiation theory, ALARA, RP instruments, dosimetry, planning and performing radiation work, etc.), followed by 10 days practical applications course (basic practices and principles of radiological work for radiation / high radiation areas, contaminated areas and areas with airborne activity; practical matters: how to dress and undress protective clothing, wearing hoods and gloves, respiratory protection equipment; details on ALARA techniques related to optimization of exposure.
- They may perform Radiation Work without any assistance and may be held responsible only for their own radiation protection.
- Can enter Radiation Controlled Area and perform Radiation Work in Zone 1, Zone 2 and Zone 3 by them self.
- Fit for workers frequently performing activities inside RCA Zone 1 (operators, maintainers, fuel handling operators, engineering staff, supervisors, security, fire fighters, emergency response team, etc).

Re-qualification for "Yellow" – every 5 years a 5 days refreshing course.

Practical abilities are tested twice between refreshing courses (after every 18 months): accessing rubber area; selecting proper equipment; using RP field instruments; using RWP etc.

As a pre-requisite for this testing they have to study (CBT) a refreshing course on RP Fundamentals.

Level 2 work permit – RP qualification "GREEN"
RP experienced workers, with thorough RP knowledge.

A "Yellow" qualified worker can become "Green" after performing and graduate a 5 days refreshing course:

- Important changes in RP procedures;
- Recent RP events (internal and external OPEX);
- Monitoring and evaluation of radiological condition;
- Working inside contaminated areas;
- Using individual and collective protective equipment.

Green persons may act as Radiation Protection Assistants :

- When in the work team are Orange persons;
- For very complex activities, when the workers cannot focus both on the job itself and on RP aspects;
- For Medium and High Risk radiation work;
- For jobs with steps that cannot be interrupted (first safe step is the end of activity) and during which the radiological conditions are expected to change, leading to unplanned exposures.

Re-qualification for "Green" – every 5 years a 5 days refreshing course.

Practical abilities are tested twice between refreshing courses (after every 18 months): accessing rubber area; selecting proper equipment; using RP field instruments; using RWP etc.

As a pre-requisite for this testing they have to study (CBT) a refreshing course on RP Fundamentals.

Mock-up training and exercises allow workers to practice tasks without the associated risk. Individuals can perform a walk through or dry run that can help to find any problems or to find

- Identify any shortcomings in either the individuals' skills or to the tools that may be used to perform the task.
- Helps to reduce the time needed to perform the task as well as to prevent the possible errors.

Important events (involving individual and collective exposure or near-misses; RP procedures violation, etc.), are subjects of **information materials as Info Supervisors, RP bulletin, Subject of the Month**.