Instruction IS-06, of 9th April 2003, defining Training Programmes on basic and specific radiation protection matters, regulated by Royal Decree 413/1997 of 21th March in relation to nuclear and radioactive facilities of fuel-cycle

Published in the Official State Gazette (BOE) No. 132, 3th June 2003

Royal Decree 413/1997, dated 21 March, on the Operational Protection of Outside exposed Workers to the risk of ionising radiation during their activities in controlled areas (BOE No. 91, dated 16 April 1997), establishes, among the obligations of outside undertakings, the need to provide workers with all information and training in the field of radiation protection that may be required to the performance of their duties, according with the provisions of Article 21 of the Spanish Regulations on Health Protection against Ionising Radiation, approved by Royal Decree 783/2001. Likewise, the facility licensee has the obligation to provide all specific information and training related to the particular conditions both of the controlled area and of the activities to be performed.

Furthermore, Article 3, Part 2 of RD 413/1997 states that Nuclear Safety Council may perform as many controls and inspections on outside undertakings as it may be necessary in order to verify the authenticity of the data recorded in the Register as well as the degree of compliance with the obligations established in this provision.

One of the functions established by the said Royal Decree to the Nuclear Safety Council is to check whether the workers hired by outside undertakings have sufficient knowledge to comply with the provisions included in the aforementioned Regulations. Consequently, in order to guarantee that every worker has the right level of knowledge on radiation protection , it is essential that the Nuclear Safety Council develops both basic and specific training programmes on radiation protection.

By virtue of the foregoing, in accordance with the legal authorisation provided by Article 2, Part a) of the Act 15/1980, dated 22 April, on the Creation of the Spanish Nuclear Safety Council, as amended by the 1st Additional Provision to the Act 14/1999, dated 4th May, in consultation with all affected sectors, and after receiving all appropriate technical reports, the Nuclear Safety Council, in its meeting on 9th April 2003, has agreed upon the following provisions:

One. Objective and Scope of Application

The purpose of this Nuclear Safety Council Instruction is defining the scope and contents of the training programmes on radiation protection aimed at outside exposed workers in nuclear and radioactive fuel-cycle facilities. This Instruction shall apply to the facilities, the outside undertakings, and the outside exposed workers.

This Instruction shall also apply to outside exposed workers of non-Spanish undertakings. With respect to the latter, the requirement for basic training shall only be understood as fulfilled under the following conditions:

a) For outside exposed workers from Member States of the European Union, as long as the Training section on the worker's individual passbook hereinafter, the 'Radiological Passbook') is complete.

b) For outside exposed workers from countries not belonging to the European Union, as long as the worker holds any document of certificate issued by their employer that permit to prove the fulfilment of the provisions required herein.

Two. Definitions

The definitions of the terms and concepts used in this Instruction correspond to those included in the regulations in force.

1. 'Outside exposed worker', according to Article 2, Part b) of RD 413/1997, shall mean any worker classified as 'exposed' under the provisions of Section 2, Chapter II, Title IV of the Spanish Regulations on Health Protection against Ionising Radiation (RD 783/2001) that is performing activities inside a controlled area within a nuclear or radioactive facility, whether employed temporarily or permanently by an outside undertaking (including trainees, apprentices, and students), or whether providing services as a self-employed worker.

2. 'Activities', according to Article 2, Part e) of RD 413/1997, shall mean any tasks performed by an outside exposed worker in a controlled area within a nuclear or radioactive facility

3. 'Outside undertaking', according to Article 2, Part d) of RD 413/1997, shall mean any legal or natural person, different to that of the facility licensee, that needs to perform activities in a controlled area within a nuclear or radioactive facility.

4. 'Facility operator', according to Article 2, Part c) of RD 413/1997, shall mean any legal or natural person that, in conformance with the provisions of Act 25/1964, dated 29th April, on Nuclear Energy, as well as with the regulations for its implementation, operates a nuclear or radioactive facility and is subject to a reporting or authorisation process for carrying out their activities.

5. 'Centre or company in charge of the basic training on radiation protection' shall mean the centre, institution, or outside company that has provided the basic training course.

6. ' radiological passbook' shall mean any instrument for the record of data where all appropriate matters from the application of the radiological monitoring system to outside workers are collected. The format and contents of this document are defined in the Nuclear Safety Council Instruction IS-01, dated 31st May 2001.

Three. Requirements for the Teaching Staff and the facilities

a) All staff responsible for teaching the basic training courses shall meet the following minimum requirements:

• Hold a University Degree or any equivalent qualification.

• Certify the completion of training courses on radiation protection covering the theoretical and practical issues of the basic programme.

• at least one-year accreditation of professional or teaching experience in the field of radiation protection.

Exceptionally, training staff lacking a university degree but meeting the other two requirements could teach basic courses. Such staff should, at least, hold a technical professional education certificate or any equivalent qualification and have their knowledge and competence for the task accreditaded by the Head of the service or technical unit for radiation protection.

b) Specific training courses shall be taught by staff with similar requirements to those of the staff in charge of basic training courses. Furthermore, the staff for specific courses must have a contractual relationship with the facility where the specific training is to take place.

c) The facilities where these courses are to be taught shall have all necessary resources and devices for the completion of the general and specific objectives of the practical lessons, as set forth in Appendix I hereof.

Four. Basic Training Courses

4.1. Contents of the Basic Training Programme

According to the provisions of Article 4 of RD 413/1997, dated 21st March, the contents and duration of the basic training programme shall be defined as set forth in Appendix I hereto.

4.2. Evaluation of Knowledge Acquired

The evaluation of the knowledge acquired after the completion of the basic training course, as defined by the programme set forth in Appendix I hereto, shall be performed by means of a 20-question multiple-choice test. The percentage of correct answers required to pass this test is 70 %.

Each outside exposed worker shall have two opportunities to pass this exam. It is not achieved, the outside exposed worker will have to complete the basic training course again in order to receive two more opportunities.

The centre or company in charge of the basic training shall maintain all documentation corresponding to each course performed, including a folder with the following; information– programme of the course, name and qualifications of the teaching staff, score obtained, place and date of performance, and texts used.

In the event the basic training is performed by a centre or company contracted by the outside undertaking, the undertaking shall keep at least one copy of the final certificate of competence, of the exam, and of the programme of the course.

4.3. Validity

Outside exposed workers shall complete the basic training course on radiation protection on a biennial basis, according to the programme set forth in Appendix I hereto.

Five. Specific Training Courses

5.1. Contents of the Specific Training Courses

According to the provisions of Article 4 of RD 413/1997, dated 21st March, the contents and duration of the specific training programme shall be defined as set forth in Appendix II hereto.

5.2. Evaluation of Knowledge Acquired

The evaluation of the knowledge acquired after the completion of each course shall be performed by means of a 20-question multiple-choice test. The percentage of correct answers required to pass this test is 70 %.

Each outside exposed worker shall have two opportunities to pass this exam. It is not achieved, the outside exposed worker will have to complete the basic training course again in order to receive two more opportunities.

The facility licensee shall keep all documentation corresponding to each course performed, including a folder with the following information; programme of the course, name and qualifications of the teaching staff, name of the attendees, outside undertakings where each outside exposed worker belongs, score obtained, place and date of performance, and texts used.

5.3. Validity

Specific training certificates shall be valid for the 12-month period subsequent to the date of completion of the corresponding training course.

At those sites with several nuclear power reactors, the specific training received when accessing to the controlled area of one of the reactors shall be considered valid for accessing to the controlled area of the other reactor provided that the period subsequent to the date of completion of the corresponding training course does not exceed 12 months.

Six. Obligations of Outside Undertakings and Facility Operators

6.1. Obligations of Outside Undertakings

a) Providing their workers, on a biennial basis, with the basic training in the field of radiation protection required to the performance of their duties, according with the provisions of Article 4 b) of RD 413/1997.

b) Notifying the CSN the starting date of each basic training course at least 20 days before its actual initiation..

In the event of urgent operations or activities, outside undertakings shall notify the CSN of the starting date of the corresponding courses as soon as possible.

c) Requesting the Radiological Passbook to the CSN, assigning them to the workers, and completing the passbooks' specific section on basic training on radiation protection pointing out the date of completion of the courses and the details of the centre or company where they took place and by having the passbooks signed and sealed by the person in charge of the institution or by a delegated representative.

6.2. Obligations of Facility Operators

a) Previous to the beginning of the activities, ensuring that workers have received the basic training on radiation protection set forth by Article 4, Part b) of RD 413/1997.

b) Previous to the commencement of the activities, providing outside workers with all specific information and training according with the particular conditions both of the controlled area and of the activities assigned to them.

c) Completing the Radiological Passbooks' section on specific training on radiation protection including the date of completion of the corresponding courses and the details of the centre or company where they took place and by having the passbooks signed and sealed by the person in charge of the institution or by a delegated representative.

Seven. Radiological Passbook Loss

In the event a Radiological Passbook is lost, and as far as training is concerned, outside undertakings shall perform the following:

a) Arranging the completion of the outside exposed worker's section on basic training in accordance with the documentation and the registers kept at the outside undertaking.

b) In the event that there were no registers on the outside worker's training, providing the worker with a new basic training course on radiation protection according to the programme and contents described in the Appendix I to this Instruction.

Eight. Inspection and Control

The Nuclear Safety Council, within the scope of its functions, may, at any time, perform all controls it may deem necessary in order to verify the fulfilment of the requirements provided by this Instruction and by RD 413/1997, dated 21st March, on the Operational Protection of Outside Exposed Workers d to the Risk of Ionising Radiation during their Activities in Controlled Areas.

Nine. Infractions and sanctions

Witout prejudice to the civil, pernal or other reposnabilities that may be incurred, the filure to comply with the provisions of this Instruction, shall be sanctiones according to what is established in Chapter XIV of Law 25/1964, of 29th April, on Nuclear Energy, accoding to the wording given by the Fifth Additional Provision of Law 54/1997, of 27th November, on the Electricity Sector, as well as by the Fifth Additional Provision of the Law 14/1999, of 4th May, on Public Prices and Fees for services rendered by the Nuclear Safety Council, and in accordance with the provisions of Article 69 of Royal Decree 783/2001, of 6th July, approving the Regulations on Health Protection against Ionising Radiation (Official State Gazette No. 178

Single Repeal Provision

Any provision of equal or inferior rank that is contrary to this present Instruction shall be repealed.

Single Additional Provision

Any outside exposed worker performing activities or providing services on a continuous basis within a nuclear or radioactive fuel-cycle facility and, thus, receiving the same periodic training than the facility's employees shall be exempt from completing the basic training course for the entire period when their labour conditions remain as described herein. In that event, either the Head of the service for radiation protection or the Head of the training department of the facility shall issue a certificate stating that the outside worker has received basic training on radiation protection.

Should an employee of a nuclear or radioactive fuel-cycle facility need to perform activities as an outside worker in a controlled area within a different facility, the periodic training on radiation protection received in their own facility shall be considered valid and sufficient as basic training on radiation protection. In that event, either the Head of the service for radiation protection or the Head of the training department of the facility where he or she works as an employee shall issue a certificate stating that the worker has received basic training on radiation protection.

CSN personnel performing inspections in controlled areas of nuclear or radioactive fuel-cycle facilities, as well as all national and international competent authorities in the matter, shall be governed by a specific system where the provisions herein do not apply.

Single Final Provision. Entry in force

This present Instruction shall enter in force on the day following its publication in “Official State Gazette”.

This I communicate to you for your knowledge and pertinent effects
In Madrid, on this 9th April 2003

The President,
Mrs. María-Teresa Estevan Bolea

APPENDIX I

Programme and contents of the basic training course for outside exposed workers on the scope of nuclear and radioactive fuel-cycle facilities

CONTENTS	OBJECTIVES	MINIMUM LENGTH
1. Fundamental Concepts		**1 hour**
Nature of radioactivity	Describing the main concepts of radioactivity and the nature of corpuscular and electromagnetic radiation.	
Natural and artificial radioactivity	Learning about the existence of natural radiation and its capacity to cause dose.	
Activity, measurement unit	Defining the concept of 'activity' and its measurement unit, the becquerel (Bq).	
Dose, measurement unit	Defining the concept of 'dose' and its measurement unit, the sievert (Sv). Converting microSv and mSv.	
Dose rate, measurement units	Defining the concept of 'dose rate' and calculating dose by time of exposure.	
Biological effects of radiation	Describing the damaging effects of radiation on humans. Quantifying radiation risk minimally.	
2. Legal Issues		**1 hour**
Legislation in force	Learning that all radiation-related activities are properly regulated. Describing how such regulations define a special treatment for outside workers.	
Responsabilities	Describing the different levels of responsabilities for outside exposed workers, their contracting undertakings, and the facilities.	
Requirements	Describing the requirements necessary for being qualified to work under exposure (medical, training, and dosimetric requirements).	
Dose limits	Defining the dose limits applicable to outside workers.	
Radiological Passbook	Describing the information included in radiological passbook and their period of validity.	
3. Risks & Protection		**2.5 hours**

External exposure	Identifying and describing the situations where outside workers are at risk of external exposure. Identifying the equipment required for measuring external exposure (basic knowledge of most common dosimeters and dose-rate meters). Identifying and applying the basic principles of protection (time, distance, shielding, organisation). Identifying area monitors. Describing the meaning of alarms and the correct response in the event of activation.
External contamination	Describing the significance of external radioactive contamination and its associated risks (skin dose, ways of contamination). Describing and applying the practical procedures for preventing personal contamination and the dispersion of contamination. Learning that clothing protects against external contamination but not against radiation. Identifying and locating surface contamination monitors, both for devices (check areas) and people (portal monitors). Describing the purpose of passageways. Learning how to perform a simple personal decontamination.
Internal contamination	Describing the significance of environmental contamination, its associated risks, and the ways for internal contamination. Describing how internal contamination is detected and measured by specific equipment. Listing the forms of prevention of internal contamination, including respiratory protection equipment.
Risk identification, prevention measures	Identifying radiation signals. Distinguishing risk areas (with exposure and/or contamination) and their respective risk level. Applying for a Radiation Work Permit (RWP). Understanding the protection and action guidelines included in a RWP.

	Describing the usual practices for accessing and leaving a controlled area, as well as for acting inside it. Describing the ALARA principle. Listing various examples of application of the ALARA principle. Listing the response actions in the event of a radiological incident (including, among others, personal accidents, loss or damages to dosimeters, rips on protective clothing, Plant alarms, and contamination in portal monitors).	
4. Practice		**1.5 hours**
Personal protection	Putting on and taking off the protective clothing without dispersion of probable external contamination. Creating a simulated passageway.	
Respiratory protection	The instructor will perform a simulation of the methods for putting on and taking off the respiratory protection mask.	
Evaluation		**0.5 hours**
Total Length		**6.5 hours**

APPENDIX II

Specific training programme for outside exposed workers performing activities in controlled areas on the scope of nuclear and radioactive fuel-cycle facilities

CONTENTS	OBJECTIVES	MINIMUM LENGTH
1. Physical Description of the Facility		**0.5 hours**
Description of the facility: controlled, monitored, and clear areas; identification of the facility's specific risks	Participants will identify the facility's different buildings and ordinary and emergency accesses, and will also describe the type of generic radiation risks expected in each of such areas.	
2. Risk Forecasting & Prevention Guidelines in the Facility; Preparedness & Response Standards		**2 hours**
Radiation Work Permits (RWP)	Applying for a RWP and understanding the instructions and the information contained in this document.	
ALARA programme	Applying the facility's set of ALARA practices.	
Entering and leaving the controlled area	Completing the correct steps for entering and leaving the controlled area (registering the dosimeter, picking up and leaving the protective clothing, passing through portal monitors, checking the equipment, etc.).	
Contamination control	Describing and applying the facility's specific set of practices for contamination control. Passing through the facility's change areas and passageways correctly, preventing the dispersion of contamination. Locating and using material storage areas.	
Facility detectors	Registering and cancelling the direct reading dosimeters available in the facility. Placing direct reading dosimeters correctly. Knowing how to read and understand direct reading dosimeters. Knowing the operating instructions and correct positioning of thermoluminescent dosimeters. Locating, identifying, and crossing the way-out portal monitors in controlled areas.	

	Interpreting and reacting accordingly to the indications of area monitors of the facility	
Waste minimisation	Applying the practices for waste minimisation.	
	Applying the facility's waste control procedure.	
Response in the event of a radiological incident or anomaly	Listing and identifying the possible types of radiological incident or anomaly.	
	Describing the response necessary in the event of an incident or anomaly in the facility.	
3. Operational Experience		**0.5 hours**
Lessons learned	Describing the lessons learned in the operational experience of radiation protection within the facility.	
Refreshment on specific matters	Refreshing the knowledge on specific matters as a consequence of recent changes or the results of radiation-related works or former refuelling processes.	
4. Emergency Procedures		**0.5 hours**
Escape, evacuation, fire, and radiation alarms	Identifying the different emergency alarms and listing the types of response required in each case.	
Assembly points and evacuation	Identifying the emergency assembly points and describing the installation's personnel account and evacuation procedures.	
Evaluation		**0.5 hours**
Course Length		**4 hours**