



Project	INSC Project MC.03/10
Title	Training and Tutoring for expert of the NRAs and their TSOs for developing or strengthening their regulatory and technical capabilities LOT 1: Training and Tutoring for Nuclear Regulatory Authorities and their TSO's: Nuclear Safety Regulation, Licensing and Enforcement.
Contract	N° 2011/261-585 (Contract between the EC and ITER-Consult)
Subject	Training Course n. 10

Task 2 - Training Course
"Safety evaluation for RW Management and Decommissioning"
Rome – September 17 – 28, 2012

Minutes

- **Objectives of the Training**
- **Synthesis of the training activity**
- **Conclusions**
- **Annexes**

Objective of the Training- The training course had the objective to provide a comprehensive presentation and discussion of the safety approach, as basis and requirements, for radioactive waste management (RWM) and decommissioning activities of nuclear facilities to staff of nuclear regulatory authorities and related TSO. The training has been carried out according to the attached program split in two weeks (Annex 1). The daily list of participants is also attached (Annex 2).

Synthesis of the training activity - The training has been opened by the TPL (Mr. Madonna/ITER) who has presented the objective of the training and the program underlining the importance to conduct the training activity in an interactive way in order to ensure the best transfer of knowledge and to dedicate two afternoons each week to practical application orga-



nizing the trainees in two working groups, reporting the results of the application and discussing them in a plenary session.

The training activity of the first week related to RWM was started with an introductory section covering: the role of the nuclear regulatory authority (NRA) for nuclear safety and related regulatory-licensing activities, the EU framework in the field of nuclear and radiation safety, the national infrastructure needed to be established in a country for RWM.

After the introductory session, comprehensive presentations and discussion have been carried out on the topics characterizing the RWM activities: starting from the RW origin, classification and type of RWM facilities (treatment, conditioning, storage, disposal) and continuing on all relevant aspects for safety requirements, legislative and regulatory framework, safety analysis, licensing process, regulatory review and inspections, regulatory guidance and public information and involvement.

The second week, dedicated to the decommissioning of nuclear facilities, covered in a systematic and comprehensive way: policy and strategy, decommissioning options, funding and cost estimation, national and international safety requirements, IAEA and OECD references, decommissioning plan (DP), transition from operation to decommissioning, decommissioning phases, decommissioning SAR, regulatory requirements, D&D techniques, management of decommissioning waste, clearance levels, licensing process, regulatory review and approaches to develop regulatory guidelines for decommissioning and clearance of materials.

The specific lectures, according to the program, were mainly given by experts, and consultants, from ISPRA and ITER involving 18 different lecturers for a total of 47 lectures /presentations and 4 practical applications.

The following topics were presented in detail (see list of presentations in Annex III) and discussed respectively in the first and second week:

1st week

- Functions of the Nuclear Regulatory Authority
- EU infrastructure for Nuclear Safety
- National Infrastructure for RW Management
- RW origin, types, characterization, classification and overview of RW management facilities (sorting, treatment, conditioning, storage, disposal)
- Safety requirements for RW management: national and international legal instruments
- Safety requirements, licensing process and safety assessment for RWM facilities
- Environmental Impact Assessment (RWMF)
- Qualification of RW packages, transport requirements for RW



- Safety requirements, SAR content and licensing steps for RW storage facility
- Requirements, safety assessment and licensing of near surface disposal facility
- Regulatory safety evaluation and regulatory inspections for RWM facilities
- Management of radioactive sources
- Public information and involvement

2nd week:

- Decommissioning of nuclear facilities: policy and strategy, funding, planning, licensing
- EU & International requirements for decommissioning activity
- Objective and content of Decommissioning Plan, SAR, EIA
- Transition from operation to decommissioning for a NPP, radiological and engineering survey of nuclear facilities before & during decommissioning
- Decontamination and Dismantling activities for decommissioning of nuclear facilities
- Management of decommissioning waste
- Regulatory requirements, safety functions, technical specifications, surveillance requirements and accident analysis for decommissioning activity
- Licensing approach for decommissioning (steps, phases, specific authorization)
- Content of SAR for decommissioning activities
- Regulatory safety review and regulatory inspections
- Security requirements for RWM and decommissioning
- Clearance Levels for decommissioning materials, site release criteria, regulatory guidelines for decommissioning and clearance criteria.

Each lecture was followed by a discussion with the trainees answering their questions and providing additional clarifications. Each day and week was concluded with a summary of the activity performed and related key aspects. The training activity has been monitored by a representative of the EC in the last two days.

Conclusions - The training activity has been carried out covering, with effective examples and experiences, the technical, safety and regulatory-licensing issues related to the RWM and decommissioning, focussing on the role, responsibility, review and inspection activity of regulatory authority. Practical application have been conducted with the direct involvement of the trainees for aspects related to RW management, review of FSAR for a HLW storage facility, modification of safety requirements (limits and conditions) during the progress of the decommissioning process, and on the review of structure and content of the Decommissioning Plan. How to develop the content of regulatory guidance on the safety requirements for RWM and decommissioning activity have been presented and discussed.

The team of attending trainees (12 people from Nuclear Regulatory Authority of 9 partner countries: Armenia, Belarus, Brazil, Egypt, Mexico, Ukraine, Vietnam, Philippines, Malaysia) has shown to be very interested, motivated, attentive and demanding.



The trainees have expressed their appreciation and satisfaction for the program and content of the training showing high interest for all the topics presented and discussed, interacting actively with the trainers, asking questions, clarifications and expressing their view and considerations. They have thanked the EC for the opportunity given to participate.

At the end of each week a detailed questionnaire has been submitted to the trainees to verify the degree of profit they have achieved during course.

The material of the training has been provided to the trainees in electronic and paper copy.

ANNEXES

- Annex 1 Training Program
- Annex 2 List of participants
- Annex 3 List of lectures/presentations

Roma, 28.09.2012

Antonio Madonna	ITER (TPL)	
Nelli Aghajanyan	ANRA	
Karen Haroyan	NRSC	
Nikolai Mikhailov	Gosatom-nadzor	
Iryna Forostenko	SNRIU	
Teng Iyu Lin	AELB	
Lai Tien Thinh	VARANS	
Mohamed Abdel Geleel Mohamed	NCNSRC	
Selma Parente de Jesus	CNEN	
Nerbe José Ruperti Júnior	CNEN	
Mary Rose Q. Mundo	PNRI - NRD	
Xaman Nohpal Jiménez	CNSNS	
Roberto Fabian Ortega	CNSNS	