Project	**INSC Project MC3.01/13**
Title	**Training and Tutoring for experts of the National Regulatory Authorities and their Technical Support Organisations for developing or strengthening their regulatory and technical capabilities**
Contract	**N° NSI/2014/343-969 (between the EC and ITER-Consult)**
Subject	**Sub-Task 2.1: Trainings**
	9th Regional Training Course

Sub-Task 2.1: Regional Trainings – 9th Regional Training Course

"Radiation Protection and Regulatory Emergency Preparedness"
September 19 – 23, 2016 – Bizerte

Minutes

Content:

- **Objective of the Training**
- **Synthesis of the training activity**
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Objective of the Training – The one week Regional Training Course (RTC), organized in cooperation with the regional Arab Network of Nuclear Regulators (ANNuR) had the objective to:

- present and discuss the topics of radiation protection (RP) and emergency preparedness & response (EP&R) with focus on the functions and responsibilities of the Nuclear Regulatory Authority (NRA),
- transfer EU and international approaches related to RP and EP&R.

The participants, a group of 23 trainees, came from NRAs/TSOs and other state institutions from 13 Arab countries of the region, namely: Iraq (1), Libya (3), Mauritania (1), Palestine (1), Bahrain (1), Morocco (1), Jordan (2), Sudan (2), Egypt (1), Saudi Arabia (2), Tunisia (5), Yemen (1) and Qatar (2). The training followed the attached program (Annex 1). The list of participants signed on a daily basis is attached (Annex 2). The training was held in English and simultaneous translation in Arabic was provided.

Synthesis of the training activity - The training started with an introduction and welcome from Mr. A. Mahjoub (ANNuR Chairman) and the Technical Project Leader Mr. Antonio Madonna (ITER). After that Mr Madonna explained the EC INSC program and highlighted the objective of the T&T Phase III project financed by EC.

He presented the objective of the training and the program, including one practical application to be carried out by the trainees. The importance of encouraging continuous interaction during the training activity between trainers and trainees in order to maximize the transfer of knowledge was underlined and continuously requested from both sides during the training implementation.

The EC infrastructure for nuclear and radiation safety was presented focussing on EC directives, EC institutions, performed stress test after Fukushima and the importance to ensure continuous improvement in nuclear and radiation safety and promote transparency.

The structure and content of a typical emergency plan and emergency zoning (with reference to both on-site and off-side emergency plan) were presented and discussed with definition of roles and identification of responsibilities of government, operator and regulator, and their interfaces. Aspects related to: source term estimation, environmental monitoring, periodic drills, requirements for preparedness, response (early and late phase countermeasures), treatment of exposed people, lessons learned from Fukushima accident, public communication in normal operation and during and after emergencies were covered in details.

During the implementation the following specific subjects were presented and discussed in a systematic and comprehensive way:

- EU infrastructure for Radiation Protection and Nuclear Safety
- Role and responsibilities of a Nuclear Regulatory Authority (NRA)
- NPP safety conception and potential accidents
- Essentials of Radiation Protection
- Basic notions of radiation protection for nuclear and radiological emergencies
- Nuclear and radiological emergencies: an overview
- On-site nuclear emergency plans
- Off-site nuclear emergency plan: organization, requirements and periodic drills
- Early phase countermeasures
- Late phase countermeasures
- Regulatory role for Nuclear emergency
- Transfer processes of released radioactivity to man and environment
- Atmospheric dispersion: interpretation of model and measurements results
- Environmental monitoring and data management
- Triage, monitoring and treatment of people exposed to ionizing radiation
- Organization of nuclear and radiological emergency exercises
- Legally binding national and international instruments related to emergency preparedness
- Legal requirements on data notification & information exchange
- Lessons learned from other historical radiological accidents

- EU requirements for EP&R
- Public communication during normal and emergency conditions

Questions from the trainees were welcomed during the presentations as it was of utmost importance to clarify basic concepts and provide additional information when needed.
The training week topics, which were presented and discussed in details are listed in Annex 3.

The Practical Application was dedicated to *"Emergency Exercise"*, which consisted in performing an exercise related to the main functions to be covered by the Nuclear Regulatory Authority during an emergency situation. The supporting material was provided in advance to the trainees.
The trainees were divided in three groups:

- ✓ "nuclear assessment group",
- ✓ "radiological assessment group",
- ✓ "management group".

The groups needed to discuss and perform the tasks as follows:

- ✓ assessment of nuclear safety,
- ✓ assessment of radioactive release,
- ✓ assessment of dispersion and radiological consequences and
- ✓ simulated communication with the public, media and IAEA.

They elaborated and presented the results following the evolution of the nuclear accident scenario.
The Practical Applications gave the possibility to the trainees to perform a team work, to confront their knowledge and national practices and to establish a good collaboration guided by EU experts.
In numbers: 8 different lecturers (EU and Local) for a total of 21 lectures/presentations and 1 practical application were included in the intensive training programme. Training days were concluded with a summary of the daily activity performed with the purpose to strengthen key aspects.

The week was summed up with a Course Summary on Friday afternoon.
The trainees were asked to present in short the situation in their country, which helped the representative from the counties in the region to get useful information one from the other.
At the end of the training a detailed technical questionnaire was submitted to the trainees. It is an anonymous questionnaire. The purpose is to verify and evaluate the degree of profit achieved during the course. It is also an indicator of the effectiveness of the performed transfer of knowledge.
The training material was organised for each trainee in a dedicated folder printed out in advance and distributed to the trainees.

Conclusions - The regional training course was carried out covering all topics of the program, providing effective examples and experiences, keeping the focus on the regulatory perspective.

The trainees 23 trainees, came from NRAs and TSOs from 13 different countries from the region. actively contributed with their questioning attitude to create a good atmosphere for an effective transfer of knowledge.

The trainees appreciated the program and content of the training showing high interest and expressing their view and considerations. The Practical Application was of particular interest for them. They have thanked the organisers and the EC for the opportunity given to take part in such a regional event, which gave them the possibility to establish contacts with their colleagues from the region.

The technical questionnaire was submitted to the trainees during the last day afternoon. It was individually filled in.

Each trainee was asked to express his/her opinion and remarks on the course to be used for feedback and improvement.

The training material has been provided in paper copy (folder) since the start of the course, to give the possibility to take notes and facilitate the comprehension of the presentations. The electronic copy of all material was distributed at the end.

ANNEXES

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

Bizerte, 23.09.2016

A. Madonna (TPL)

N. Zeleznik (Course Coordinator)

Name	Country & Organiz.	Signature
Mr. Thayer Ismael Jassim	Iraq (RNSD)	
Mr. Reda Ahmed	Libya (NRO)	
Mr. Giuma Abu Ali	Libya (NRO)	

Name	Country & Organiz.	Signature
Mr. Sufyan Salah Al Masalati	Libya (TNRC)	
Mr. Ishagh Mohamed Moussa	Mauritania (RNSS)	
Mr. ismail Haroub	Palestine (MOH)	
Mr. Hasan Al Najar	Bahrain (SCE)	
Ms. Zineb El Faicali	Morocco (CNRP)	
Mr. Alaaddin Alnajjar	Jordan (JEAC)	
Mr. Mohamed Utoom	Jordan (JEAC)	
Mr. Mohamed Seed Ahmed	Sudan (SAEC)	
Mr. Bokhari Moneir	Sudan (SNRRA)	
Mr. Yasser Ahmed Ali Ahmed	Egypt (ENRRA)	
Mr. Abdulaziz Saad Bin Shaman	Saudi Arabia (King Abdullah City for A&RE)	
Mr. Sami Ibrahem Alshathry	Saudi Arabia (King Abdullah City for A&RE)	
Ms. Hager Kamoun	Tunisia (Hopital d'enfants Bechir Hamza)	
Mr. Tahar Hamida	Tunisia (CNSTN)	
Mr. Noureddine Toumi	Tunisia (CNRP)	
Mr. Chedi Bahleli	Tunisia (Civil Protection)	
Mr. Mohamed Mnasser	Tunisia (Civil Protection)	
Mr. Saeel Hasan Alraba	Yemen (NAEC)	
Mr. Rashed Seoud Al Hajri	Qatar (MME)	
Mr. Mohammed Abdullah Marri	Qatar (MME)	
Mr. Anis Oueslati	Tunisia (civil protection)	