

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 10th Regional Training Course

Sub-Task 2.1: Regional Trainings – 10th Regional Training Course

“Regulation of Uranium Mining”
November 1 – 5, 2016 – Ulaanbaatar

Minutes

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Objective of the Training – The one week Regional Training Course (RTC) had the objective to present and discuss the different requirements and regulatory aspects concerning the uranium mining and milling activities.

16 trainees, staff of NRAs and TSOs from 3 different countries from the region, namely: Kyrgyzstan (4), Mongolia (10) and Tajikistan (2) took part in the Regional Training Course.

Unfortunately the 4 trainees from Iran, already approved, didn't got the permission on time from their government to participate in the training.

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.

Synthesis of the training activity - The training was opened with the welcome from the Deputy Chairman of the Mongolian Inspectorate GASI (having the function of nuclear regulator).

The Technical Project Leader Mr. Antonio Madonna (ITER) introduced the EC program for nuclear safety cooperation, the objective of the T&T project, the objective of the training course and its

program, which includes a technical visit to the U mining site of Dulahtu in the Gobi desert managed by Areva and its subsidiary Cogeboli. 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 of trainees and trainers during the training implementation.

In the initial part of the training an overview of the EU legal infrastructure of nuclear and radiation safety was given together with a focussed presentation of the role and responsibility of the NRA (Nuclear Regulatory Authority).

Topics as uranium natural resources, different kinds of mines, technological processes for mining, milling and management of mining waste and tailings were presented and discussed with reference to today achieved experience. The important issues of safety conception, radiation protection and environmental impact assessment during the various phases of exploration, site preparation, construction, operation, decommissioning and release from regulatory control. Occupational safety aspects and public exposure connected with uranium mine operation and subsequent decommissioning were outlined too including site remediation, long term monitoring and maintenance of closed mines.

The importance of the public involvement has been the subject of a specific presentation focussing on the role of the Regulator to provide public information and communication.

During the training 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)
- Uranium resources and mineralization of Mongolia
- Uranium resources and mining processes
- Different kinds of mines. Open pit and underground mining
- Technological processes for extraction of uranium and following processes
- Tailings management
- Uranium mining legislation references
- Occupational safety in uranium mining
- Radiation protection aspects and requirements for workers
- Transport activities related to U mining activities
- Emergency preparedness for U mining sites
- Safety requirements for U Mining
- International safety requirements
- Authorization process and content of SAR for licensing of mining and milling activities
- Decommissioning of U mining facilities
- Rehabilitation of U mining sites
- Remediation, long-term monitoring and maintenance of the closed uranium mine
- Public information

- Environmental impact from uranium mining, conversion and enrichment activities
- Lessons learned from operational experience of U mining sites

Questions from the trainees were welcomed during the presentations to clarify basic concepts and provide additional information when needed. The Project Leader from ITER-Consult organized frequent summary of training portions in order to consolidate the understanding and also translate in Mongolian language for the further benefit of local trainees.

The site visit at Dulaan Uul discovered deposit (about 500 km from Ulaanbataar) was organized with the support of GASI and the availability of Areva to host it. It was a unique experience for all participants to see the site where an exploration and feasibility activity to extract uranium with the ISR technique (In Situ Recovery of Uranium) was recently completed. The visit included the location of injection wells where moderate acid leaching solution is injected underground in the deep aquifer and the production wells delivering the pumped flow from underground to a set of ion exchange resins to fix the leached U. Areva completed the visit with two presentations (Ms N. Nansalmaa and one senior officer for chemistry) related to ISR technology, performed exploration, environmental impact assessment (baseline and post exploration monitoring) and aspects of occupational safety.

ITER Project leader, on behalf of the EC, thanked Areva for the kind hospitality and availability to show their facilities.

The training week topics, which were presented and discussed in details are listed in Annex 3.

In numbers: 5 different lecturers (EU and Local experts) for a total of 22 lectures/presentations were included in the intensive training programme.

At the end of the training a detailed technical questionnaire was submitted to the trainees. The purpose was 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 available in paper copy in advance and electronic at the need.

Conclusions - The training activity was carried out covering all topics from the program and the onsite visit at Dulaan Uul very useful. The trainees actively contributed with their questioning attitude to create a good atmosphere for acquiring of information and collaboration with the lecturers. The lecturers were all making their efforts to ensure effective transfer of knowledge.

The trainees appreciated the program and content of the training showing high interest and expressing their view and considerations. The site visit was of particular interest for them. The

trainees thanked the organisers and the EC for the opportunity given to take part in such a Regional training Course, which gave them also the possibility to establish contacts with their colleagues from the region and visit an U mining site.

The multiple choice technical questionnaire was submitted to the trainees and filled by each of them.

Each trainee was asked to express his/her opinion and remarks on the course to be used for feedback and improvement. Finally the trainees received their certification and were provided with the training material in electronic and paper folder, the latter being available since the first day allowing them to better follow the presentations and take notes.

ANNEXES

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

Ulaanbaatar, 05.11.2016



A. Madonna (TPL)

D. Zuzaan (course coordinator)

Name	Country & Organiz.	Signature
Ms. Gulnura Abasova	Kyrgyzstan/Tailings Management Agency under the Ministry of Emergency Situations	
Mr. Nurazhi Kochkorov	Kyrgyzstan/Ministry of Emergency Situations	
Mr. Eldiir Tursunakunov	Kyrgyzstan/Department of Jumgal region, Ministry of Emergency Situations	
Mr. Mirlan Mairambek Uulu	Kurgyzstan/State Inspection of Environmental and Technical Safety	
Mr. Adiaysuren Tsedendamba	Mongolia/General Agency for Specialized Inspection (GASI) -	
Mr. Altankhuyag Dorjyunden	Mongolia/Ministry of Mineral Resources and Energy, Ministry of Mining Mongolia	
Ms. Tseveensuren Nyam-Osor	Mongolia/General Agency for Specialized Inspection (GASI)	



Name	Country & Organiz.	Signature
Ms. Tserenchimeg Erdenebold	Mongolia/General Agency for Specialized Inspection (GASI)	
Mr. Otgon Zagd	Mongolia/General Agency for Specialized Inspection (GASI)	
Mr. Oyunbolor Galnemekh	Mongolia/Nuclear energy commission of Mongolia	
Ms. Munkhtsetseg Baldandorj	Mongolia/General Agency for Specialized Inspection (GASI)	
Mr. Amarsanaa Choimbol	Mongolia/General Agency for Specialized Inspection (GASI)	name
Mr. Batkhoo Sanjaajamts	Mongolia/General Agency for Specialized Inspection (GASI)	
Mr. Bat-Ochir Ganbold	Mongolia/Agency for specialized inspection of the Sukhbaatar Aimag	
Mr. Begmurot Boboev	Tajikistan/Sogd Branch of Nuclear and Radiation Safety Agency	
Mr. Vaysidin Saidov	Tajikistan/Nuclear and Radiation Safety Agency	