

Training and Tutoring for experts of Nuclear Regulatory Authorities and their TSOs for developing or strengthening their regulatory and technical capabilities

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Introduction

The Consortium led by ITER – Consult has been carrying out the EU Financed Project Training & Tutoring (INSC MC.03/10 LOT1) with the aim to enhance, develop or strengthen Technical and Regulatory capacities of the staff of Nuclear Regulatory Authorities (NRAs) and their TSOs of the different Partner Countries.



Training & Tutoring activity

The project activity started soon after the Inception Meeting by developing the **National Training Plans** of the Partner Countries and continued with the development of detailed training/tutoring programs, their organization, implementation and evaluation.

Thirteen training courses on nuclear and radiation safety topics have been implemented since 2012, for an overall duration of **13 weeks**. Ten of them developed as “dedicated” and three adopted as “existing” training course at STUK. The training courses included the first “regional course” of the EC Project, organized in cooperation with ANNuR (Arab Network of Nuclear Regulators) and carried out in Hammamet (Tunisia) in April 2013 with participation of 26 trainees.



Up to now a total number of **151 trainees** coming from NRA/TSO of 15 partner countries have been involved in the training activity.

In the regional course in Hammamet “non-partner countries” members of ANNuR network were included:

Libya (3 trainees), Mauritania (3 trainees), Sudan (4 trainees), Tunisia (3 trainees), Yemen (4 trainees).

Nine tutoring courses have been carried out at NRAs/ TSOs headquarters in EU (ISPRa/ITER, SNSA/JSI, STUK, SCK-CEN, BNRA) for an overall duration of **16 months**. Normally two selected staff from the PCs participated in each tutoring course for a total of **19 persons** coming from NRA of Ukraine, Brazil, Vietnam, Mexico, Armenia, Belarus, Jordan, Indonesia, Philippines, Malaysia and Iraq. A **total of 34 man-month** of tutoring activity has been implemented up to now.

The following **Partner Countries** are benefiting of the T&T activity (In parenthesis the provided trainees):

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|------------------|---------------------|
| 1. Armenia (12) | 9. Mexico (8) |
| 2. Belarus (16) | 10. Morocco (5) |
| 3. Brazil (13) | 11. Nigeria (1) |
| 4. Egypt (13) | 12. Philippines (7) |
| 5. Indonesia (8) | 13. Tajikistan (0) |
| 6. Iraq (4) | 14. Ukraine (10) |
| 7. Jordan (12) | 15. Vietnam (17) |
| 8. Malaysia (8) | |

From the Consultant side **about 94 senior experts** belonging to the partners of our project team (NRAs, TSOs and research institutes) have contributed to the activity performed.



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Abstract

Capacity building for staff of nuclear regulators represents a key achievement to set up an effective nuclear infrastructure in countries operating or developing a nuclear program.

Nuclear Regulatory Authorities (NRA) and their Technical Support Organization (TSO) need to develop a wide range of professional capacities including: legal-regulatory framework; roles & responsibilities; safety objectives and requirements; licensing process; technological aspects of nuclear facilities; analytical tools for independent assessment, regulatory inspection; physical protection; emergency preparedness; public communication.

Training and tutoring (T&T) on these topics need to be specifically planned and implemented by professionals having senior experience as regulators and TSO. The training activity shall be carried out with the view and perspective of the regulatory role and function.

The tutoring needs to be carried out at NRA or TSO headquarter with progressive involvement in concrete activity to effectively transfer approach and working methods.

These basic elements have been adopted and implemented while carrying out the activities of the “INSC Project MC.03/10: Training and Tutoring for experts of the NRAs and their TSOs for developing or strengthening their regulatory and technical capabilities - Lot 1” **financed by the European Commission**.

Consortium members



T&T project objective and expected results

Project objective:

The main objective is the enhancement of capacities of Nuclear Regulatory Authorities (NRA) of the Partner Countries, including their Technical Support Organizations (TSO), in order to allow the NRAs to become reasonably self-sufficient in terms of management and technical capacity.

Specific objective:

The specific objectives consist in enhancing the capability of NRA's staff, and of their supporting TSOs, to conduct independent in depth assessment and review of safety cases, to conduct inspections, to issue regulations and guides and to manage the authorization process and related decision making. These specific objectives are ensured by the programming and implementation of training and tutoring (T&T) activities based on the needs of the partner countries.

Expected and achieved results:

- Training and Tutoring (T&T) of staff of Nuclear Regulatory Authorities including their TSO;
- Developing a toolkit of training modules on the aspects of Nuclear and Radiation Safety;
- Promoting cooperation of Nuclear Regulatory Authorities between the EU and partner countries by exchange of experience.

More specifically the following has been achieved:

- Transfer of EU best practices for regulating nuclear and radiation safety;
- Promote the nuclear regulator role, functions and its independence
- Establish relations among partner countries and with EU member states ;
- Elaborate the “EU cooperation national training plan” for each partner country;
- Create a dedicated Website servicing the partner countries for their training needs;
- Train the staff from NRAs and TSOs of partner countries;
- Enhance the institutional capacity in partner countries;
- Complement training with tutoring courses;
- Elaborate appropriate and comprehensive training material.

Conclusions

The Project is going to the end in December 2014, so it's time to evaluations. The results will be officially presented to all the stakeholders involved, at the final meeting, that will be held in Brussels on November 4 - 5, 2014. Here below there are conclusions about achieved results and correct implementation of the project.

The project activities have been fully and effectively implemented according to the initial planning, expects results and with optimization of use of the budget.

The effectiveness being referred to the transferred knowledge, approaches and capacity for the major functions of authorization, review and assessment, inspection and enforcement, issue of regulations and guides.

The constant relation of the Consultant with the PC's has shown to be a key aspect for the successful implementation of the project together with the extensive experience of our project team having the possibility to rely on a significant number of NRA-TSO organizations and in particular on 4 Regulators contributing not only to the training but primarily to the tutoring activity having the unique know-how and responsibility on regulatory licensing and inspections.

In partner countries entering a nuclear program it is of the utmost importance to transfer know-how and promote the correct interpretation of the role and function of the NRA and its independence from the other stakeholders.

It is recommended the importance to have from the PCs feedback on how the attendance to the T&T activities has been effective in filling their gaps in competence and enhancing their capacity.



Achieving Effectiveness

For successful implementation of the project, a key factor is the extensive experience of the LOT1 project team in the regulatory and licensing functions having the possibility to rely on a significant number of NRA-TSO organizations and in particular on 4 Regulators (BNRA, ISPRa, SNSA, STUK) contributing to ensure ad hoc tutoring activity including regulatory oversight.



The evaluation and feedback from T&T courses has confirmed that:

A) Regarding organization and implementation:

- T&T courses for staff of NRA need to be developed mainly in a dedicated approach: it is hard to find trainings on the market meeting the specific needs of NRA and TSO;
- The training activity needs to be conducted by senior lecturers with long experience in NRA and TSO activity in particular for lectures on regulatory licensing and inspection activity;
- The T&T activity needs to maintain continuous focus on the role and responsibilities of the NRA paying attention to the organization and internal process of the NRA;
- It is important to have in the project team sufficient human resources (and facilities) as Regulators and TSO to face the T&T needs and offer the best contents and services;
- It is useful to complement, whenever possible, training with tutoring.



B) Regarding the conduct of training, the importance of:

- Setting clearly goal and objective for T&T courses tailored for NRA role and functions;
- Ensuring sufficient background and basic competence of the trainees;
- Adopting methods of delivery combining effectively training content and process;
- Promoting continuous interaction with the trainees;
- Presenting and analyzing case studies opportunely selected;
- Performing practical applications in subgroups;
- Promoting discussion and multilateral communication;
- Creating a positive atmosphere in which also the trainees take the responsibility for the training outcomes;
- Performing final evaluation of the T&T courses and feeding back the identified improvements;
- Complementing training with site visits.

The technical final questionnaires (40 - 60 questions submitted to the trainees at the end of each course to check the learning level) have provided indication of correct answers ranging as average between 70 and 89 per cent with constant increase in effectiveness.

The EU visibility has been constantly ensured in all performed T&T activity promoting and disseminating: the EU legal framework for nuclear and radiation safety, the EU approaches and practices for regulatory and technical support functions.

