23rd WiN Global Annual Conference - Women in Nuclear Meet Atoms for Peace
Monday, 24 August 2015 – Friday, 28 August 2015
IAEA, Vienna International Centre (VIC) Vienna, Austria

Enhancement of training capabilities in VVER technology through establishment of VVER training academy

Marinela Ilieva – Risk Engineering Ltd., Bulgaria, marinela.ilieva@riskeng.bg
Rossitza Miteva – Risk Engineering Ltd., Bulgaria; rossitza.miteva@riskeng.bg

INTRODUCTION

Education and training (E&T) have always been key factor to the sustainability of the nuclear industry. With regard to E&T it is still the challenge to raise the interest of qualified young people of studies and professions related to nuclear technologies.
CORONA Project consists of two parts: CORONA I (2011-2014) "Establishment of a regional center of competence for VVER technology and Nuclear Applications", co-financed by the EC Framework Program 7 and CORONA II "Enhancement of training capabilities in VVER technology through establishment of VVER training academy", co-financed by the EURATOM 2014-2015 Working program of HORIZON 2020.

PROJECT OBJECTIVES

The basis of CORONA I project is to provide a special purpose structure for training and qualification of personnel for serving VVER technology as one of nuclear power options used in EU. Such approach should allow unifying existing VVER related training schemes according to IAEA standards and commonly accepted criteria recognized in EU. The project is focused on development of training schemes for VVER nuclear professionals, subcontractors, students and for non-nuclear specialists working in support of nuclear applications as civil engineers, physical protection employees, government employees, secondary school teachers, journalists. Safety culture and soft skills training are incorporated as an integral part of all training schemes because they require continuous consideration. It is vital for the acceptance of nuclear energy by the public and for the safe performance of the nuclear installations.
The structure is based on three general pillars:
1) Training schemes for VVER nuclear professionals; for non-nuclear specialists and subcontractors, involved in nuclear sector; and for students;
2) VVER related knowledge management system, which will accumulate information regarding design data, operational experience, training materials, etc.
3) Specialized regional training center for supporting VVER customers with theoretical and practical training sessions, training materials and general and special assignment training tools and facilities.
CORONA II project aims at continuation of the European cooperation and support in this area for preservation and further development of expertise in the nuclear field by improvement of higher education and training. It is to proceed with the development of state-of-the-art virtual training center - CORONA Academy. This objective will be realized through networking between universities, research organisations, regulatory bodies, industry and any other organisations involved in the application of nuclear science, ionising radiation and nuclear safety. It will bring together the most experienced trainers and will allow trainees from different locations to access the needed knowledge on demand.

ACHIEVEMENTS AND FUTURE ENHANCEMENTS

DEVELOPMENT OF COMPLETE SET OF TRAINING SCHEMES

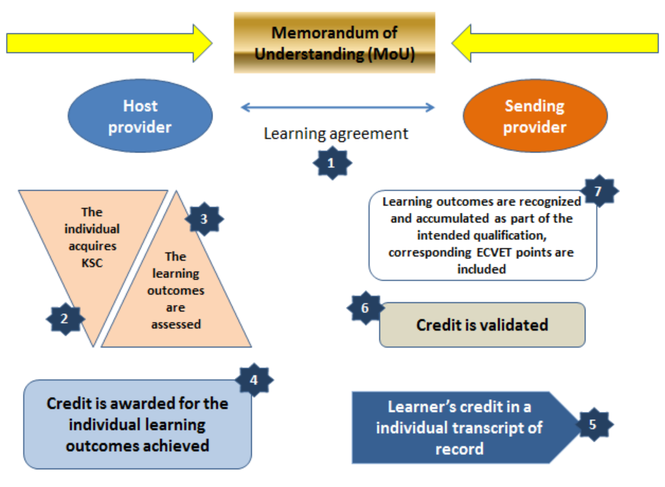
After the identification of the training schemes the objective was to develop training programs and training materials for the target group as well as to conduct a pilot training. For each target group the following was done:
✓ Development of training programs and training materials;
✓ Deliver a pilot training;
✓ Validate the training program.

Evaluation of the training programs was carried out through the pilot courses. The pilot training results provided valuable outcome of the training program ability to give specialized knowledge so that the learning outcomes to be tailored to the VVER technology training needs and to be a base for appropriate competence acquiring.

The CORONA II project will commence with analysis of the evaluation of the pilot trainings and of proposed corrective measures done in CORONA project. Based on this analysis the partners will elaborate a list of training schemes, programs and courses which should be improved or newly developed in order to make an explicit and comprehensive set of training programs, which cover all areas of training courses necessary for training of the target groups.

IMPLEMENTATION OF ECVET

ECVET is a system of accumulation and transfer of credits designed for vocational education and training in Europe. It enables recognizing and recording of the learning achievement/ outcomes of the individual engaged in a learning pathway leading to a qualification, a vocational diploma or certificate. ECVET is based on the description of qualifications in terms of knowledge, skills and wider competences, organised into units (that can be transferred and accumulated), and the allocation of credit points to qualifications and units depending on their relative weight.



ECVET implementation requires collaboration between a wide range of education and training stakeholders.

The steps which will be taken are:
✓ Select one particular job for pilot implementation, which is subject to increased mobility:
✓ Define competence requirements (KSCs and LO) for this qualification;
✓ Select appropriate training scheme for this qualification, based on the defined units of learning outcomes (LO);
✓ Select two utilities playing the roles of sending and host provider and organization playing the role for competent authority;
✓ Perform at least one pilot training on selected course;
✓ Recognise LO, perform validation. Validation means a process of confirmation by an authorised body that an individual has acquired learning outcomes measured against a relevant standard. Introduce training passport/certificate;
✓ Evaluate results and propose corrective measures.

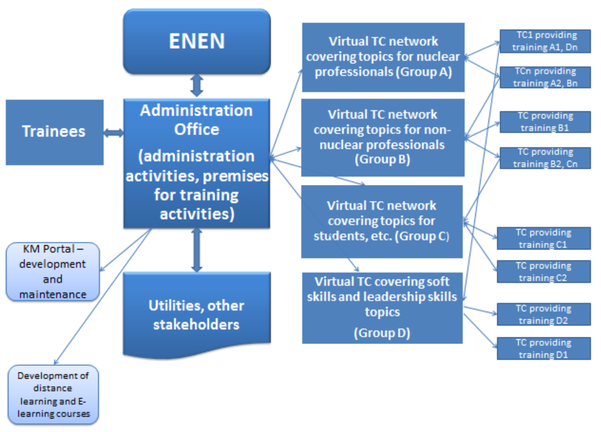
CREATION OF KNOWLEDGE MANAGEMENT PORTAL

The knowledge management portal developed in the first phase of the CORONA project provided a structured system for easy, computer based access to VVER related information and knowledge resources in a collaborative environment. It comprised news from the nuclear industry, information on VVER reactors, training resources from Project CORONA and other available sources, collaboration tools that help bring the VVER community together and other key information from Project CORONA. It also provided a document repository for all the training material, available to access only to the project consortium members.

Information i. News ii. VVER Reactor Information	**Education** i. Training resources from Project CORONA ii. Links to external E&T providers iii. Knowledge Resources
Collaboration i. Discussion Forums ii. Blogs iii. Social networks	**About Project CORONA** i. Overview ii. Work Packages iii. Project Participants iv. Achieved Results v. Reference Documents vi. Contact Us

SUSTAINABILITY OF VVER EDUCATION AND TRAINING ASSOCIATION (CORONA ACADEMY)

Based on the results of CORONA project it was concluded that the idea for VVER Education and Training Centre has a great potential for development and has to be explored further. After a numerous discussions held during the CORONA project meetings between partners the idea was transformed and enhanced in order to meet the changed requirements in the partners' vision.



Proposed organizational structure of CORONA Academy

Integration to the ENEN structure

The sustainability of education and training efforts in VVER technology cannot be effective without a permanent structure that assures its follow-up and its survey. In this frame the integration to ENEN Association could be instrumental. The ENEN approach to education and training, originally in nuclear engineering, based on
(i) modularity of courses and common qualification criteria,
(ii) common mutual recognition system,
(iii) facilitation of mobility for trainers and trainees across the EU, and
(iv) feedback from the 'employers' is quite similar to the one envisaged by the CORONA II project.

International Collaboration

The European Commission has set up bilateral agreements between the European Union and industrialised countries outside Europe focused on academic cooperation and student mobility. Most notably with the Russian Federation with the existing agreement EURATOM – ROSATOM, under which the ENEN RU and ENEN RU II programmes provide support to a consortia of higher education and training institutions working together to improve their educational services, to compare and modernise curricula and to develop joint study programmes with recognition of credits and qualifications. Tacking advantage from this opportunity the CORONA consortium will benefit from this initiative opening the door to tighter cooperation with relevant Russian institutions and partners through different existing projects and collaboration in all fields.