

TOPIC: SESSION 5

Students Education and Training for Slovak NPP

J. Lipka, V. Slugen, J. Hascik, M. Miglierini

Department of Nuclear Physics and Technology, Slovak University of Technology,
Bratislava, Slovakia

E-Mail Address: Lipka@elf.stuba.sk

Preparation of operating staff for nuclear industry is and also has to be one of the most serious education processes mainly in the Central-European countries where about 40-50 % of electricity is produced in nuclear power plants. In the central-European Region exists a very extensive and also effective international collaboration in nuclear industry and education. Similarly good situation is also on the level of universities and technical high schools in this area. Slovak university of technology Bratislava established contacts with many universities in abroad in utilization of research and training reactors.

Slovak University of Technology is the largest and also oldest technological university in Slovakia. Surely more than 50% of high-educated technicians who work nowadays in nuclear industry graduated from this university. Its importance increased in the last few years because after political changes there is a small interest in study at Russian and Czech universities, where traditionally a lot of technicians graduated in the past.

In every specialisation there are fixed number of compulsory subjects. Also each of 17 Departments offers a group of optional subjects, from which every student can choose a subgroup of courses that interest them most and relate to their future specialisation. Some optional subjects can be studied at another university or university abroad. Excellent students from all specialisations can surely find jobs in nuclear industry, but for the operating staff it is recommended to study Power Plant Engineering and Power electronics. There is a possibility (beside the obligatory subjects) to choose a batch of 12 optional subjects focused on peaceful use of nuclear energy. Individual works of students (annual projects, diploma theses) in which they consult the independently earned knowledge with supervisors and experts from practice is very important [1]. An extension of total study-length to 5,5 years created space for more precise elaboration of diploma thesis.

In addition to regular academic education we perform post-gradual courses: "Safety aspects of NPP operation". The main goal is to increase safety culture of NPP operation and target groups are operation staff of NPP, NRA officers, nuclear safety specialists – all graduated from technical universities with at least two years practice in nuclear industry.

On international level we organised the 4 weeks "IAEA Regional Training Course on Safety, Management and Utilization of Research Reactors" which was held in Bratislava

(Slovakia) and Vienna (Austria) during March 05-30th 2001. IAEA in co-operation with the Department of Nuclear Physics and Technology of the Slovak University of Technology and the Atominstitut of Austrian Universities Vienna prepared and realized this training course with the aim to train junior staff from research reactors in various aspects of safety, management and utilization of research reactors.

All participants had to have at least 4 years experiences in operation, management, utilization or regulation of research reactors. Lectures covered the topics in nuclear design and operation, neutron physics, reactor physics, health physics, dosimetry, reactor instrumentation, fuel management decontamination procedures, preparation of experiments at research reactors and others. Beside theoretical part of the course, the practical exercises at TRIGA II reactor in Vienna constituted an important part of training. The course was held in English for participants from 6 countries (Slovakia, Russia, Romania, Hungary, Ukraine, Turkey) and thank support of IAEA was fully provided with textbooks and laboratory guides.

This year we take part via students and 2 professors the second run of the Eugene Wiegner course establishing in frame of ENEN project. According to international experiences obtained during the last 3 years, we created The Slovak Nuclear Education Network (SNEN) which is supervised at our Department. Coordination of nuclear education is essentially important on the regional level.

Several specific features characterize education system in nuclear power engineering in Slovakia. Many of them were caused due to previous development in this field. Nevertheless, this system achieved certain level of quality, which has been confirmed not only through IAEA missions, but also in technical activities of organizations functioning in nuclear area. Slovak University of Technology is ready and would like to contribute to this system also in the future and hopefully on the international level [2].

[1] SLUGEN, V., KUČHTA, L., DUGOVIĆ, M., URBAN, F., Preparation of operating staff for the nuclear power plant, EE - Odborný časopis pre elektrotechniku a energetiku, **4** 5 (1998) 52 (in Slovak).

[2] SLUGEN, V., LIPKA, J., HASCÍK, J., STU Education Program in Nuclear Physics Focused for Nuclear Industry Needs. Physics Education, **17** (2000) 13.