

Czech young generation activities in nuclear training and education framework in the Czech Republic

J. Matejkova, S. Foral, J. Varmuza & K. Katovsky

Brno University of Technology, Faculty of Electrical Engineering and Communication.

INTRODUCTION

The Czech Republic has a long tradition in nuclear power production. One third of Czech electricity production is generated in two nuclear power plants, Dukovany and Temelin, totaling six power reactors. There are also three non-power, research reactors: two zero power reactors for education and research support, and one material testing reactor (MTR) used mainly for radioisotopes production. One of zero power reactors is employed by the Czech Technical University in Prague for education and research purposes, other zero power reactor and MTR are situated at nuclear research complex in Rez.

The Czech nuclear industry has a long tradition and wide experiences. However is Czech nuclear industry much wider, the most notable companies are SKODA JS (producer of RPVs, reactor internals, storage casks for spent fuel, engineering services, and maintenance services), VITKOVICE Group (producer of large-scale heat exchangers, especially steam generators) and SKODA Power – DOOSAN (turbines vendor).

The Czech Nuclear Society (CNS) gives a framework to nuclear activities in the Czech Republic. It assembles specialists, professionals from industry, research centers, and academia. The Young Generation of the Czech Nuclear Society is common YG in nuclear movement for young people up to age of 35 years.



Figure 1. Presentation at The Saint Nicolas Meeting.

YOUNG GENERATION OF CZECH NUCLEAR SOCIETY

Czech Young Generation (CYG) founded at 1997 gives its members an opportunity to meet people with the same interest, exchange experiences and especially helps them bridge generations gap toward senior professionals. The CYG regularly organizes seminars, meetings, conferences and helps with public involvement on the field of nuclear energy.

The Saint Nicolas Meeting is CYG flagship and most successful event, it is annually held since 2001. The meeting lasts three days and takes place at Brno University of Technology at beginning of December, on St. Nicolas Day. The best bachelor and master theses on field of nuclear power are awarded by

CNS and presented on the meeting, along with papers from other participants. Young professional has the opportunity to present their work (Figure 1) and get feedback from meeting participants. Part of the conference is devoted for presentations of meeting guests high-class specialists in the nuclear energy. In the history of St. Nicholas meeting, guests came from Westinghouse, Rosatom, CEZ (operator of Czech nuclear power plants) and chairperson of State Office for Nuclear Safety Dana Drabova. Social activities are available at evenings for participants and last day of meeting is dedicated to the technical visit. In past years technical trips went to Training Center for operators of nuclear power plant, waste incineration plant or combined heat and power plant in Brno.



Figure 2. Screening of the film *Seconds from Disaster*.



Figure 3. Visit at Underground uranium mine.

Other regular activity is The April meeting which is scheduled at April. The main focus of the meeting is technical visit which gives members of CYG opportunity to obtain practical knowledge from some part of nuclear industry. In past April meetings, CYG visited places in the Czech Republic as SKODA JS, SKODA Power - DOOSAN, repository of radioactive waste or abroad as nuclear power plants at Slovakia and Hungary, training centers in Paks, Hungary and Vienna, Austria.

Another CYG activity is non-formal meeting of CYG and Slovak Young Generation (SNUS-YG), started at 2013 and held twice a year. The meeting is meant to be social event, where young professionals can speak and share their visions about nuclear cooperation between Czechs and Slovaks.

The latest activity is the movie screening, especially documents related to the nuclear topic as Fukushima accident. The first movie screening was dedicated to nuclear accident at Fukushima NPP (Figure 2). Discussions with expert are scheduled after the movie, with Vaclav Dostal from CTU Prague

speaking after the Fukushima movie. The public has an opportunity to meet professionals and ask questions about nuclear energy.

CYG also helps with organization of Summer School of Nuclear Engineering, summer event for students from all nuclear-related universities in the Czech Republic. Students have opportunity to learn more about nuclear energy, meet specialists in field, visit interesting places and meet new friends with the same interests at nuclear power, all in one week. The summer school regularly begins with visit of the underground uranium mine (Figure 3) and the chemical uranium ore processing plant with a large slurry lagoon. During the week students also visit nuclear power plant Temelin, especially the training and simulation room for operators of power plant. They have a unique opportunity to see the operators at work, usually in simulated nuclear accidents such as emergency shutdown of the reactor due to the failure of the main circulation pump. Lectures on nuclear power are under way all week. The lectures starts with basic topic and during week evolve

into topics about actual problem of nuclear power or special lecture given by specialists, for example from SKODA JS, ÚJV Rez, Faculty of Nuclear Sciences and Physical Engineering. Small, nuclear-related competitions and games continue to fill the gaps between lectures and help to practice knowledge learnt in lectures. Similarly, movies on nuclear topics are projected in the evenings. The whole week of the summer school is full of activities and helps students to open door to nuclear community.

OTHER ACTIVITIES

Summer school and other activities of CYG are not the only activities for young people interested in nuclear power in the Czech Republic.

CEZ organizes traineeships called The Nuclear Exam for student from high school. It lasts three days and program is packed with lectures, visits and discussions. At the end of The Nuclear Exam, students take an exam, with results in possible future cooperation for the best participants.

Another activity for high school and university student is weeklong The Day with Nucleus. It takes place at nuclear research center in Rez, where students can improve their knowledge in form of lectures and experiments performed on the research reactors.

The Summer University is also organized by CEZ and is situated at both nuclear power plants in the Czech Republic. Students have the opportunity to see the whole plant very thoroughly as they visit primary circuit, secondary circuit, cooling tower and storage for spent fuel.

REFERENCES

- [1] Czech Young Generation [online]. Available at: <http://www.csvts.cz/spolecnosti/cns/cyg/>.
- [2] The Summer School of Nuclear Engineering [online], Available at: <http://www.lsji.cz>
- [3] The Nuclear Exam [online]. Available at: <http://www.kdejinde.cz/cs/studenti/jaderna-maturita.html>.
- [4] The Day with Nucleus [online]. Available at: <http://densjadrem.cz/den-s-jadrem-2014/>.
- [5] The Summer university [online]. Available at: <http://www.kdejinde.cz/cs/studenti/letni-univerzita.html>. ■