

ENYGF 2011 Prague

The biennial European Nuclear Young Generation Forum was held in Prague from 17th -22nd May. It brought together nearly 200 individuals from over 20 countries in Europe, each one coming from diverse backgrounds within the industry, ranging from nuclear safety & legislations to control room operations, waste management & reprocessing to researchers working on advanced futuristic designs, not to mention the presence of some honourable experts from around the world in the forum with their valuable experiences and ideas/suggestions on the current shape of nuclear energy in the world.

The forum had several positive outcomes through its extensive lecture and presentation sessions; the most significant one I believe for all was the establishment of long term professional relations and networks for those young aspiring individuals who were invited. I consider this conference as an experience of a lifetime and it has truly been a great honour to be a part of this.

17.5

The evening was dedicated to the opening ceremony of the forum, which included a short presentation on the background & history of Czech Nuclear Society and the mother organisation, European Nuclear Society. The Jan Runermark award, which is named after the initiator of the Swedish Young Nuclear Society and a great supporter of the ENS young generation movement, Jan Runermark, was given to Austrian Mr. Helmuth Bock for his outstanding contribution and involvement in the industry for over 30 years. The event was organised back-to-back with another nuclear conference held earlier on the day, NESTet, which had its agenda focussed on education and training in the nuclear industry. There was ample time for all during the evening to socialise and meet like minded individuals with similar interests and backgrounds.

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This marked the official commencement of the conference. To open the session we had amongst us the highly honourable head of the state office of nuclear safety, Dana Drabova. She presented before an amateur audience of keen and enthusiastic young professionals an expert review of the crucial lessons learned and aftermath effects of the Fukushima Daiichi nuclear power plant incident earlier this year and emphasized the importance of nuclear safety in both short and long term operations of a reactor. The talk consisted of highlighting the existing physical barriers in present PWR designs and she also briefly stated the various levels of international safety standards.

Soon followed the oral presentation sessions where individuals sharing their areas of interests in front of a truly diverse audience. The presenters spoke on topics of nuclear safety & severe incidents, new builds and ITER & fusion. The talks generally focussed on specific areas of those subjects and having 4-5 of these for each of the topics broadly offered entirety for a variety of aspects within each of them. It was interesting to see how the aspiring youth show originality of ideas and in their point of views, providing a multi-faceted approach towards challenges and existing climate within the nuclear industry.



After a long and productive day it was time to explore the beautiful city of Prague with fellow group mates and the organisers of the forum, being lead by tour guides. We started off with exploring the Prague castle in-out which is known to be the largest castle in the world. After appreciating the intricate architecture and the colossal form of structure and design, we headed to savour the exquisite Czech cuisine and the infamous local beer!

19.5

This day was set for technical visits to various nuclear facilities in and around Prague. 5 groups were formed, each for a different facility amongst Richard Repository, Skoda manufacturing plant, Research reactor institute, CTU Training reactors and the institute of plasma physics. The key inspiration of the day being acquaintance to practical aspects of the industry by kinaesthetic immersion for all delegates particularly young nuclear professionals. A brief description for all the nuclear facilities within the programme of the forum is as follows.

- a. Richard Radioactive Waste Repository – the Sellafield of Czech, having a total repository volume of 16,000 m³
- b. SKODA JS – leading engineering and productions' company with experience in service and construction of nuclear power plants with worldwide operation. (Including production equipment for VVER, PWR, BWR, and RBMK nuclear power plants).
- c. Training reactor VR-1 – unique facility for young and new entrants in the nuclear field. Consists of a light-water moderated reactor operated at maximum power of 1kW.
- d. Research reactor LVR-15 – specifically designed for research and experimental purposes, this serves nuclear professionals to gain better understanding of the power plant operations, reactor core physics, materials engineering etc.

- e. Institute of Plasma Physics – provides with an insight into the latest developments on Tokamak, JET and ITER type controlled fusions. A look into the COMPASS design is one of the highlights too.

I would like to mention a few interesting occasions I came across on my visit to the research reactor institute. The first thing upon arrival was a talk by a professor from the institute itself, about the current operating plants in Czech, Dukovany and Temelin, and about relations of the Czech Republic with the rest of Europe as far as nuclear power is concerned and the reputation of the research institute amongst all of this. Then the group proceeded to look into the institute's two reactors namely, LR-0 and LVR-15. Unfortunately, we were asked to leave our gadgets at the reception hence the pictures are all in the mind.



Research reactor LVR-15 is the bigger and older of the two research reactors operated by Research Centre Řež plc, a subsidiary of Nuclear Research Institute in Řež. LVR-15 is a light-water moderated tank research reactor with radial beryllium reflector. Reactor licensed maximum thermal power is 10 MW. The reactor vessel (outer diameter 2300 mm, total height 6235 mm) is made of stainless steel, with the maximum coolant temperature at the reactor output of 51 °C. The reactor is equipped with several experimental set-ups and it serves mainly as radiation source. The main tasks carried out on LR-0 reactor are focused on measurement of neutron flux distribution along fuel pins and fuel assemblies and experimental verification of new fuel types performance. The only lowlight of the visit was that neither of the two reactors was in running conditions which is why the control room and others involved in the operations were not around. Still though, it was an experience worth having since the group managed to steal a look

into the reactor from the top and get into areas which would be otherwise restricted from entry.

20.5

The second and the final day of the oral presentations started with individuals talking on the educational and training necessity of the nuclear power generation and operations. It was comprehensively highlighted, and quite truly so, the need to spread the important message of the far reaching potentials of nuclear power with respect to the current fleet of nuclear plants and the future new builds. The underlining thought to be drawn from this is in fact what the message should be and the feasible ways in which the general public could comprehend the message organisations/authorities send across. The rest of the morning and afternoon focussed on the back end issues of nuclear power plants across Europe and the significance of effective waste management techniques.

A member of the US expert mission that was setup after the Fukushima incident, was invited and he gave a comprehensive background and understanding of the 'real thing' which shook the entire nation and spread its shockwaves throughout the world. With plenty of supporting data and information which he collected while his stay in Japan most of last month, he provided some disturbing truth on the immediate and long term affects as a consequence of the incident.

With the closing ceremony of the session, the evening had something special in store for all. Special since we had a large paddle boat booked for ourselves to take us the length of river Vltava and realize the magnificence of Prague city and get yet another opportunity to experience the appetizing gastronomy.





Apart from all of that, there were almost 30 posters displayed at the conference which also brought together the results of assiduous researchers and many diligent students on works including all forms of nuclear industry related works. Additional to the presentation sessions, the posters also contained the application of radioisotopes in the growing and rather promising field of nuclear medicine. It is always amazing to see the vast applicability of something as simple and concise as a nuclear reaction to have served its purposes in medical science too.

To conclude I think it is worth mentioning that the forum had two main motives of essentially bringing young generation of nuclear enthusiasts on a common platform to encourage networking, and secondly to allow a natural flow of knowledge and expertise from the industry stalwarts present in the forum, to the large audience comprising future employees and perhaps business leaders in the industry. The combination of these two crucial aspects has served as an eye-opener for most who attended and I believe all this was accomplished handsomely. Worth a note that merely the weeks' intermingling of talents and ideas from across the entire continent has certainly sowed the seeds to a brighter and safer prospect in the world of much-needed carbon-free energy production.