

European Nuclear Society - Higher Scientific Council

Position Paper: NESTet 2008 Conference, 4-8 May 2008, Budapest, Hungary

Professor Phil Beeley, ENS HSC

The OECD study in 2000, “Nuclear Education and Training...Cause for Concern”, highlighted the necessity for a renaissance in nuclear education and training and recommended the following:

- We must act now
- Strategic Role of Governments
- The Challenges of revitalising nuclear education
- Vigorous research and maintaining high quality training
- Benefits of Collaboration and Sharing Best Practices

The world has responded. From the Americas to Europe to Asia networks have been established to respond to the necessity to maintain and perpetuate nuclear knowledge in order to provide a suitably qualified workforce for the future operation of nuclear power plants.

The European Nuclear Society (ENS) also responded by launching the NEST^{et} conference that has been designed to facilitate the exchange of information, collaboration and the sharing of best practices in nuclear education and training in engineering science and technology as well as knowledge management in this energy sector. The NEST^{et} conference complements the American Nuclear Society (ANS) Conference on Nuclear Training and Education (CONTE) which was held in Florida in February 2007. The ANS and ENS have consequently signed a Level-2 agreement supporting each others conferences and agreeing to alternate on a biennial basis.

The Hungarian Nuclear Society, as a member of the European Nuclear Society took the initiative to offer Budapest as the host city for the very first NEST^{et} conference. Together with the Budapest University of Technology and Economics, the KFKI Atomic Energy Research Institute and the PAKS NPP, the Hungarian local organising committee has also organised technical visits to the PAKS nuclear reactor and to training and research reactors. The European Nuclear Education Network (ENEN), the International Atomic Energy Agency (IAEA), the Nuclear Energy Agency (NEA) and the ANS provided valuable cooperation during the organisation of this conference including an embedded IAEA workshop on Knowledge Management and the ENEN European Masters of Science in Nuclear Engineering certification ceremony.

The conference attracted over 130 participants from 29 countries: 20 European countries as well as delegates from the Canada, USA, South America (Argentina), Asia (Japan, Korea and Vietnam), Middle East (Israel, United Arab Emirates) and Africa (South Africa). In addition to key note speakers addressing important developments in education, training and knowledge management, a wide selection of papers were

presented in the areas of nuclear education, training programmes for industry, experimental facilities providing support for Education & Training (E&T), E&T networks, software tools, distance and e-learning and a variety of knowledge management activities. The IAEA had a special session dedicated to nuclear knowledge management and special sessions also focused on radiological protection and NUCLEONICA – the web portal for the nuclear sciences. The conference kicked off with the ENEN certification ceremony for those European students gaining the European Masters of Science in Nuclear Engineering during the previous academic year.

In total 72 oral presentations were given, including 6 key note speeches. Equally important were the 18 poster papers that addressed all the main areas covered by the conference. In addition to the description of specific E&T programmes from across the globe, a number of themes emerged from the conference as follows:

- National and regional academic networks have been developed in the Americas, Asia and Europe to meet workforce requirements.
- Nuclear industry has well established training programmes and more recently industrial – academic partnerships have been established to help to support the future skills requirements.
- Efforts are underway within many member states of the IAEA to preserve knowledge, to enhance knowledge sharing and access, to transfer knowledge to future generations and to build new knowledge for capacity building and to support innovation.

While many of the papers were focused towards nuclear fission related activities, it is noteworthy that a few papers addressed E&T for fusion and the European Fusion Education Network (FUSENET). While collectively the papers presented at NEST^{et} conveyed a very positive message, a number of challenges remain to meet the requirements for the future nuclear workforce. The projected global annual requirements for new nuclear engineers over the next 10 years will challenge existing academic and training institutions with respect to capacity and load factors on classrooms, laboratories and other facilities such as basic principles simulators. Additionally, the nuclear academic workforce may need to increase to meet the demand for educating/training the new industrial workforce and this will take time.

Within the European context many of the programmes described during this conference will continue through private and public funding as well as private-public partnerships. The continued development of a common qualification approach, mutual recognition of institutions across Europe, increased mobility of staff and students and the creation of strategic partnerships will help to develop a well skilled and mobile workforce to support the nuclear energy renaissance.

In conclusion, the first NEST^{et} conference was considered to be a success. The ENS has therefore declared that the next NEST^{et} will be held in 2010 and the feedback obtained from delegates at this event will be used to design an even better conference.