

## **NDA hosts global nuclear partnering meeting**

Over 70 people from some 17 countries attended a meeting of the Infrastructure Development Working Group (IDWG) of the Global Nuclear Energy Partnership (GNEP) held in Manchester between the 18<sup>th</sup> and 20<sup>th</sup> of May.

UK participants came from Department of Energy and Climate Change (DECC) and the Nuclear Decommissioning Authority (Phil Davies, John Mathieson, Graham Jonsson, Carl Dawson, Jenni Lee, Julie Brannon and Tracey Scott). DECC had also invited National Nuclear Laboratory (NNL), URENCO, UKAEA, Imperial College, the Dalton Institute, EPSRC and the Royal Society with the aim of addressing the Prime Minister's recent challenge to develop a partnership between industry, research and government in nuclear matters.

## **Background**

GNEP was established by the Bush Administration in 2007 to bring together countries that share a vision of expanding nuclear energy in a safe and secure manner. The UK signed up in February 2008 following the completion of the government's nuclear consultation, becoming the 21<sup>st</sup> member. Since then four further countries have joined. The members are diverse, ranging from the large nuclear powers: China, Russia and USA, to the small countries aspiring to implement nuclear power: Senegal, Jordan and Ghana for example. There are annual ministerial meetings, biannual steering group meetings and biannual meetings of the IDWG and the Reliable Nuclear Fuel Services (RNFS) Working Group. As well as member countries, Generation IV (GIF), IAEA and observer countries attend the meetings.

With the change in administration in the US, GNEP funding within the Department of Energy (DOE) has been diverted to the Advanced Fuel Cycle Initiative, but US backing for the international grouping is still very much there.

The NDA provides support to DECC on the GNEP groups through a memorandum of understanding. Adrian Simper is the lead NDA interface with DECC and further support comes from Nigel Couzens, Carl Dawson, Phil Davies, Graham Jonsson, John Mathieson and Nick Bold of INS.

The venue for the meeting was Manchester United's Old Trafford conference facilities which provided an impressive backdrop for the multinational audience who were also treated to a tour of the ground and museum (complete with the newly acquired Premiership trophy).

## **Agenda**

In addition to the routine IDWG business, the Manchester meeting covered three main areas: radioactive waste management, human resource development, and resources and gaps associated with utilizing small and medium sized reactors (SMR) (i.e. reactors of less than 700MW(e) capacity).

### **Waste management sub-group**

The waste management sub-group discussions were led by Phil Davies and focused on drafting GNEP position statements within the GNEP context on waste management initiatives and ideas, wasteform evolution with advances in science and engineering and the sharing of best practice and assistance to countries with no waste management infrastructure. It is intended to try and involve the International Young Generation Network (IYGN) in developing these statements. Other topics of interest in the sub-group meeting

were a history of the waste management infrastructure in Bulgaria (which the UK was instrumental in helping develop with other EU partners) and 20 years of progress in processing radioactive waste in the USDOE.

### **HR challenges**

On HR development, the meeting heard from a number of countries on issues and challenges being faced when implementing nuclear expansion. There are many education and skills initiatives going on around the world including Italy, France, Korea UK and US. It is interesting to note one of France's nuclear engineering courses is given in English.

From the UK, a presentation on a review of the UK's skills and resources across the nuclear energy sector was given by Brian Murphy of the Cogent Sector Skills Council. Also of interest, Los Alamos National Lab presented their HR modelling tool for nuclear expansion. In this session, Carl Dawson gave a brief overview of the NDA's graduate programme.

In addition to single country initiatives, we also heard from the European Nuclear Education Network. Future IDWG meetings will also engage with World Association of Nuclear Operators (WANO) and the World Nuclear University (WNU).

### **New countries**

One of GNEP's activities is to review the state of readiness of a country to be able to introduce nuclear power. The IAEA has 19 infrastructure milestones which need to be addressed before a plant is built. These include a having an adequate legislative, regulatory, safety, environmental and safeguards regime in place, appropriate financing schemes for building, decommissioning and waste management, HR development plans, stakeholder involvement, an appropriate electricity grid, and fuel cycle strategy. Jordan has recently been assessed but the findings not yet made public. A further request has come from Ghana whose assessment will commence in July 2009.

### **Small and medium-sized reactors**

The SMR session comprised a number of panel sessions covering Global Perspectives on SMR's, Certification, and the Status of Development and Infrastructure Requirements (chaired by John Mathieson). The meeting received an update of the development of SMRs with presentations being given by Westinghouse on their 335MW(e) International Reactor Innovative and Secure ("IRIS") and the 165 MW(e) Pebble Bed Modular Reactor ("PBMR");

the Korean Atomic Energy Research Institute's 90MW(e) System-integrated Modular Advanced Reactor ("SMART"); NuScale's 40 MW(e) prototype modular reactor, Toshiba's 10/50 MW(e) Super Safe, Small and Simple reactor ("4S") and Hyperion's 30MW(e) Hyperion Power Module ("HPM"). The modular reactors can be "linked" together to build up the necessary power supply requirement. NuScale's and Hyperions' reactors can be transported by truck with the latter being a \$30m sealed unit exchanged at the end of its 5-8 year life.

Small and medium-sized reactors are of special interest not only to countries with small energy requirements or low grid capability, but also to those who require units for particular projects such as district heating, desalination and oil sand processing. Within the GNEP context, the transferability of a reactor operating license in the country developing the reactor to a recipient country was of interest – regulators had most experience of licensing large reactors and there were liability issues associated with such transfers. It also appears that disposability of novel wasteforms required further work.

The infrastructure session considered grid capability, safeguards issues and HR and skills development. On the HR side, some countries were finding that the only way to ensure they had sufficient skills was to hire retirees.

### **Looking ahead**

By way of thanks for hosting the meeting, the NDA was presented with a commemorative clock by the US GNEP administration. John Mathieson accepted this on behalf of the NDA and in turn took the opportunity to thank Jenni Lee, Tracey Scott and Julie Brannon for their superb efforts in making the meeting a success.

The IDWG is beginning to gel and provide assistance to member countries. The next meeting of the IDWG will be held in Vienna and there will be a session on financing reactor build, decommissioning and waste management. For further information, copies of presentations and other notes, please contact John Mathieson.