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NUCLEAR AUSTRALIA

**QUARTERLY NEWSLETTER OF THE
AUSTRALIAN NUCLEAR ASSOCIATION**

EDITORIAL

The nuclear renaissance continues apace as reported in the last quarterly issue with continued expansion of nuclear power in Asia and some European countries but with deferment of some projects in the USA as a result of the global financial situation. The Australian government is still opposed to including nuclear power in the future energy mix and continues to rely on the development of “clean coal” technology supplemented by gas and a range of renewable technologies including solar, wind, hot rocks and biomass to many of which it is giving large subsidies. What the nuclear industry needs in Australia is not a subsidy but a level playing field, which would require the government to amend the two restrictive Commonwealth Acts which prohibit nuclear power and uranium upgrading. Only then would private industry be prepared to carry out the detailed feasibility studies needed to get projects started. At least the expansion of the uranium industry is making progress with BHP-Billiton releasing its environmental impact statement on the expansion of its large Olympic Dam project in South Australia and also announcing plans to develop its Yeelirrie uranium project in Western Australia.

The First Announcement for the 8th ANA National Conference – ANA 2009 – is now available. ANA 2009 will be held on Friday, 2 October 2009, at the Mechanics Institute, 280 Pitt St, Sydney. The organizing committee including representatives of the ANA, the Nuclear Engineering Panel of the Sydney Branch of Engineers Australia, ANSTO and AINSE, met on 25 June and finalised the general format and the list of invited speakers (see p. 2 for details). Dr Ziggy Switkowski, Chairman, ANSTO, will give the Opening Address. There will also be a Panel Discussion in the afternoon at which questions can be asked on all aspects of the program topics. Book this date in your diary.

Remember also that the **17th Pacific Basin Nuclear Conference (17PBNC)** will be held in Cancun, Mexico, from 24 to 30 October 2010. The ANA will assist the Mexican Nuclear Society in the review of abstracts of papers.

Report on the WNA Nuclear Fuel Cycle Conference – The World Nuclear Association (WNA) held a very successful World Nuclear Fuel Cycle Conference (WNFC 2009) in association with the NEI (Nuclear Energy Institute, USA) at the Sheraton on the Park Hotel in Sydney from 22-24 April 2009. The conference was attended by over 400 including a majority from overseas.

Dr Ziggy Switkowski, Chairman of ANSTO, gave welcoming remarks and chaired the first session on 22 April. ANA members Dr Clarence Hardy and Dr Ian Duncan presented papers in the first session on “The Case for Uranium Enrichment in Australia” and “Australia to Go Nuclear!” respectively. Mr Michael Angwin of the Australian Uranium Association spoke on “A Perspective on Australian Issues” and referred to the major plans to expand production from existing and new Australian uranium mines.

THE TECHNICAL PROGRAM FOR ANA 2009

ANA 2009 will be held on Friday, 2 October 2009 at the Mechanics Institute, 280 Pitt St, Sydney.

Opening Address at 9.20 by Dr Ziggy Switkowski, Chairman, ANSTO.

“ANSTO’s Future Program” by Dr Adi Paterson, Executive Director, ANSTO“.

“Australia’s Uranium in a Global Context” by Dr Ian Lambert, Geoscience Australia.

“The World Nuclear Power Scene” by Dr Selena Ng, AREVA.

“From Uranium to Waste: Developments in the World’s Nuclear Fuel Cycle” by Dr Clarence Hardy, ANA.

“Australian Young Generation in Nuclear” by Mr Mark Alexander, ANSTO.

*** Lunch from 1.00 – 2.00pm ***.

“The Role of AINSE Ltd in Nuclear Science & Technology” by Professor Alan Chivas, President, AINSE Ltd.

“Developments in Demand and Supply for Medical Isotopes”, by Mr Ian Turner, ARI.

“The Role of the International Commission on Non-Proliferation & Disarmament and Challenges in Safeguards and Non-Proliferation”, by Mr Geoffrey Shaw, ASNO.

“The Need for Community Involvement in Siting Nuclear Industry”, by Dr Ian Duncan, Consultant, Perth.

There will be a **Panel Discussion** to address all of the above topics from 4.00 to 5.00pm, followed by a post-conference reception from 5.00 to 6.00pm.

The First Announcement Brochure and Registration Form is available and provides details of the conference and registration procedure. This has been sent to all ANA members and others interested.

THE LATEST NEWS ITEMS

Australian Young Generation in Nuclear

A new initiative by Mr Mark Alexander of ANSTO is to set up a new association “Australian Young Generation in Nuclear”. The objectives are expected to evolve but will include developing professional networks both in Australia and overseas between young workers engaged in nuclear technology; representing the interests of young workers to the rest of the nuclear industry; encouraging young Australians to consider a career in the nuclear industry; and promoting the benefits of nuclear science and technology to other young Australians (young being under 35). A questionnaire is included with this newsletter to explore the interest firstly among ANA members. Please take time to complete the questionnaire and return it to Mark Alexander at ANSTO.

Report Commissioned by the Australian Uranium Association (AUA)

The AUA has released the report it commissioned by Professor Manfred Lenzen of the University of Sydney’s Integrated Sustainability Centre entitled **“Current State of Development of Electricity Generating Technologies – A Literature Review”**. The full report can be accessed at the AUA website: www.aua.org.au. You will find it interesting reading.

REMAINING TECHNICAL PROGRAM FOR 2009

Next Nuclear Panel Meeting

at the Engineers Australia Theatre, 8 Thomas St., Chatswood, at 5.30 pm. Wednesday, 22 July 2009

“Fusion Energy Developments: A Status Report”

by Dr Barry Green,

Former member of ITER Secretariat, Brussels.

The talk will describe the development of fusion energy based on magnetic confinement of fusion fuel with emphasis on the ITER Project. This project is the large international fusion experiment starting construction in the south of France. The talk will also discuss the international research and development program not directly tied to the ITER Project and how the results will feed into the design of a demonstration/prototype fusion reactor and on what time scale. Finally, Dr Green will discuss the opportunities for Australia to become more closely involved with the international work and, in particular, in ITER.

Biography - Dr Barry Green holds a PhD in theoretical plasma physics from the University of Sydney and has been involved for the last 40 years in the fusion research program outside Australia (primarily in the USA and Europe). He was involved in the design, construction and operation of the European fusion experiment JET (the Joint European Torus). He then took part in the engineering design for ITER in 1992-2003 when he was located at the Joint Work Site in Japan. The delay in a site decision for ITER led to his move to the European Commission Directorate-General for Research in Brussels to coordinate the fusion programs of the 12 most recent member states of the EU in order to integrate them with those of the existing 15 member states. Following his retirement from that position, he returned to Australia and is now working part-time at the School of Physics at the University of Western Australia.

27 August (Thursday) Host: ANA at the AINSE Theatre, Lucas Heights, at 12.30pm.

ANNUAL GENERAL MEETING

followed at 1.00pm by **“Risks and Benefits from Exposure to Low Level Radiation”**

by Dr Don Higson, ANA.

23 September (Wednesday) Host: Nuclear Panel at 5.30 for 6.00pm at Engineers Australia Lecture Theatre, 8 Thomas St, Chatswood, NSW.

“Progress and Prospects for the PBMR”

by Dr Adrian Paterson, ED, ANSTO

2 October (Friday) Host: ANA for

ANA 2009 National Conference,

Mechanics Institute, Pitt St, Sydney, 8.30 to 6pm.

See First Announcement and Summary on p. 2.

30 October (Friday) Host: ANA Annual Lunch and Award Presentation.

Venue and time to be confirmed.

***** Notice of AGM for 2009 *****

The ANA Annual General Meeting for 2009 will be held at 12.30pm on Thursday, 27 August, in the AINSE Lecture Theatre at Lucas Heights. Nominations for the positions of President, Vice-President, Secretary, Treasurer and four Committee Members should be received by the Secretary at PO Box 85, Peakhurst, NSW 2210 or by email at hardycj@ozemail.com.au by 23 July.

The Agenda will include a report from the Secretary on activities in 2008/09 including plans for ANA 2009 and a financial report by the Treasurer.

The AGM will be followed by a talk at 1.00pm by Dr Don Higson on Low Level Radiation (see above list of meetings for further information).

REPORTS ON MEETINGS

Report on the ANA Meeting

AINSE Theatre, Lucas Heights, 21 April 2009

Dr Ian Duncan, Consultant, spoke on “**The Interface between Society and the Nuclear Industry**”. based on his recent D.Phil research at Oxford University. He discussed the NIMBY syndrome, the public’s attitude to siting of critical industries, the gender effect, and the perceptions of time where a person’s comfort zone is rather short compared with the time required to store long-lived waste safely.

He discussed two processes for decision making. NIMBY can occur every time a top-down siting decision is *Declared, Announced and Defended*. This usually leads to strong community opposition. He then discussed the alternative of the *Voluntary Choice Process* in which communities are encouraged to assess the risks, rewards, losses and benefits of agreeing to the siting of a nuclear reactor or a waste repository. He believes this approach has had some success overseas.

Dr Duncan’s is an ANA member based in Perth. His industrial experience has been diverse including a successful career with Western Mining from which he retired as General Manager of the large Olympic Dam copper, uranium and gold project in South Australia. His talk attracted a large audience and he answered a large number of questions.

Report on the Nuclear Panel Meeting

EA Lecture Theatre, Chatswood, 27 May 2009

Dr Clarence Hardy, ANA, spoke on “**The Japanese Nuclear Power and Fuel Cycle Programs**” based on a visit to the 16PBNC conference in Aomori in northern Japan in October 2009 and to the large Rokkasho nuclear fuel cycle complex near Aomori. Dr Hardy outlined Japan’s successful nuclear industry since its first NP station in 1966. It now has 53 NPPs generating 30% of its electricity and this is planned to increase to 40% by 2017. Three reactors are under construction and 17 planned.

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The Japanese nuclear program – continued.

Japan imports all of the uranium for its nuclear power plants with about one third from Australia. Japan has a small conversion plant. It also has a small enrichment plant, a new large reprocessing plant about to go into operation, and a large low level waste management plant, these plants all being located at the Rokkasho site near Aomori in northern Japan. Japan is developing high temperature and fast reactor technology as well as evolving improved designs of PWR’s and BWR’s for export as well as use in Japan.

Progress reports on all aspects of Japan’s program, and those of other countries in the Pacific Basin, were presented at the 16th Pacific Basin Nuclear Conference held at Aomori in October 2008. Details can be obtained from the Pacific Nuclear Council’s website at: www.pacificnuclear.org.

Report on the ANA Meeting

AINSE Theatre, Lucas Heights, 25 June

Professor John Dodson, Head, ANSTO’s Institute for Environmental Research, spoke on “**Nuclear Methods and Environmental Science**”. Dr Dodson explained how a range of radioactive and stable isotopes could be used to study many environmental problems on earth. He gave examples of the use of ²H, ⁷Be, ¹⁰Be, ¹³C, ¹⁴C, ¹⁵N, ¹⁸O, ¹³⁷Cs, ²²²Rn, in studying the age of materials, pollution in air and water, aboriginal art, and climate change. He explained how ANSTO has state-of-the-art instruments, including AMS (accelerator mass spectrometry), GC-MS (Gas Chromatography-Mass Spectrometry), and sensitive radioactivity detectors.

Interesting examples were given of algal bloom monitoring in Warragamba Dam, and long-term rainfall data in Western Australia. A recent study is understanding historic trading routes in China from dating seeds and artefacts. There is extensive collaboration through AINSE. Dr Dodson answered many questions from a large audience.