Country Report of Australia

by
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Your Excellencies, Distinguished delegates ladies and gentlemen, it is a great pleasure for me to be here representing Australia. I took up my appointment as ANSTO Executive Director in May this year and consequently this is my first participation in an FNCA Forum meeting. I am looking forward to the opportunities for dialogue and discussion and to become more aware of the detailed programme of regional nuclear cooperation that is being planned and implemented over the coming years. I wish to thank the Ministry of Science and Technology of Viet Nam, the Viet Nam Atomic Energy Commission, the Cabinet Office of Japan and the Atomic Energy Commission of Japan for their excellent arrangements and support for this meeting.

During the past year in Australia there have been some noteworthy events which I would like to review briefly. Some of these have relevance to the FNCA projects and project implementation.

1. Nuclear Safety Culture

ANSTO has continued its support of regional safety culture initiatives which were first agreed at the "7th Conference for Nuclear Cooperation in Asia" in March 1996. Seven Nuclear Safety Culture Workshops have now been organised and supported under both the present FNCA and the former ICNCA frameworks.

The 2003 FNCA Nuclear Safety Culture Workshop was held in Daejeon Korea in January–February 2004. We greatly appreciated the excellent hosting provided by Korea, which provided a valuable opportunity for encouraging initiatives in safety culture. Since the timing of this event prevented a report being presented at the last Forum meeting in Okinawa, I would like to give a brief summary now.

The 2003 workshop included for the second time, a peer review of a self-assessment of the host country's research reactor. The Peer Review process was undertaken in a cooperative spirit and seen as an effective vehicle for fostering and strengthening safety culture. Real, meaningful and practical recommendations were made for improvement of safety management and safety culture at the HANARO research reactor.

Viet Nam provided a status report on progress on the recommendations arising out of the Peer Review of Dalat Nuclear Research Reactor (DNRR) which had taken place at the previous workshop. Significant progress was reported by Viet Nam with 7 of

the 16 recommendations either having been completed or having firm plans to be completed.

Significant developments and commitment to Safety Culture improvements were reported by each country. For example, work was continuing in establishing effective independence of the regulator particularly in the Philippines, Thailand and Malaysia. In Malaysia, the Atomic Energy Licensing Board (AELB) now had regulatory jurisdiction over government agencies (including MINT).

Agreement had been reached with the participants and subsequently with BATAN and the Government of Indonesia to hold the next workshop in Jakarta with a peer review of the Serpong Reactor Self Assessment Report. That Workshop and Peer Review were planned for 13-17 December 2004. However in October, travel warnings on non-essential travel from the Australian Department of Foreign Affairs and Trade led ANSTO to regretfully take the decision to postpone the workshop to 2005. To maintain the current project momentum, countries are still being asked to send ANSTO the papers that they would prepared for the meeting. ANSTO has agreed in principle to a proposal from Japan for them to have a meeting in Australia in the first or second quarter of 2005 to discuss the future of the project especially the longer term picture.

2. Radioactive Waste Management

On 14 July 2004, the Federal Government announced its decision to abandon the establishment of a national low level waste repository at site 40a near Woomera in South Australia. This decision followed a Federal Court ruling and the effective failure of the states and territories to cooperate with the Australian Government in finding a national solution for the safe and secure disposal of low level radioactive waste even though they had all accepted the need for the safe and secure disposal of low level waste in one place. As a consequence the Australian Government further announced that it is now taking responsibility solely for the safe and secure disposal of its own low level radioactive waste and that the states and territories will have a responsibility to do the same in relation to their waste as a matter of priority. In addition the Government is seeking a commitment from them that they will adopt world's best practice in the management of radioactive waste materials in their jurisdictions and be consistent with Australia's international obligations for safe radioactive waste management.

This should include:

- undertaking an immediate and comprehensive inventory of all low level waste within their jurisdictions;
- establishing safe and secure storage facilities for low level waste held within their jurisdictions; and

・ establishing appropriate disposal arrangements.

The independent Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) will work cooperatively with the relevant state and territory regulators to establish nationally consistent operating principles and guidelines.

The Australian Government will be examining potential sites on Commonwealth land, both onshore and off shore. In examining possible sites for the low-level waste facility, it is the intention of the Australian Government to co-locate the national store for intermediate waste with this low-level waste facility. The national store will be designed to operate for a period of 50-100 years until a suitable geological repository for disposal of the waste is established. A project to establish the national store was announced in 2000 by the Australian Government stating that it would be established on Australian Government land.

Australia participated in the Radioactive Waste Management (RWM) Workshop held in Malaysia between 27 September and 1 October. In addition to the country report, Australia presented four other papers relevant to the workshop theme and agenda:

・ a report describing the lack of uniformity in radiological protection regulations across states and territories in Australia and the need for uniformity of regulations on NORM waste issues.

・ an update on waste treatment characterisation at ANSTO, focussing on the waste characterisation and treatment processes currently in place.

・ details of the comprehensive siting assessment carried out in the selection of the proposed Australian national waste repository which had been carried out over 3 defined phases over a period of 8 years.

・ a overview of the technical details of the proposed Waste Acceptance Criteria (WAC) for the disposal of low and short lived intermediate waste into a near surface disposal facility.

Australia continues to welcome and support the progress being achieved by the cooperation in the area of radioactive waste management and will continue to participate in the planned future RWM Workshop activities.

3. Public Information

Research ANSTO undertook in the latter part of 2003 found that 88% of the Australian community agreed that *education through secondary schools is an effective way for people to learn things that remain with them for a long time*. Also, in the same survey, it was identified that 93% of ANSTO staff, 92% of government and 93% of business stakeholders felt that nuclear science should be taught in schools. With this in mind, ANSTO developed an education resource for 12-16 year olds applicable

across all of Australia's different education systems. It is called *Nuclear Science in Society*. Part of the supporting promotional strategy for it has included:

- development of alliances and sponsorships with science teaching associations;
- presentations/workshops at science teacher conferences;
- editorial and advertising in science teacher publications;
- awareness raising through science units of education departments; and,
- other activities such as mainstream media placement are.

Additionally, international research has consistently determined that it is the quality of teaching in schools that influences how interested students are in science and how likely they are to continue studying in upper high school. With the numbers of students studying science in upper high schools and universities in decline, ANSTO is working in collaboration with other major Australian science agencies to stimulate increased interest in science as a career, and science subjects in upper high school. The tactical outcomes of this program will be:

- a brochure aimed at 14-16 year olds;
- a fact sheet aimed at parents; careers advisers and science teachers; and,
- a website.

As part of this strategy, ANSTO hopes to institute its own discrete modest science teacher training program in 2005.

Although ANSTO had not attended PI workshops recently for a number of organisational and operational reasons, our absence from participation in the FNCA's cross-national survey was turned to a positive when we were able to provide critical comment from a "third-person" point of view to the Japan Project Leader.

A major benefit of the FNCA research is that it increased knowledge of and understanding between cultures in the Asian region. This is perhaps particularly important for Australia, as its role and profile in the region, politically and economically, has the potential to increase in future years. Like its fellow FNCA members, ANSTO likewise considers the education of young people on nuclear issues as being important. They are, ultimately, future decision makers for nuclear organisations.

It is worth noting that a key philosophical approach underpinning the construction of ANSTO's education resource is that alternative, often oppositional voices, to nuclear science and technology are recognised and represented. We believe that it is important that ANSTO recognises and respects other perspectives on its operations and the nuclear industry as a whole.

4. Research Reactor Utilisation

Our Replacement Research Reactor (RRR) project continues to progress well to schedule. Much of the major external construction work has been completed including

the metallic grillage for protection of the reactor building from a light aircraft crash. The building is reinforced concrete; it is seismically qualified.

On 13 September 2004 ANSTO submitted its replacement research reactor (RRR) operating licence application to our regulator, the Australian Radiation Protection and Safety Agency (ARPANSA). ARPANSA is expected to take some time to assess the application and would consider a range of factors, including the results of international peer reviews and public submissions. The licence could not be issued until the performance of systems had been demonstrated through cold commissioning tests, which are scheduled to take place in the second half of 2005.

As detailed previously the RRR is a 20 megawatt pool reactor using low enriched uranium fuel, and cooled by water. It will be a multipurpose facility for radioisotope production, irradiation services and neutron beam research. Its compact core is designed to achieve high performance in the production of neutrons. Initially eight neutron beam instruments will be operated, including diffractometers, reflectometers and neutron scattering instruments.

Under the FNCA's Research Reactor Utilisation project, the sub-project on Small Angle Neutron Scattering (SANS) has been active over a number of years, although it will not be one of the three areas for discussion at the coming meeting to be held in Thailand in January. Nevertheless I would like to recall that SANS is a useful technique for the investigation of problems in many research fields including nanotechnology, materials science, biology and the environment. ANSTO has considerable experience in SANS science and considerable experience in identifying problems that will benefit from the application of this research tool. Participation in the FNCA sub-project has provided an opportunity for ANSTO to assist in enhancing the SANS regional research networks, identifying problems and collaborating in the search for solutions. The multi-node FNCA SANS project has used the excellent facilities in Japan, Korea, Indonesia, Malaysia and Australia. Truly international collaboration has come from the analysis and comparison of results from data collected at a number of participating laboratories.

In summary, there has been a recognised mutual benefit from ANSTO's involvement in the FNCA SANS activities. As ANSTO moves towards the new horizons created by the RRR and the attached instruments, additional benefits could accrue to the FNCA network through the sharing of facilities, knowledge, problems and solutions. ANSTO will be establishing and opening up these new neutron facilities as a Regional Centre of Excellence and I look forward to enhanced interactions with countries in the region through such bilateral or multilateral arrangement as may be appropriate. FNCA Coordinators may wish to consider how their interests and requirements best integrate into such a matrix.

5. Regional Safety and Security

Currently we are living in uncertain and less peaceful times. In response to world events, there is a drive to make significant upgrades to the safety and security practices for facilities and for radioactive and nuclear materials. Earlier this year, the Australian Government established a regional project on the Security of Radioactive Sources. Its aim was to work collectively with countries in the region to enhance regional security and protect against terrorist acts. This initiative will be integrated with the IAEA and US Department of Energy projects related to establishing Regional Radiological Security Partnerships.

On 8 November, Australia hosted the Asia-Pacific Nuclear Safeguards and Security Conference in Sydney. The Conference was attended by Ministers or their Representatives from 18 regional countries, which included all FNCA countries. A further five countries were also represented, together with the Pacific Islands Forum and the IAEA. The meeting agreed to work together in a sustained and comprehensive effort to expand and enhance the nuclear safeguards and security frameworks and identified priorities. The conclusion and implementation of the Additional Protocol was an agreed fundamental aspect to underpin these endeavours.
It is clear that the benefits can be maximized by coordinating activities of international and regional organisations and through the use of regional partnerships. Australia, the IAEA, and the USA, together with other States in the region, currently Indonesia, Malaysia, Thailand and Viet Nam, are already in the process of developing a work plan. As a well-respected and well-established forum for fostering regional nuclear cooperation, it might also be appropriate for the FNCA to consider whether it might be able to contribute to these partnerships, further demonstrating that integrated radiological safety and security considerations underpin the utilisation of the nuclear technologies being promoted in the FNCA programme.

6. Conclusion

ANSTO has a long-term interest in and commitment to regional nuclear cooperation. Like many organisations we have limited resources both in terms of human resources and of finance and we have to critically assess where the very best investment of these resources can be made, which may on occasions prevent us from participating in all of the activities that we might wish. To maximise our effectiveness and efficiency as well as our utilisation of resources, we are taking an holistic approach to our regional nuclear cooperation.

The ongoing progress to introduce improved procedures for management and evaluation of the projects has been noted and it is hoped that the current self evaluation process will be further developed to ensure that projects deliver value and make efficient use of resources.

Australia is pleased to contribute to the FNCA by sharing experience and knowledge with the region and to continue to promote strong and durable links in the area of nuclear science and technology cooperation.