

Joint Standing Committee on Foreign Affairs, Defence and Trade

Inquiry into Australia's Relationship with ASEAN

Introduction

The Australian Nuclear Science and Technology Organisation (ANSTO) is Australia's national nuclear science and technology organisation and the centre of Australian nuclear expertise. ANSTO staff have extensive skills and expertise in nuclear technology and its applications, and in particular in the handling of radioactive materials. ANSTO's nuclear infrastructure includes the research reactor OPAL, particle accelerators, radiopharmaceutical production facilities, and a range of other unique research facilities.

The terms of reference for this inquiry request the Committee to examine and report on opportunities for expanding Australia's relationship with the countries of ASEAN, with particular attention to: improving Australia's involvement in ASEAN; enhancing regional security through Australian involvement; free trade agreements with individual ASEAN countries; enhancing the regional economy; improving cultural links; and the impact of global warming on the region.

ANSTO makes a significant contribution to Australia's relationship with ASEAN through various bilateral and multilateral cooperative agreements and projects, including those which fall under the auspices of the International Atomic Energy Agency (IAEA). In particular, ANSTO makes a significant contribution to the enhancement of regional security through its Regional Security Radioactive Sources (RSRS) Project. ANSTO's engagement with ASEAN countries via those agreements and projects provides a primary means by which Australia fulfils its commitment to facilitate "the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy", as required by Article IV of the Nuclear Non-Proliferation Treaty (NPT).

Background

ANSTO has had a long history of involvement and cooperation in nuclear science and technology with seven of the ASEAN countries (Burma, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam). This cooperation is closely linked to Australia's fulfilment of the obligations and commitments associated with its membership of the IAEA and its obligations under the NPT. Those seven ASEAN countries are all parties to the NPT. The remaining three ASEAN countries (Brunei, Cambodia and Laos) are currently not IAEA Member States, and as a result ANSTO's involvement with those countries – apart from the RSRS project (see below) - is limited.

ANSTO's involvement with ASEAN countries covers a range of issues, including nuclear safety, security, research, environment, health, industry, agriculture and education. Through its involvement in these areas, ANSTO contributes to Australia's relationship with ASEAN countries by improving Australia's involvement in ASEAN, enhancing regional security, improving cultural links, and researching, reporting on and providing input to solutions to environmental challenges in the region.

Engagement with ASEAN Countries

ANSTO's engagement with ASEAN countries takes place within the following multilateral and bilateral cooperative agreements, and unilateral projects:

Multilateral Cooperation

There are two main vehicles for multilateral cooperation in the region: the Regional Cooperative Agreement (RCA) and the Forum for Nuclear Cooperation in Asia (FNCA):

- Regional Cooperative Agreement (RCA)

The Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology (RCA)¹, which is conducted under the aegis of the IAEA, has provided a fruitful environment for regional cooperation. Australia joined the RCA in 1979, and since then has cooperated with Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam and the other RCA Member States² at various times on a range of projects. Australia has provided substantial extrabudgetary funds, currently amounting to some A\$7 million, for projects in a wide range of areas conducted as part of the RCA program. In the most recent round of support, Australia provided A\$1.42 million to implement an RCA project to improve regional radiological safety capabilities over the three years between 2004 and 2006. The objective of the project was to improve regional capacity to respond to radiological risks, including aquatic environmental risks, and radiological emergencies, including terrorism.

- Forum for Nuclear Cooperation in Asia (FNCA)

In 1990, the Forum for Nuclear Cooperation in Asia³ (FNCA) was founded by Australia, Indonesia, Malaysia, Philippines, Thailand and Vietnam. Since its creation, FNCA membership has expanded to include Bangladesh, China, Japan and the Republic of Korea.⁴ Australia participates with the FNCA members in a selected number of FNCA projects, including:

- from 1997 until its completion early this year, sponsoring the FNCA project on nuclear safety culture as applied to research reactors, which involved peer reviews on four research reactors within the region between 2002 and 2006 (three of which were in the ASEAN countries of Indonesia, Malaysia and Vietnam);
- a sub-project involving small angle neutron scattering for research reactors, which resulted in a good level of cooperation between Australia, Indonesia, Malaysia, Philippines, Thailand and Vietnam; and
- participation in the FNCA's Radioactive Waste Management project involving ANSTO, Indonesia, Malaysia, Philippines, Thailand and Vietnam.

Bilateral Cooperation

There are currently no bilateral nuclear cooperation arrangements in place between ANSTO and its counterpart nuclear research institutes in Indonesia, Malaysia, Myanmar, Philippines, Singapore,⁵ Thailand and Vietnam. However, ANSTO has had periodic requests from those bodies for scientific and technical cooperation and

¹ [1988] ATS 11

² There are currently 17 signatories to the RCA – Australia, Bangladesh, China, India, Indonesia, Japan, Republic of Korea, Malaysia, Mongolia, Myanmar, New Zealand, Pakistan, Philippines, Singapore, Sri Lanka, Thailand and Viet Nam.

³ This body replaced the International Conference on Nuclear Cooperation in Asia (ICNCA).

⁴ Presently, there are 10 countries participating in the FNCA.

⁵ Singapore does not have a dedicated nuclear research institute.

assistance. Financial support for the provision of ANSTO's expertise to other countries (in the form of advice, consultations and staff training) has been provided under the IAEA's Technical Cooperation Programme (TCP) and the IAEA's Extrabudgetary Programme (EBP) on the Safety of Nuclear Installations in South East Asia, Pacific and Far East Countries. ANSTO staff have participated in a wide range of bilateral projects under both the TCP and the EBP programmes.

For example, ANSTO has had periodic requests from BATAN (the Indonesian national nuclear body) for scientific and technical cooperation and assistance. Australian funding from the AusAID GSLP programme for Indonesia enabled support to be given to the restoration of mechanical testing facilities at the BATAN laboratories in Serpong.

Financial support for the provision of ANSTO's expertise for advice and consultations as well as training of BATAN staff has been provided under the IAEA's Technical Cooperation Program and its Extrabudgetary Program on the Safety of Nuclear Installations in South East Asia, Pacific and Far East Countries. ANSTO staff have carried out a range of tasks in Indonesia under both programs. One area of assistance has been the delivery of training in the areas of materials testing, calibration, quality systems and the assessment of the 'remaining life' of key equipment components. Another area of particular focus has been the inspection of BATAN's three research reactors, which are located respectively at Yogyakarta, Serpong and Bandung. The provision of training and advice on the inspection of the reactor tank liners has been an important objective of a number of missions undertaken by ANSTO staff. BATAN and engineers from other Indonesian organisations have also spent time at ANSTO receiving on-the-job training and experience in inspection and materials testing procedures.

ANSTO Regional Security of Radioactive Sources Project

ANSTO has a long history of competence in radiation protection. For the past four years, the ANSTO Regional Security of Radioactive Sources (RSRS) Project has drawn on that capability to address the physical protection and security management of high-risk radioactive sources used within the countries of South East Asia and the Pacific. Through the RSRS project, which is undertaken in cooperation with related programs of the IAEA and the US Department of Energy National Nuclear Security Administration (NNSA), ANSTO has expanded upon Australia's existing regional relationships, enhanced regional security, and improved cultural links.

Radioactive sources are extensively used in medicine, industry, agriculture, engineering, education and research & development in all South East Asian countries. Prior to September 2001, international control of radioactive sources was driven by safety considerations in order to prevent local incidents or accidents. These measures did not address the potential vulnerability of such sources to deliberate misuse. Since 2001, the IAEA has strengthened controls relating to sources through the development of a Code of Conduct on the Safety and Security of Radioactive Sources. It is important to the security of Australians living abroad and of Australia that this Code is properly implemented at the national level within South East Asia. However, many of these countries require assistance in order to access and develop the expertise needed to embed security measures in national legislation, and to implement appropriate physical protection initiatives such as infrastructure upgrades, security procedures, and related capability development.

ANSTO's RSRS Project is directed at decreasing the vulnerability of radioactive sources located in South East Asia and the Pacific to loss, theft, damage, misuse or

sabotage, thus reducing the likelihood of terrorists acquiring such material. The means by which the RSRS Project advances this objective include:

- enhancing national regulations and regulatory infrastructure for radioactive source security;
- assessment of, and assistance with, the physical protection and security management of radioactive sources and the facilities in which they are used and stored;
- capacity building for radiological emergency preparedness and response; and
- identification of, and assistance with securing, vulnerable radioactive sources.

Total funding for the Project since July 2004 has been \$6.5M (\$4.5M in the 2004 budget and a further \$2M in the 2006 budget). The RSRS Project has engaged all ASEAN Member States via regional training and development activities on the security of radioactive sources. In addition, specific bilateral missions and projects have been undertaken with Indonesia, the Philippines, Vietnam, Cambodia, Thailand and Malaysia,⁶ and active and on-going programs are underway with all of these countries. To a lesser extent,⁷ ANSTO has also been engaged with Singapore, Brunei and Laos, and regularly informs counterparts in those countries of the RSRS Project and related activities. Burma has not been directly involved in bilateral engagement.

The ANSTO RSRS Project works in close cooperation and collaboration with related international programs being delivered within ASEAN, particularly by the US NNSA's Office of Global Threat Reduction Initiative (US NNSA Program). ANSTO RSRS Project and the US NNSA Program bring together complementary expertise which has resulted in significant achievements over the last 4 years. These have included introduction of national radioactive source security regulations; technical and organisational capacity building; physical protection infrastructure upgrades to operating or storage facilities; and practical implementation and training on security requirements within the context of life-cycle management of high-risk radioactive sources.

The RSRS Project approach has the following features

- The cooperation is relatively informal and peer-to-peer;
- The project seeks to engage both relevant Government authorities and users in regional countries;
- The project collaborates with other international programs, particularly those of the US NNSA Office of Global Threat Reduction;
- It seeks to enhance national expertise and capability, and a security culture, throughout the South East Asia region;
- It promotes sustainable national resources and infrastructure to address radiation safety, regulation and radioactive source security; and
- A continuity of ANSTO expertise, which leads to trust building.

⁶ Malaysia has recently become fully engaged with the RSRS project via the establishment of a cooperative working group.

⁷ Partly due to initial needs and risks assessments indicating that radioactive source security matters did not require a detailed level of RSRS commitment and cooperation.

ASEAN participants at the *South East Asia Regional Review Meeting on Radioactive Source Security*, hosted by the Indonesian Government in July 2008 with support from the ANSTO RSRS Project, emphasised the value of these project partnership activities and the need to ensure ongoing practical implementation and regular in-country reviews to ensure effectiveness, sustainability and further development of the measures in place. They raised the following considerations with respect to continuing regional activities on source security:

- in those countries where cooperation on source security is mature, emphasis should be given to sustainability measures;
- cooperation with other regional states should be encouraged and/or extended as requested and as resources permit;
- partnership activities should be expanded to cover other issues such as management of unaccounted orphan sources, transport security and physical protection measures for portable category 2 sources; and
- further regional bilateral and multilateral cooperation (such as through ASEAN) should be encouraged.

In ANSTO's experience in working with the ASEAN countries, it appears that nuclear regulators, operators and related security or emergency response personnel need continued bilateral or multilateral support to improve the safety and security of their radioactive sources. The concepts and practice of security measures and appropriate safety and security culture need to become more deeply embedded in the organisational work culture across all sectors responsible for radioactive sources' regulation, use and protection. The development of effective security programs requires on-going training and the gradual development of a security culture by all concerned. The development of an organisational culture which embeds both security and safety culture requires ongoing systematic regional engagement.

ANSTO's on-going work and commitment to the RSRS Project strives to ensure:

- the sustainability of security measures already developed and being implemented;
- the extension of Project activities to additional regional partners, with a continuing focus on improving the relevant infrastructure and capability of all countries to ensure adequate control, safety and security of radioactive sources;
- increased understanding of regional vulnerability to radioactive source misuse, arising from evaluation of source safety and security effectiveness and the extent to which countries are able to address those vulnerabilities;
- measures to secure identified orphan sources are implemented and supported; and, as a result of the above
- improved security for radioactive sources within the South East Asia and Pacific region.