

Senate Standing Committee on Foreign Affairs, Defence and Trade

**Inquiry into the economic and security challenges facing Papua New
Guinea and the island states of the southwest Pacific**

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 of this inquiry cover, inter alia, how the Australian Government can, in practical and concrete ways, assist Papua New Guinea and the island states of the southwest Pacific to meet their security challenges. The ANSTO Regional Security Radioactive Sources (RSRS) Project provides an instance of such assistance. For the last four years, the RSRS Project has been addressing the physical protection and security management of high risk radioactive sources in industry, medicine, education and research and development in countries of South East Asia and the Pacific. This is directed to reducing the threat of malevolent use of radioactive sources – best known as the so-called “dirty bomb”.

Background

The industrial and medical use of radioactive sources is widespread in the Asia-Pacific region. Highly radioactive sources such as caesium-137, cobalt-60 and iridium-192 are abundant in applications such as the irradiation of medical products for sterilisation, radiography of metallic parts, and in industrial gauges for process measurement and control. Cobalt-60 is also extensively used in the treatment of cancer.

Given increased concerns about terrorism in recent years and the threat of radiological terrorism (in particular, the so-called “dirty bombs”), the international community has devoted increased attention to the security of radioactive sources. Since the late 1990s, the International Atomic Energy Agency (IAEA) has taken a number of steps in that regard. Chief among those was the development of a Code of Conduct on the Safety and Security of Radioactive Sources (under the leadership of an ANSTO officer). However, real improvements in the safety and security of sources will only stem from a rigorous implementation of the Code by national governments. Proper implementation of the Code at the national level in the South East Asia and Pacific region is important for Australia's security.

In the 2004-05 Budget, and in the context of a multi-agency regional security New Policy Proposal (NPP) coordinated by the Department of Foreign Affairs and Trade, the Government provided \$4.5 million over three years for ANSTO to develop and deliver regulatory and technical activities to improve the security of radioactive sources in the Asia-Pacific region. A further \$2 million was provided in the 2006 budget.

The overall objective of the program is to prevent - or at least significantly reduce the risk of - unauthorized access, loss, theft, damage to or transfer of such radioactive sources. The program has made good progress in some regional countries in reducing potential threats associated with the misuse of such radioactive sources, but in other regional countries work has just begun.

Project objectives

ANSTO has a long history of competence in radiation protection, which has been utilised in the conduct of the project. The RSRS project builds on ANSTO's regional relationships and is run in cooperation and coordination with related programs of the International Atomic Energy Agency (IAEA) and the US Department of Energy National Nuclear Security Administration (NNSA). The objectives of the project are to:

- strengthen legislative and regulatory controls to include security provisions for radioactive sources;
- apply standards and requirements for the physical protection of radioactive sources;
- develop capability and expertise by the provision of radiation detection equipment and training in physical protection, orphan source searches and for emergency response; and
- identify and address situations involving vulnerable or orphan radioactive sources.

Work in Papua New Guinea and the South West Pacific

The RSRS Project has worked with the Government of Papua New Guinea since 2005 to improve security and control over radioactive sources in that country. An initial outreach mission, raising awareness of source security issues with several government ministries, was conducted in April 2005. During this mission, a disused, vulnerable medical treatment source was identified at the Angau hospital in Lae. This high-activity source had originally been manufactured by the Australian Atomic Energy Commission, ANSTO's predecessor. ANSTO was therefore able to take the source under its control, and it was returned to ANSTO, with the assistance of the Royal Australian Air Force, for secure management in December 2005. A radiation safety officer training course was conducted for 21 source operators and government officials in October 2005. Papua New Guinea's recent decision to join the International Atomic Energy Agency was largely prompted by their experience with this assistance.

In June 2008, the Papua New Guinea Government acquired a replacement medical treatment source. In conjunction with the US NNSA, the RSRS project is working to upgrade the safety and security controls at the Angau hospital.

Awareness raising seminars were conducted for representatives from a number of Pacific Island countries in Sydney in November 2005 and July 2006. Following this, an outreach mission was conducted to Fiji in August 2006 to assess the extent of radioactive source use. Again, an awareness-raising seminar was held for government officials and source users, and companies which could possibly use radioactive sources were inspected. No high-activity sources were discovered. The few medium-activity sources identified were judged as being under sufficient local control.