

# ANSTO's nuclear security related activities



The Australian Nuclear Science and Technology Organisation (ANSTO) is the centre of Australia's nuclear expertise.

ANSTO promotes nuclear security in Australia, the Asia-Pacific Region and around the world.

## Australia, ANSTO and nuclear security

As an Australian Government agency, ANSTO provides policy advice to Government on all matters relating to nuclear science, technology and engineering. It also operates Australia's only research reactor, OPAL, and strongly supports Australia's non-proliferation efforts.

ANSTO provides international leadership in nuclear security operations and undertakes research in selected areas such as nuclear forensics and border security technology development. It also supports Australia's commitment and leadership in international multilateral forums such as the International Atomic Energy Agency (IAEA).

In 2012, 2014 and 2016, Australia was ranked first in the biennial assessment of nuclear security in countries with significant holdings of nuclear material.

The assessment was undertaken by the Nuclear Threat Initiative, which is a non-government organisation that works to reduce global threats from nuclear, biological and chemical weapons. Australia has maintained its top ranking through steps such as reducing the quantities of highly enriched uranium it holds and its leadership role in the Global Initiative to Combat Nuclear Terrorism (GICNT).

## Nuclear security related activities at ANSTO

### Nuclear Forensics

ANSTO has established a nuclear forensics facility staffed with experts in radiochemistry and forensic science.

The functions of the facility are:

- to conduct research into methods to determine the origin of radioactive materials, decontamination and examination of contaminated evidence
- to provide training to Australian response agencies that may have to attend crime scenes potentially contaminated with radioactive materials and
- to undertake forensic analysis of seized samples.

## **Border protection technologies**

ANSTO develops and assesses technologies which include new detectors and algorithms for improving the ability to identify the illicit trafficking of nuclear and other radioactive material.

## **Participation in the IAEA's network of analytical laboratories**

ANSTO's Accelerator Mass Spectrometry (AMS) facility is a member of the IAEA Network of Analytical Laboratories for nuclear safeguards. As such, its staff undertake analysis of samples taken by IAEA safeguards inspectors from facilities around the world.

## **Australia and ANSTO's engagement in multilateral activities**

### **The Nuclear Industry and Nuclear Security Summits**

In 2016, ANSTO played a key role in the Nuclear Industry Summits (NIS) which were official side event meetings of the biennial Nuclear Security Summits (NSS) in Washington DC. The NIS was attended by hundreds of CEOs of major international nuclear companies, and the NSS was attended by Heads of State.

During the NIS process, ANSTO's CEO, Dr Adi Paterson served as a member of the Board of Advisors to provide policy direction for industry in supporting the Summit process and develop the Joint Communiqués from various NIS. In 2014, Dr Paterson also chaired the NIS Working Group 3 (WG3) on 'Managing Materials of Concern', which covered minimisation of the use of Highly Enriched Uranium and security of radioactive sources.

### **Global Initiative to Combat Nuclear Terrorism**

Australia is a Partner Nation of the Global Initiative to Combat Nuclear Terrorism (GICNT), which aims to share experience in preventing nuclear terrorism. On Australia's behalf, ANSTO participates in the GICNT steering group, the Implementation and Assessment Group, chairs the Nuclear Forensics Working Group (NFWG) and participates in two other working groups:

the Nuclear Detection Working Group and the Response and Mitigation Working Group.

ANSTO, in cooperation with the Australian Department of Foreign Affairs and Trade and New Zealand Ministry of Foreign Affairs and Trade, are hosting 'Kangaroo Harbour', an international communications and assistance workshop in 2016.

### **International Atomic Energy Agency**

The International Atomic Energy Agency (IAEA) is the world's centre of cooperation in the nuclear field and works with its 168 Member States and multiple partners worldwide to promote the safe, secure and peaceful use of nuclear technologies.

Australia participates in the majority of IAEA activities, with ANSTO representing or supporting Australia in areas ranging from IAEA governance to technical cooperation and applications. ANSTO staff members sit on the Advisory Group on Nuclear Security (ADSEC) and chair the high-level advisory group on nuclear liability (INLEX).

### **The IAEA IPPAS Missions to Australia**

In November 2013, a team of IAEA experts completed a two-week International Physical Protection Advisory Service (IPPAS) mission at the request of the Australian Government to review nuclear security practices in Australia.

The IPPAS team concluded that nuclear security within Australia had long been of a high standard and had been significantly enhanced in recent years. The team also identified a number of good practices at ANSTO, and provided some recommendations and suggestions to assist Australia in the continuing improvement of nuclear security. The Australian Government has requested a follow-up mission for 2017, and ANSTO will again cooperate fully with this review.

### **ASEAN Regional Forum Workshops on Non-proliferation Nuclear Forensics**

ANSTO staff have participated in the two ASEAN (Association of Southeast Asian Nations) Regional Forum Workshops on Non-proliferation Nuclear Forensics.



# **GICNT**

GLOBAL INITIATIVE TO COMBAT NUCLEAR TERRORISM