



Australian Government

Australian Safeguards and Non-Proliferation Office

Submission to the Senate Standing Committees on Environment and Communication

Inquiry into Australian Antarctic Division Funding

7 September 2023



The Australian Safeguards and Non-Proliferation Office (ASNO) within the Department of Foreign Affairs and Trade (DFAT) welcomes the opportunity to contribute to this inquiry. This submission explains the important role the Australian Antarctic Division (AAD) plays in assisting Australia meet its obligations under the Comprehensive Nuclear-Test-Ban Treaty (CTBT), for which ASNO has the statutory oversight function. This submission has relevance to parts (c) and (f) of the Terms of Reference for the inquiry.

Executive Summary:

ASNO is Australia's National Authority for implementation of the Comprehensive Nuclear-Test-Ban Treaty (CTBT). The CTBT prohibits all nuclear explosive testing for both civilian and military purposes and establishes a global monitoring network to verify compliance. The practical effect of the CTBT is to reinforce the international norm against nuclear testing.

Central to this function is the hosting of nuclear explosion monitoring systems as part of the CTBT's network of International Monitoring Stations (IMS), four of which are supported by the Australian Antarctic Division (AAD). The global IMS network ensures that no country can conduct nuclear tests without a very high likelihood of detection.

ASNO works with Australian agencies and institutes to ensure Australia meets its treaty obligations with respect to the IMS. AAD plays a critical role in the provision of technical and logistical support to sustain Australian-owned monitoring stations located in Antarctica and Macquarie Island.

The location of each IMS facility (both stations and laboratories) and the responsible State Parties are specified in the CTBT. Each monitoring station is responsible for covering an individual part of the globe. Australian stations provide coverage for a considerable proportion of the globe spanning the region from Cocos Island in the west, to Macquarie Island in the east, and from the equator to Antarctica. Global cooperation and the continued sustainment of these monitoring stations reinforces the convention against nuclear weapons testing.

Geopolitical and Strategic International Interests.

The CTBT is a key pillar of the international non-proliferation and disarmament regime and is part of the multilateral framework that protects Australia's national interest in limiting the development and spread of nuclear weapons. The Comprehensive Nuclear-Test-Ban Treaty Office (CTBTO) in Vienna is establishing a global network of over 300 monitoring stations using seismic, infrasound, hydroacoustic and radionuclide detection technologies to monitor the earth for nuclear explosions. Australia is the custodian of a total of 20 monitoring stations and one radionuclide laboratory.

In the past 25 years the ongoing development of the IMS network (which is now at approximately 90 per cent complete) has reinforced a global norm against the testing of nuclear weapons and supported practical contributions to international security. For example, Australian-owned facilities have played a critical role in detecting DPRK's nuclear weapons testing activities since 2006, which has supported international responses through timely event identification and reporting.

Australia's obligations under the CTBT

Australia's commitments are given effect through the *Comprehensive Nuclear Test Ban Treaty Act 1998*. Australia has the third largest number of IMS stations of all CTBT State Parties. Australia completed the establishment of all 20 IMS stations in 2018 with the successful certification of the Infrasound station at Davis Base in Antarctica.

Three of Australia’s IMS stations are located in Antarctica, and one is located on Macquarie Island. These stations provide continuous real-time monitoring data to the CTBTO through daily operational supervision and remotely managed periodic maintenance.

IMS Station Treaty Code	Location	Station Operator
IS3 - Infrasond	Davis Base, Antarctica	Geoscience Australia
RN5 – Radionuclide	Mawson Base, Antarctica	ARPANSA
PS5 – Primary Seismic	Mawson Base, Antarctica	Geoscience Australia
RN7 – Radionuclide	Macquarie Island	ARPANSA

Role of AAD in supporting the IMS stations.

The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and Geoscience Australia (GA) are the station maintenance managers for the above IMS stations and rely on the logistics expertise and staff from the AAD to ensure the continuous operation of these IMS stations. GA and ARPANSA also rely on the availability of berths on AAD vessels for IMS experts to undertake short-term travel to the bases to carry out technical maintenance and repairs. The IMS stations require ongoing onsite maintenance to ensure long-term sustainment of operations. This includes inspections, calibrations, equipment upgrades and repairs. This technology is not yet able to be fully automated.