



Australian Government
**Australian Radiation Protection
and Nuclear Safety Agency**



Quarterly Report

of the

Chief Executive Officer of ARPANSA

July to September 2022

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Acknowledgement of Country

ARPANSA respectfully acknowledges Australia's Aboriginal and Torres Strait Islander communities and their rich culture and pays respect to their Elders past and present. We acknowledge Aboriginal and Torres Strait Islander peoples as Australia's first peoples and as the Traditional Owners and custodians of the land and water on which we rely.

We recognise and value the ongoing contribution of Aboriginal and Torres Strait Islander peoples and communities to Australian life and how this enriches us. We embrace the spirit of reconciliation, working towards the equality of outcomes and ensuring an equal voice.

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Letter of transmittal

16 December 2022

The Hon Ged Kearney MP
Assistant Minister for Health and Aged Care
PO Box 6022
House of Representatives
Parliament House
Canberra ACT 2600

Dear Minister

The *Australian Radiation Protection and Nuclear Safety Act 1998* (the Act) requires the Chief Executive Officer (CEO) of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) to submit to the Minister, at the end of each quarter, a report on:

- the operations during the quarter of the CEO, ARPANSA, the Radiation Health and Safety Advisory Council (the Council), the Nuclear Safety Committee (the NSC) and the Radiation Health Committee
- details of directions given by the Minister to the CEO under section 16 of the Act
- details of directions given by the CEO under section 41 of the Act
- details of improvement notices given by inspectors under section 80A of the Act
- details of any breach of licence conditions by a licensee, of which the CEO is aware
- details of all reports received by the CEO from the Council and the NSC under Part 4, paragraphs 20(f) or 26(1)(d) of the Act, and
- a list of all facilities licensed under Part 5 of the Act.

I am pleased to provide you with a report, meeting the requirements of the Act, covering the period July to September 2022.

Please note that subsection 60(6) of the Act requires you to cause a copy of the report to be laid before each House of the Parliament within 15 sitting days of the day on which this report was given to you.

Yours sincerely



Gillian Hirth
CEO of ARPANSA

The operations of the CEO and ARPANSA

The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is the Australian Government's primary authority on radiation protection and nuclear safety. Our purpose is to protect the Australian people and the environment from the harmful effects of radiation, through understanding risks, best practice regulation, research, policy, services, partnerships and engaging with the community.

ARPANSA sits within the Department of Health portfolio and has a single outcome, as set out in the 2022-23 Portfolio Budget Statements (PBS):

Protection of people and the environment through radiation protection and nuclear safety research, policy, advice, codes, standards, services and regulation.

The Radiation Protection and Nuclear Safety Program, contained within the 2022-23 PBS, describes four key performance measures, against which ARPANSA seeks to achieve its outcome. These measures are:

- Provide high quality advice to government and the community on health, safety and environmental risks from radiation.
- Provide emergency preparedness and response systems for a radiological or nuclear incident.
- Promote patient safety in radiotherapy and diagnostic radiology.
- Ensure protection of people and the environment through efficient and effective regulation.

The report on the operations of the CEO and ARPANSA focuses on these.

Provide high quality advice to government and the community on health, safety and environmental risks from radiation

Enhanced Electromagnetic Energy (EME) Program

In August, ARPANSA presented on EME misinformation at the University of Melbourne Science Gallery as part of National Science Week. The presentation was open to the public and discussed people's risk perception of EME, current research conducted by ARPANSA and showcased the agency's Talk to a Scientist Program.

During the quarter, ARPANSA announced two EME Program Research Framework projects. The first project is collaboration between ARPANSA and the University of Wollongong, to investigate the presentation of non-specific symptoms attributed to electromagnetic fields. The second, is a collaboration between ARPANSA and Swinburne University of Technology, to investigate research methods that look at radio wave exposure for setting appropriate safety limits.

Provide emergency preparedness and response systems for a radiological or nuclear incident

Incident management team response to Ukraine conflict

During the quarter, ARPANSA and Australian Nuclear Science and Technology Organisation (ANSTO) coordinated with the International Atomic Energy Agency (IAEA), to donate radiation measurement and personal protective equipment to Ukraine. Under the IAEA program, the equipment was one of the first to be received by Ukraine on 13 July. ARPANSA's donation forms part of the IAEA's wider call for international support, under the IAEA's Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, which has been answered with contributions from many countries.

Visiting Ships Panel (Nuclear)

ARPANSA is an active participant in the Visiting Ships Panel (Nuclear), or VSP(N), and associated Technical Working Group, which oversees arrangements for visits to Australia by nuclear-powered warships and other nuclear-powered vessels. During this quarter, ARPANSA completed work to support the Darwin Port validation, which verified the port's ability to host visits and respond in the case of an emergency. ARPANSA also completed maintenance of the Australian Radiation Monitoring System (ARMS) at approved ports.

Promote patient safety in radiotherapy and diagnostic radiology

Australian Clinical Dosimetry Service (ACDS)

ARPANSA's Australian Clinical Dosimetry Service (ACDS) audit program continued full-service delivery, completing the quarterly onsite and remote mailout audit schedule. The program measures and evaluates the radiation dose delivered by radiation oncology treatment machines, giving confidence to the facility and their patients that accurate radiation doses are delivered. This quarter, the audit scope was extended, on a fee for service basis, to include out-of-schedule audits for cranial stereotactic radiotherapy techniques (SRS); which supports dose accuracy in radiation therapy used to treat brain cancer, and kilovoltage treatment units (kV).

Medical imaging

ARPANSA has been conducting a bilateral measurement intercomparison, with the IAEA, of ionising radiation instrument calibrations for medical diagnostic X-ray beams. This aims to demonstrate international consistency for calibrations of X-ray measuring instruments, performed in ARPANSA's calibration laboratory. This supports ARPANSA's efforts to monitor patient exposures and ensures radiation doses are proportionate to the clinical objectives of medical X-ray examinations.

Primary Standards Dosimetry Laboratory (PSDL)

Radiotherapy dosimetry equipment was calibrated for 7 radiotherapy providers. These instruments are used by medical physicists to set the radiation dose for cancer treatments in hospitals.

In September ARPANSA took delivery of a new water calorimeter primary standard for radiation dose with staff from the National Research Council Canada helping commission the equipment. This instrument will eventually replace the current graphite calorimeter operated by ARPANSA.

Ensure protection of people and the environment through efficient and effective regulation

Significant regulatory activities

ARPANSA routinely assesses licence applications and requests for approval to make changes to facilities and associated activities which may have significant implications for safety.

ARPANSA approved the following changes with significant implications for safety, under section 63 of the Regulations:

- An ANSTO facility licence amendment was granted to characterise possible airborne contamination of a vault, at its Cyclotron Facility at Camperdown that is planned for future decommissioning.
- ARPANSA approved two buildings at ANSTO's Lucas Heights site, for removal from regulatory control. The two disused ancillary buildings attached to the permanently shut down High Flux Australian Reactor, were shown to be free of radioactivity.

Following consultation with our Licence holders, ARPANSA has removed the pre-approval requirement for the disposal of certain low risk sources, under certain circumstances. This will be implemented for all licence holders in future regulation updates. The been applied as a licence condition to the Department of Defence and is available to other licence holders on request.

ARPANSA amended the following licences, under section 36 of the Act:

- The ANSTO Ore Processing Operations Facility Licence (F0245) for the temporary increase in the footprint of the facility.
- ARPANSA Medical Radiation Services Facility licence (F0046) to remove the Elektra Synergy Linear Accelerator. In addition to this, the original licence condition F0046 licence requiring maintenance of an accurate source inventory, has been removed since it is already required by section 62 of the ARPANSA Regulations.

Inspections

ARPANSA conducted 8 inspections this quarter. ARPANSA undertakes a program of scheduled inspections of licence holders to monitor compliance with the Act and the ARPANS Regulations. The inspection reports can be found at: www.arpansa.gov.au/regulation/inspections/reports.

Stakeholder engagement

- This quarter, ARPANSA has commenced consultation with our regulatory stakeholders to streamline the process for low-risk imports that are below the exemption limits.
- In August, a tri-agency meeting on nuclear security, between ANSTO, Australian Safeguards and Non-Proliferation Office (ASNO) and ARPANSA, was held. The meeting provides the platform to discuss a range of matters of mutual interest and is an opportunity to articulate regulatory expectations from both ARPANSA and ASNO.
- In August, the first ARPANSA-Australian Radiation Waste Agency (ARWA) Liaison Forum was held. Technical meetings were also organised with ARWA on regulatory expectations for the transport of

radioactive waste. Bi-monthly meetings have been re-established between ARPANSA and ARWA to ensure regulatory requirements and expectations are understood.

- This quarter, ARPANSA sought feedback from licence holders on the proposed amendments to the Australian Radiation Protection and Nuclear Safety Regulations 2018 to take effect on 1 July 2023. These changes include arrangements for emergency preparedness and response, arrangements and management for security of controlled apparatus, controlled material and controlled facilities, maintaining an inventory of sources and exemptions from CEO approval for certain disposals.

Radioactive material import and export permits

The import and export of radioactive material to and from Australia requires permission under Regulation 4R of the Customs (Prohibited Imports) Regulations 1956 and Regulation 9AD of the Customs (Prohibited Exports) Regulations 1958. Under these regulations, ARPANSA officers are authorised to issue import and export permits.

Permits issued this quarter:

Type of permits	Urgent (single shipment)	Standard (single shipment)	12 months
Import of non-medical radioisotope	27	61	9
Import of medical radioisotope	0	133	4
Export of high activity source	0	10	0

Transport of radioactive material

Under the Code of Practice for the Security of Radioactive Sources (RPS 11, 2019), security-enhanced sources are assessed to ensure the security considerations, including the transport arrangements and route are suitable for the shipment. ARPANSA validated two transport security plans this quarter.

Details of directions given by the Minister under section 16 of the Act.

No directions were given by the Minister under section 16 of the Act.

Details of directions given by the CEO under section 41 of the Act.

No directions were given by the CEO under section 41 of the Act.

Details of improvement notices given by inspectors under section 80A of the Act.

No improvement notices were issued by ARPANSA under section 80A of the Act.

Details of any breach of licence conditions by a licensee

ARPANSA publishes performance history of licence holders on the ARPANSA website: www.arpansa.gov.au/regulation-and-licensing/regulation/our-regulatory-services/who-we-regulate/licence-holder-performance.

There was one breach confirmed this quarter with minor safety implications or administrative failures to meet regulatory requirements:

- ANSTO failed to seek approval to dispose of controlled material outside of the Commonwealth. Licence Condition 1(b) requires the Licence Holder to comply with section 65 of the Australian Radiation Protection and Nuclear Safety Regulations 2018 (the Regulations). Section 65 requires the Licence Holder to seek approval to dispose of controlled material. This breach was self-reported.

Facilities licensed under Part 5 of the ARPANS Act this quarter

No facility licences were issued in the period.

The operations of the Council and Committees

Radiation Health and Safety Advisory Council

The Radiation Health and Safety Advisory Council (the Council) met remotely on 18 August 2022.

The Council discussed considerations and principles for any future regulation of nuclear-powered submarines, noting the mandate ASNO has for nuclear safeguards. The Council agreed to finalise a letter of advice to the CEO of ARPANSA on the topic of nuclear-powered submarines regulation. The Council also discussed the preparations for the IAEA Integrated Regulatory Review Services (IRRS) follow up mission in 2023, the status of ARWA's planning for the proposed National Radioactive Waste Management Facility (NRWMF), and ARPANSA's ongoing work on laser safety.

The minutes of meetings are provided online at www.arpansa.gov.au/rhsac. The next Council meeting is scheduled for 24 and 25 November 2022 in Brisbane.

Reports to the CEO from the Council under paragraph 20(f) of the Act

The Council did not provide any reports to the CEO during this quarter.

Radiation Health Committee

The Radiation Health Committee (RHC) met remotely on 25 August 2022.

The RHC discussed progress on addressing recommendations from the 2018 IAEA IRRS mission. The RHC also received a presentation on Australia's emergency preparedness and response (EPR) capabilities and

discussed Australia's EPR with respect to radiological incidents. It was acknowledged that Australia has scope for improvement in this area.

The RHC also received updates from working groups on a compliance testing standard for radiation equipment, updating *the Code of Practice and Safety Guide for Radiation Protection in Dentistry (2005)* and consolidating or reviewing codes and standards for radiation gauges, well-logging, and x-ray equipment.

The minutes of meetings are provided online at www.arpansa.gov.au/rhc. The next RHC meeting is scheduled for 23 November 2022 in Brisbane.

Nuclear Safety Committee

The Nuclear Safety Committee (NSC) did not meet this quarter. The next meeting of the NSC is scheduled for 28 October 2022.

Reports to the CEO from the NSC under paragraph 26(1)(d) of the Act

No reports were provided during this quarter.