



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



**Quarterly Report**

**of the**

**Chief Executive Officer of ARPANSA**

**January to March 2023**

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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

05 July 2023

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 (the RHC)
- 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 1 January to 31 March 2023.

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

Rick Tinker  
Acting 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:

1. Provide high quality advice to government and the community on health, safety and environmental risks from radiation.
2. Provide emergency preparedness and response systems for a radiological or nuclear incident.
3. Promote patient safety in radiotherapy and diagnostic radiology.
4. Ensure the 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 March 2023, a survey of the radiofrequency electromagnetic energy environment in Melbourne was published in the peer-reviewed journal *Radiation Protection Dosimetry*. The survey found that all measured radio waves were well below the permitted Australian standard limits for public EME exposure. ARPANSA provides evidence-based scientific advice on EME and health in support of the Federal Government's Electromagnetic Energy (EME) Program. These findings provide confidence to the Australian community that high-frequency wireless technologies are safe.

This quarter, ARPANSA's Talk to a Scientist service received 258 enquiries through various communication mediums. The Talk to a Scientist service is a unique offering, which allows members of the public to speak directly with an expert about their radiation concerns, as well as dispelling misinformation about the effects of radio wave exposure on health.

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

### ***Visiting Ships Panel (Nuclear) (VSP(N))***

ARPANSA staff completed work to support the Tasmanian Port validation of Hobart, which verified the port's ability to host nuclear-powered vessels visits and respond in the case of an emergency. ARPANSA staff also travelled to Western Australia for two scheduled submarine visits from the United States of America. ARPANSA is an active participant in the VSP(N) and associated Technical Working Group, which oversee arrangements to ensure the Australian public and the environment is safe during visits from nuclear-powered vessels.

### ***Western Australian source search and recovery incident***

ARPANSA staff responded to the request from the Western Australian government to assist in the search and recovery of a small radiation source, which was part of a portable radiation gauge. The missing radioactive material became detached during transit between a mine north of Newman and Perth, Western Australia, on 10 January 2023. ARPANSA sent a deployment team with specialised car-mounted and portable detection equipment to support the search of the transport route. The source was found two metres from the roadside on the Great Northern Highway near the town of Newman on 1 February 2023. ARPANSA's equipment and expertise forms part of the national radiation protection and emergency response capability.

## **Promote patient safety in radiotherapy and diagnostic radiology**

### ***Primary Standards Dosimetry Laboratory***

In March 2023, the results of ARPANSA's international comparison of absorbed dose for linear accelerators were approved for publication in the public Key Comparison Database. This comparison takes place under

the Metre Convention – an international arrangement to establish equivalence between measurements in different countries. The level of agreement indicates that radiation dose in Australia is equivalent to doses overseas, which is critical to ensuring the safe use of radiation in medicine in Australia.

The Key Comparison Database is available at <https://www.bipm.org/kcdb/comparison?id=1237>.

### ***Medical imaging***

ARPANSA and representatives of relevant professional bodies in nuclear medicine have agreed on the recommendations to revise the Australian national diagnostic reference levels (DRLs) for nuclear medicine and positron emission tomography (PET). The DRLs were derived from a survey conducted between October 2021 and March 2022 which recorded the radiation doses delivered to patients in nuclear medicine and PET imaging procedures. The recommendations have been endorsed by the participating professional bodies and the revised DRLs will be published on ARPANSA's website. Imaging facilities conducting nuclear medicine and PET procedures, are required to compare the doses they deliver to patients against the national DRLs and optimise their procedures as needed. This process of assessment and review helps to avoid excessive radiation dose to patients in nuclear medicine imaging procedures.

## **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's independent assessments and oversight of these changes provides assurance that these facilities are operated safely in compliance with the Act and in consideration of best practice in radiation protection and nuclear safety.

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

- ARPANSA approved a request from Australian Nuclear Science and Technology Organisation (ANSTO) Health Products to extend the life of liquid waste tanks for an additional 18-years, following a regulatory review of an ANSTO engineering assessment. The double-walled, tanks, which are housed in a watertight bunker (bund) contain intermediate level liquid radioactive waste originating from the former ANSTO radiopharmaceutical production facility. The tanks' lifespan was originally approved for 12 years, as it was expected that the waste would be processed, and tanks emptied, within this time. It is anticipated that the waste will be processed at the future SyMo waste management facility.
- ARPANSA approved a request from ANSTO's Nuclear Medicine facility to replace the gate valve. In 2019, the failure of a gate valve halted production of radiopharmaceuticals for several weeks. This modification involves a simplified and more reliable gate valve design that will improve the reliability of radiopharmaceutical supply to the community.
- ARPANSA approved a request from the ANSTO Australian Synchrotron for the unrestricted use of the Micro-Computed Tomography (MCT) beamline. A new licence condition was imposed requiring further measurements to confirm the potential radiation doses in the area where workers may be



present. The MCT beamline was designed in response to the needs of the user community for non-destructive structural characterisation of materials.

- ARPANSA approved a request from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) to progress the Pilot Trial Implementation Plan for the Contaminated Waste Remediation Pilot Project. The work to be undertaken involves the removal of a representative quantity of drums from a CSIRO radioactive waste store. Work methods and processes designed to safely handle, sort, characterise, dispose or recycle the waste material will be evaluated. The information obtained will inform future work and enable the costing of full-scale remediation of the waste store.

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

- ARPANSA approved a request from ANSTO to double the production of Lutetium-177, which is a radiopharmaceutical product used for diagnosis and treatment of diseases such as cancer. This approval involved an amendment of the ANSTO Health Products licence to remove a licence condition, imposed in 2021, which required the optimisation of radiation protection and safety of the process. Optimisation refers to the actual exposure, likelihood of exposures and number of exposed persons being as low as reasonably achievable. Removing this licence condition for this process enables the facility to increase production without undue risk.
- ARPANSA approved a request to amend a licence condition on the ANSTO Ore Processing Operations Facility Licence. The amendment provides a temporary extension to expand the area covered by the licence to permit shipping containers containing legacy contaminated waste to remain on the ANSTO site, pending disposal overseas. Recent wet weather had delayed the collection of the waste from Hunters Hill in Sydney.

ARPANSA exempted the following activities under Regulations section 43:

- ARPANSA's Medical Radiation Services was granted an exemption from a siting and construction licence to install a new, replacement clinical linear accelerator. In line with standard practice to manage any potential conflicts of interest, an independent assessment by the Tasmanian radiation regulator was undertaken regarding the requested exemption. The operation of the new linear accelerator will be subject to the review and approval of an operating licence.

### ***Inspections***

ARPANSA conducted 9 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](http://www.arpansa.gov.au/regulation/inspections/reports)

### ***Stakeholder engagement***

ARPANSA is open and transparent in its regulation of licence holders and recognises that effective communication is important to ensure the delivery of good safety outcomes. Notable engagement activities included:

- A stakeholder engagement meeting between ANSTO, ARPANSA and Australian Safeguards and Non-Proliferation Office (ASNO) was held this quarter. The meeting is a biannual engagement between the organisations to facilitate the sharing of information and best practice, encourage positive regulatory outcomes in nuclear security, and resolve issues of mutual concern.

- ARPANSA and the Australian Radioactive Waste Agency (ARWA) organised a high-level forum to engage executives and managers of both organisations. This was the second meeting of its kind and is held biannually.

### ***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:

<b>Type of permits</b>	<b>Urgent (Single shipment)</b>	<b>Standard (Single shipment)</b>	<b>12 months</b>
Import of non-medical radioisotope	33	59	3
Import of medical radioisotope	1	141	6
Export of high activity source	13	-	-

### ***Transport of radioactive material***

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

## **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](http://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:

- The Department of Home Affairs was found to be in breach of the Act for failing to adhere to the document review period for plans and arrangements, as required by subsection 61(1) of the Regulations and the safety standard, 'Radiation Safety for Personnel Security Screening Systems Using X-rays or Gamma Radiation'. The Department of Home Affairs has reviewed the Body

Scanner (BSCAN) standard operating procedure and is in the process of developing an updated radiation survey and compliance inspection schedule for BSCANs.

## **Facilities licensed under Part 5 of the ARPANS Act this quarter**

There were no facility licences issued this quarter.

## **The operations of the Council and Committees**

### **Radiation Health and Safety Advisory Council**

The Radiation Health and Safety Advisory Council (the Council) met on 30 March 2023 in Melbourne.

The Council discussed the likely impact for ARPANSA of the 14 March 2023 announcement of the optimal pathway for nuclear powered submarine (NPS) acquisition, with a particular focus on the implications for ARPANSA's staffing and workforce. The Council also discussed public concerns and interest in the NPS program, and lessons learned from the lost source incident which occurred in Western Australia in January 2023. This meeting was the final one for several members with terms ending 31 March 2023. The Council discussed issues to highlight for the next term of the Council, and members were thanked for their work in the current term.

Minutes of Council meetings are available at [www.arpansa.gov.au/rhsac](http://www.arpansa.gov.au/rhsac). The next Council meeting is scheduled for 10 – 11 August 2023.

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

No reports were received from the Council this quarter.

### **Radiation Health Committee**

The Radiation Health Committee (RHC) did not meet this quarter.

The minutes of previous meetings are published online at [www.arpansa.gov.au/rhc](http://www.arpansa.gov.au/rhc). The next meeting of the RHC is scheduled for 5 April 2023.

### **Nuclear Safety Committee**

The Nuclear Safety Committee (NSC) met on 9 February 2023. The main topics discussed were the structure and format of ARPANSA guidance, key regulatory activities, and the status of controlled facilities in Australia.

The minutes of the meeting are available at [www.arpansa.gov.au/nsc](http://www.arpansa.gov.au/nsc). The next meeting of the NSC is scheduled for 20 July 2023.

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

No reports were provided during this quarter.