



Radiation Health Committee

Meeting Minutes

Date	27-28 July 2023
Time	1:00 PM - 4:00 PM (Day 1) and 8:30 AM – 2:00 PM (Day 2)
Location	WA Maritime Museum, Victoria Quay Road, Fremantle WA 6160
Present	Dr Roslyn Drummond (Chair), Dr Gillian Hirth, Mr Bradley Feldtman, Ms Fay Bellis, Mr Glenn Riley, Mr Mark Carey, Ms Penny Hill, Mr Simon Critchley, Ms Hazel Upton, Dr Joanna Wriedt.
Absent	Dr Stephen Newbery, Mr Daniel Bellifemine.
Secretariat	Mr James Wheaton, Dr Adrian Hawley.
Invitees	In-person: Mr Nehal Ahmed, Mr David Kruss, Dr Andrew Robertson, RADM Katherine Richards, CDRE Guy Holthouse, Mr Frank Harris, Mr Ryan Hemsley, Dr Peter Johnston Virtual: Mr Keith Baldry, Assoc. Prof. Ivan Williams, Dr Rick Tinker, Ms Bec Sykes, Mr Keith Baldry, Dr Katie Volter, Mr Nathan Wahl, Dr Chris Brzozek, Mr Jim Scott, Ms Jenni Stiffe, Dr Marcus Grzechnik, Dr Fiona Charalambous, Mr Blake Orr, Mr Erin McWilliams, Mr Christopher Nickel.

1 - Introduction

The Chair opened the meeting, respectfully acknowledging the Traditional Owners and Custodians (the Whadjuk people) of the land on which the meeting was held (Walyalup), paying respects to their Elders, past and present. The attendance of proxy observers for Tasmania and South Australia were noted. No conflicts of interest were declared. The minutes of the 5 April 2023 online meeting were endorsed as final, and the secretariat provided an update on actions taken to address tasks from the previous meeting. Progress by a working group to consider how the draft revised diagnostic imaging accreditation scheme (DIAS) standards relate to the radiation protection series (RPS) codes was delayed until the draft DIAS standards are available.

2 - ARPANSA CEO Update

ARPANSA's CEO gave an update on the activities of the Nuclear Safety Committee (NSC) and Radiation Health and Safety Advisory Council (the Council), noting the commencement of new terms for several members on the Council following recent Ministerial appointments.

The NSC met in Sydney on 20 July 2023. It discussed the preparation of Advance Reference Material (ARM) for the upcoming International Atomic Energy Agency (IAEA) Integrated Regulatory Review Service (IRRS) follow-up Mission to Australia. It also discussed updates on regulatory matters related to the Australian Nuclear Science and Technology Organisation (ANSTO), including the reactor riser on the Open Pool Australian Lightwater (OPAL) reactor, the SyMo waste processing facility, and the ANSTO Nuclear Medicine production facility. It was noted that the term of the current NSC ends on 31 December 2023 and plans to establish the next term of the NSC are currently underway.

The Council met in Melbourne on 30 March 2023. As this was the final meeting of the current term, discussion focussed on key ongoing issues to be noted and passed onto the next term of Council. The first meeting of the next term of Council is on 10-11 August 2023, with key topics to include the health industry impact of national uniformity; ARPANSA's strategic direction; emergency preparedness and response national issues, concerns, priorities, and opportunities for improvement with respect to radiological events; the UN Sustainable Development Goals in Radiation Protection; and the challenges of building a future Radiation Protection workforce. The Council will also hear from the Australasian Radiation Protection Society (ARPS) about work on co-accreditation between ARPS and the UK Society for Radiation Protection (SRP), a national strategy for practitioner development, and the role of the Australasian Radiation Protection Accreditation Board (ARPAB).

In relation to the Australian Radioactive Waste Agency (ARWA), the RHC noted the outcome of relevant litigation on Tuesday 18 July 2023, which found in favour of the traditional landowners on the grounds of apprehended bias in the decision-making process for site selection. The finding set aside the site declaration for Napandee, near Kimba, South Australia.

ARPANSA noted that the 'Defence Legislation Amendment (Naval Nuclear Propulsion) Bill 2023' had passed Parliament and received Royal Assent. It amends the *Australian Radiation Protection and Nuclear Safety Act 1998* and the *Environment Protection and Biodiversity Conservation Act 1999*, to clarify that naval nuclear propulsion is not proscribed as prohibited under either Act, enabling the CEO of ARPANSA to continue to exercise regulatory powers with regard to naval nuclear propulsion. It was noted that the amendments do not disturb the moratorium on civilian nuclear power, and a second tranche of legislation is under development to establish an Australian Nuclear-Powered Submarine Safety Regulator (ANPSSR). ARPANSA continues to support this work, dependent upon resource-sharing discussions, alongside other work programs and resource commitments. The RHC also briefly discussed the implications of regulatory assessments being done on similar defence-related facilities located in different states or territories.

ARPANSA presented a summary of public and media enquiries received so far in 2023. The most common type of public enquiry was on electrical and telecommunications infrastructure, although there is a trend in recent years towards fewer such enquiries, with more enquiries about ultraviolet radiation, reflecting Australian's main radiation health risk. ARPANSA continues to receive very low numbers of media enquiries on regulation and waste related to the AUKUS announcement, the April 2023 Australian solar eclipse, Japan's planned Fukushima ALPS treated water release, cosmetic uses of non-ionising radiation, microwaves, and the 2023 lost radioactive capsule incident in WA.

3 - Member representing the public

The member representing the public noted there were no issues arising from correspondence.

4 - WA: lost source incident (Operator investigation outcomes)

The Chief Radiation Officer for Rio Tinto, Mr Frank Harris, presented to RHC on internal investigation outcomes of the lost radioactive capsule incident in January 2023. Rio Tinto complimented the Western Australian and Commonwealth contributors to the incident response search efforts and summarised its presentations to IAEA safety committees in relation to safety standards.

The RHC discussed issues around gauge design and selection, as well as regular inspection and compliance regimes. It also discussed the sharing of lessons learned through various channels, both within Rio Tinto and across other radiation protection forums. The RHC discussed possible implications for ARPANSA's Code for the Safe Transport of Radioactive Material (2019), particularly around the issue of vibration testing. It also discussed requirements for quality assurance in the manufacturing or throughout the lifetime of gauges, noting the relevance of external engineering expertise to gauge design assessment.

Rio Tinto noted that it has locked up remaining similar gauges, pending questions about how to transport them back to manufacturer, and is considering the use of possible alternatives to radiation gauges in its operations. The RHC discussed contract design (for gauge manufacturers and transporters) while noting that most licensed operators in Australia do not have specifically trained radiation experts on staff.

The RHC also discussed the visibility of regulatory approvals between jurisdictions, and Australia's role in raising mining-related issues within international best practice forums, particularly with the IAEA's Transport Safety Standards Committee and Radiation Safety Standards Committee.

5 - WA Radiological Council: lost source post-incident update

Dr Andrew Robertson, Chair of Western Australia's statutory Radiological Council (which regulates the keeping and use of radioactive substances, equipment and products in WA) attended and presented on the WA response to the lost radioactive capsule incident in January 2023. This included post-incident findings to-date, associated processes and timeline, and regulatory lessons learned.

The RHC discussed the incident timeline, including milestones such as the arrival at the depot and notification to the regulator of the lost radioactive capsule. The RHC also discussed gauge design failure, and the sharing of lessons learned between jurisdictions, particularly gauge certification procedures. Any regulatory changes WA makes in response to the lost capsule incident could inform other jurisdictions, noting that some elements of what are currently called 'best practice' may need to be viewed as standard practice in Australia, to set the expectations (with variances for various industries based on risk assessments). The RHC discussed how fragmented regulation in Australia may have contributed to the incident occurring or impacted the incident response. It also noted the model currently used for sealed sources, similar to package design for transport, for comparison, and significant contributory factors in this case such as siting and vibration.

It was noted that in other incidents of gauge damage, such as equipment falls following design failure, there are not always radiation safety issues. Where an incident does not result in radiation

safety issues, other regulators (such as work, health and safety regulators) may be better placed to investigate from an engineering standpoint. For this reason, the RHC noted that it is worth considering how engineering and radiation containment standards interface.

The RHC also discussed WA's approach in communicating the hazard to the public, in laypersons terms, noting the international coverage of the incident and the role of the media. The RHC discussed the conceptualisation of the hazard in terms of capsule appearance, the use of radiation dose benchmarks against natural background and chest x-rays, and coordination of messaging between the regulatory and combat response agencies involved.

6 - Nuclear-powered submarine program implementation

6.1 - Implications for Australian Codes and Standards framework

The RHC were given a short presentation on early considerations underway to accommodate nuclear safety into the codes and standards framework for Australia, which ARPANSA currently maintains with jurisdictional input through the RHC. A particular current focus is the need to incorporate nuclear safety into this national framework, and the RHC discussed the benefits of keeping the RPS as federal as possible and federated as necessary, putting the person in the operator at the centre of safety design, while noting the intersection of security and safety matters. Further consultation with RHC out-of-session will continue throughout 2023 and 2024.

Task: ARPANSA will report on its work to include nuclear safety in the RPS at the next meeting.

6.2 - RPS G-3 Default operational intervention level (OIL) values

ARPANSA presented proposed changes to Operational Intervention Level (OIL) 3 values in Table A.1 of ARPANSA's *Guide for Radiation Protection in Emergency Exposure Situations – Planning, Preparedness, Response and Transition* (RPS G-3 Part 2), to remove reference to measuring the marker nuclide concentration of Iodine-131 or Caesium-137.

ARPANSA's emergency exposure guidelines RPS G-3 Part 1 (the framework) and Part 2 (the guide) form part of the governing framework for responding to nuclear and radiological events in Australia. In a nuclear or radiological emergency early protective and other response actions are those which may need to be implemented in a matter of days following the start of a nuclear or radiological emergency to prevent deterministic and stochastic effects on the general population.

The RHC noted that the amendment to the OIL 3 values removes the provision for two different types of ground monitoring measurements for the same protective action, which may lead to confusion in some response situations about which type of measurement regime to implement.

The RHC noted that ARPANSA will continue to undertake further review of ingestion-based OILs for nuclear and radiological emergencies to determine if the values within RPS G-3 are fit for purpose and reflect international best practice.

Decision: The RHC endorsed proposed changes to the Operational Intervention Level 3 values.

Task: ARPANSA to draft and circulate a proposed RHC advisory note to publish alongside RPS G-3.

7 – Environmental Health Standing Committee (enHealth) update

The Department of Health and Aged Care provided an update on activities recently underway in connection with enHealth. The Radiation Health Expert Reference Panel and enHealth have recently supported work to draft Advance Reference Material for the upcoming IAEA Integrated Regulatory Review Service (IRRS) Follow-Up Mission to Australia scheduled for October 2023. This work has centred on articulating responses to findings from the 2018 IRRS Mission which related to multiple jurisdictions. Other work underway included the further development and finalisation of the draft National Strategy for Radiation Safety, following recent further jurisdictional feedback and context now available on the impact of the nuclear-powered submarine program implementation. The RHC raised the relevance of emergency preparedness and response issues in relation to any national strategy.

8 - 2023 IRRS Mission to Australia

ARPANSA provided an update on broader preparations underway for the IAEA IRRS Follow-Up Mission to Australia in October 2023. This included final arrangements for submission of the Advance Reference Material, various logistical arrangements and schedule plans impacting state and territory attendees.

Task: ARPANSA will circulate the draft IRRS schedule to RHC members.

9 - New items

9.1 - DRAFT Regulatory guide: Clearance of radioactive material

ARPANSA provided a preview of work underway on a draft *Regulatory Guide: Clearance of Radioactive material*, to address a recommendation from the 2018 Integrated Regulatory Review Service Mission to Australia, which will be circulated for feedback out-of-session.

The RHC noted the guidance will use scenarios from the Australian context. It also discussed situations where radioactive material goes through the 'circular economy' for resource recovery, such as in scrap metal recycling, and the need to bring a wider group of people and experts into the consultation process to understand how clearance can be addressed.

Task: RHC Members are to provide comment on the draft *Regulatory Guidance: Clearance of Radioactive Material* when it is circulated out-of-session.

9.2 - Draft revised A1, and A2 values for IAEA Transport Regulations 20xx

ARPANSA provided a summary of work underway to update A1 and A2 values for the IAEA Transport Regulations, SSR-6 (Rev.2) 20xx Edition, requesting RHC's feedback out-of-session.

The A1 and A2 values tabulated in the IAEA transport regulations SSR-6 (Rev.1) have been determined in order to limit the contents of packages so that radiological consequences following any failure of a package after an accident are deemed to be acceptable, within the principles of radiological protection.

A1 and A2 values are also often used to indicate the package standard performances required in the different transport conditions defined in SSR-6, as they represent equivalent radiological consequences for whatever radionuclide is involved.

The International Commission for Radiological Protection (ICRP), whose recommendations inform IAEA safety standards, has published updated and more complete data which supersede previous data sets in relation to transport values. New methods of calculation are also available. RHC members were asked to provide any comments via the secretariat for ARPANSA's representative on the IAEA Transport Safety Standards Committee working group, noting ARPANSA will coordinate all input to relevant IAEA safety standards committees and groups.

Task: The RHC were requested to circulate the revised A1/A2 values to stakeholders, particularly in industries such as rare earths, and provide comments on the impact of the proposed changes back to ARPANSA for input to the IAEA as part of the drafting process.

9.3 - Full body scanning at correctional facilities

The RHC discussed the issue of full body scanning, following on from its November 2022 discussion of recent developments and the regulatory implications and decision-making basis for the increased rollout of such imaging scanners at correctional facilities. This issue had been encountered or addressed in multiple jurisdictions independently, with the New South Wales Radiation Advisory Council having approved a course on imaging for security screening purposes. It had been noted that a key benefit submitted to regulators in use-case justifications was that of providing alternatives to invasive search methods, and the RHC discussed the potential need for a full code of practice on scanning humans for non-medical purposes, noting a previous RHC statement on non-medical human imaging.

The RHC discussed the rapid technological development in this area and that potential cohorts for application of the technology are likely to grow quickly, including for application to children. The RHC noted that any potential code should make clear that the very existence of the technology should not normalise its automatic use in any setting, with ethical considerations being important to consider.

The RHC discussed the need to consider if a code will only apply to correctional facilities, or be broader, such as the ARPANSA [Regulatory Guide on 'Human imaging for security screening purposes using ionising radiation - Justification and optimisation of practices'](#). It was also noted that ARPANSA could put this issue on the agenda of IAEA Radiation Safety Standards Committee, the International Electrotechnical Commission (IEC) and the International Commission for Radiological Protection (ICRP).

Task: The RHC agreed to establish a working group to develop a project and document plan, including a proposed scope, for a working group on full body scanning at correctional facilities.

10 - Working group updates

10.1 - Project and Document Plans

The RHC considered the current project and document plans tabled for comment or endorsement, for the well-logging and radiation gauges working groups.

The RHC noted that the scope for the radiation gauges code should be amended to specifically consider learnings from the W.A. lost radioactive capsule incident in January 2023. This should include subsequent contributions from the Queensland radiation regulator's paper about gauges. The RHC also noted that a draft code will need to allow for improvements in technology, and

consider how commercial in-confidence issues will impact the real-life information sharing between jurisdictional regulators in applying any future code requirements.

Action: RHC Members to provide comments on each project plan by 30 November 2023.

10.2 - RPS10 Review

During the preparation of the draft code, several questions were raised which the working group could not come to a unanimous resolution on. These are presented here for discussion ahead of the draft code being finalised for RHC consideration by November 2023.

The RHC received an update from the working group revising the Code for Practice for Radiation Protection in Dentistry (2005). The revision is intended to, amongst other things, accommodate new ionising radiation-related technology and expectations, give recognition to the role other dental practitioners play in the provision of dental imaging services, and to remove matters dealt with in the Planned Exposure Code (2020) to achieve better consistency in those matters across the radiation protection series. The RHC noted that the draft code is expected to be ready for further consideration ahead of the November 2023 RHC meeting.

The RHC discussed matters for which the working group sought guidance in preparing the draft code. This included questioning the retention of the term medical physicist in the code; the retention of requirements for third party technical assessment of dental imaging businesses; the retention of references to 'approved health screening programs' (similar to those in the *Medical Exposure Code (2019)*) to clarify their meaning in relation to periodic versus needs-based X-ray examinations; and, the inclusion of provision for future diagnostic reference levels.

The RHC discussed that the term medical physicist already has a definition in Victoria which had the potential to cause confusion, and that having a more flexible term would allow for variation. The RHC also separately discussed the use of term 'radiological dental practitioner' as potentially confusing, noting that 'dental practitioner' may be more useful.

The RHC discussed making a differentiation between cone-beam computed-tomography (CBCT) and other imaging, particularly noting regular use in children. ARPANSA noted it could look at a broad list of priorities for practices which use diagnostic reference levels (DRLs) and then look at where CBCT sits in the scheme of things with respect to risk.

The RHC also discussed issues around quality assurance or documentation in relation to the requirements in the current dental code, as well as the need to seek input from professional industry bodies (such as the Australian Dental Association or Australian dental board), which could contribute to issues such as referral criteria.

Decision: The term "qualified expert" should be used in the code, instead of medical physicist, while including a definition which also explains its professional requirements.

Decision: The draft code will note that any requirements for third party technical assessment of dental imaging businesses will be as per regulatory requirements in the relevant jurisdiction.

Decision: The terminology of 'approved health screening programs' should remain in the code, but be defined in the glossary.

Decision: The draft code should provide for the inclusion of diagnostic reference levels.

Task: ARPANSA will look at a broad list of priorities for practices which use DRLs including CBCT.

10.3 - Compliance Testing Standard

The RHC was provided with an update on work to establish radiation apparatus testing requirements, noting input from various jurisdictions through the working group, and a summary of issues addressed from consultation on a draft Compliance Testing Standard. Submissions were received from a variety of stakeholders, both as individuals and on behalf of organisations and professional bodies. Comments and contributions were generally supportive and some were submitted subsequently to the consultation process as a result of trialling the requirements.

The RHC noted that a comments resolution summary (generic and theme based, not specific comments) should be published with any other information relevant for ARPANSA documents.

Decision: The RHC agreed to proceed with the draft as tabled.

Task: The working group is to provide a suitable public version of the comments resolution table.

Task: ARPANSA will put the draft document into the correct template and bring it back to RHC by Nov 2023 for final endorsement, before going to Council in Dec 2023.

10.4 - Dosimetry Service Provider (DSP) Standard

The RHC noted the draft DSP Standard as tabled and discussed changes to the draft following previous feedback and further out-of-session discussion, along with aspects of implementation. It also discussed mechanisms for assuring regulator access to dosimetry data.

Decision: The RHC agreed to endorse the draft DSP Standard as tabled.

Task: Establish a working group to look at possible pathways for accreditation against the DSP.

11 - Regulatory knowledge exchange

As part of ongoing regulatory knowledge sharing sessions at each meeting of RHC, the WA member of RHC provided an overview of the regulatory considerations for the WA Radiological Council's decision to approve a low-level radioactive material disposal site at Sandy Ridge in WA. This included related historical context around the previous establishment of the WA-owned Mount Walton Intractable Waste facility.

The WA member also gave an overview of the broader regulatory systems and operations in WA, including the regulatory profile of WA for radiation protection. This session was open via videoconference and well-attended by radiation regulator staff from all Australian jurisdictions.

12 - Meeting Close

In other business, ARPANSA noted awareness of a national low-dose lung cancer screening program, with further information to be shared at the next RHC, or out of session earlier if possible. The member for Queensland noted they will be putting out a request for information about medical incidents or incidents in the delivery of non-laser IPL cosmetic procedures, and the member for Tasmania noted updates to their regulations, and an upcoming consultation on disposal. A request was also made for any records on what RPS codes or standards have been implemented by jurisdictions, with ARPANSA agreeing to obtain and circulate a summary collated via RHERP for the IRRS ARM.

Task: ARPANSA to request the Commonwealth Department of Health and Aged Care to circulate summary of RPS implementation mechanisms in each jurisdiction, as recorded through RHERP.