Australian Government
Australian Radiation Protection and Nuclear Safety Agency

arpansa

# Radiation Health and Safety Advisory Council ('Council')

# Meeting Minutes

**Date:** 27-28 July 2020

**Time:** 9.00 am – 12.00 pm (Day 1); 9.00 am – 12.00 pm (Day 2)

**Location**: via Microsoft Teams

**Chair:** Dr Roger Allison

**Members:** Dr Carl-Magnus Larsson, Dr Hugh Heggie, Mr Keith Baldry, Dr Stephen Newbery, Prof Pam Sykes, Ms Melissa Holzberger, Prof Adele Green, Dr Peter Karamoskos, Assoc Prof Melanie Taylor, Dr Jane Canestra, Dr Trevor Wheatley, Mr Jim Hondros.

**Apologies:** N/A

**Secretariat:** Mr James Wheaton, Mr Ben Paritsky.

**Observers:** Mr Jim Scott, Ms Tone Doyle, Dr Rick Tinker, Mr Nathan Wahl, Mr David Urban, Ms Jenni Stiffe, Dr Peter Thomas, Dr Gillian Hirth, Assoc. Prof Ivan Williams (all from ARPANSA), A/Prof Tony Hooker and Prof Nigel Spooner (CRREI), and Mr Thomas Ashby (Department of Health).

## 1. Standing items (Day 1)

### Item 1.1 CEO Welcome

The CEO welcomed the Council at the beginning of many members' triennial terms including two new members, Mr Jim Hondros and Dr Trevor Wheatley, and gave an overview of the functions of the Council.

### Item 1.2 Meeting formal open

The Chair formally opened the meeting, facilitated introductions, and noted two declarations of interests, both of which were deemed not conflicting with, or impeding on, effective and unbiased conduct of the meeting. Congratulations were also noted for the ARPANSA Deputy CEO and Branch Head Dr Gillian Hirth, on her appointment to Chair of the United Nationals Scientific Committee on the Effects of Atomic Radiation.

### Item 1.3 Housekeeping

Several matters regarding digital-format meetings were covered, and outstanding Action Items were noted.

### Item 1.4 CEO update on the Radiation Health Committee (RHC), Nuclear Safety Committee (NSC) and ARPANSA

The CEO noted recent activities of the RHC in relation to Council outputs and the progression of radiation policy issues with special reference to national uniformity. It was noted that for the NSC, its recent focus has been on reviewing a new process for safety assurance at the Australian Nuclear Science and Technology Organisation (ANSTO).

The CEO gave an overview of ARPANSA's recent activities, including the impact of Covid-19 on agency activities and services. International engagement has dropped significantly since the suspension of international travel, with most work moving to online forums, including at international bodies such as the International Atomic Energy Agency (IAEA). The 8th Review Meeting of the Contracting Parties to the Convention on Nuclear Safety (CNS), where the CEO of ARPANSA is vice president, has been postponed until March 2021. It was noted that ARPANSA continues to receive some media and public enquires in relation to 5G, and ARPANSA's Talk to a Scientist program for public enquiries moved to an email-only service while staff worked remotely.

### Item 1.5 Member representing the interests of the general public

The member representing the public provided an update on recent engagement with the Barngarla Determination Aboriginal Corporation (BDAC) and their legal representatives, and a summary of their correspondence directed to the Council expressing their concerns with the voting process in connection with the Australian Government (Department of Industry, Science, Energy and Resources) proposal for a National Radioactive Waste Management Facility (NRWMF) at the Napandee site in Kimba, South Australia.

It was noted that ARPANSA had subsequently reached out to BDAC through their representatives and had a teleconference with Chair of BDAC to listen to their concerns and explain the role of ARPANSA, as the independent regulator, in the Australian Government process to identify a site for a NRWMF.

The CEO of ARPANSA noted that ARPANSA is not a proponent of the proposed NRWMF, however does promote the safe final management of radioactive waste in accordance with international best practice. The benefits of establishing a well-constructed and well-sited facility was discussed in the context of the potential Council advice to the CEO, and the issue of trust was noted as being particularly important in relation to the mode of engagement and establishment of relationships for community consultations. The CEO reiterated that the focus should be on the establishment of a safe radioactive waste management system for future waste generated over the next 50 years or so, not just for existing waste.

Further consideration of Council's actions regarding the letter from BDAC occurred during discussion of Council's proposed work program (see item 4.2 below).

## 2. Current Status – major developments, future challenges

ARPANSA presented on major developments over the last year and future challenges for the next 12-18 months, to help inform the Council's view of emerging issues in radiation protection or nuclear safety.

### Item 2.1 Regulation

In regulatory matters, major developments over the last year included the ANSTO Nuclear Medicine (ANM) contamination accident and plant breakdowns; a safety Culture Perception Surveys at both ARPANSA and

ANSTO; a review of ARPANSA's Regulatory Framework and Regulatory Guidance; and Australian Government interest in Small Modular Reactor (SMR) technology.

The future operational challenges noted for ARPANSA as a regulator were the ongoing impact of COVID-19 interstate border closures on ARPANSA; the sustaining of a physical inspection programme during a pandemic; preparations to potentially receive a licence application for the proposed NRWMF; the regulatory oversight of ANSTO Radioactive Waste Management; the licensing of the operation of the ANSTO SyMo Facility; the implementation of the Action Plan from the IAEA Integrated Regulatory Review Service (IRRS) Mission (November 2018); and the review of national uniformity initiatives following enHealth and Radiation Health Expert Reference Panel (RHERP) involvement.

The Council discussed in particular the impact of Covid-19 on ARPRANSA's ability to conduct inspections.

### Item 2.2 Medical Radiation

ARPANSA highlighted several scientific and operational developments recently in medical radiation. The scientific areas include small field dosimetry; linac-based (direct) calibration; advanced audit development; and establishment of diagnostic reference levels for a variety of imaging procedures. The operational areas include deploying real-time and MRI-linac audits; ARPANSA's nomination as the auditing team for the Trans-Tasman Radiation Oncology Group clinical trials; ARPANSA staff co-chairing the Global Harmonisation Group; and the development of on-line and digital education packages.

The future challenges identified were the scientific issues around a new megavoltage primary standard; adaptive and 4D therapies; proton therapy; nuclear medicine-led Theranostics (which has implications for diagnostic reference levels); quantifying risk; and artificial intelligence & machine learning. Future operational challenges included interest from professions in capturing both incidents as well as 'near-misses' in an Australian Radiation Incident Register (ARIR) '2.0'; expansion (including international) of the Australian Clinical Dosimetry Services to include industry needs as well as prove and embed new types of audits; developing tools for automating dose calculation from an image; planning for a new primary standard to replace ARPANSA's 30 year old graphite calorimeter; the management of increasingly complex data being captured; deployment of diagnostic reference levels (DRLs) for new technologies; and artificial intelligence and machine learning applications within ARPANSA.

### Item 2.3 Radiation Health

Major recent developments in ARPANSA activities that consider the general health impacts of radiation were noted. These included new funding for an Enhanced EME Program; the rollout of the Australian Radiation Monitoring System (ARMS); the drafting of a National Radon Action Plan; the Personal Radiation Monitoring Service (PRMS) SciCal Automation; maintaining the Comprehensive Test-Ban-Treaty (CTBT) monitoring stations including at two new locations in the Pacific; influencing international best practice; and dealing with risk communication and misinformation in the public arena. Other areas included the exploring of options for engaging with other industries such as the oil and gas industry and others that deal with naturally occurring radioactive material (NORM) and generating waste with elevated levels of NORM. There is ongoing liaison with the Australian Space Agency regarding radiation health aspects of space travel. The Council also noted work being undertaken in preparation for a potential NRWMF licence application.

### Item 2.4 Laser Technology Issues

The Council heard expert views on the future challenges of laser technology, especially low-cost high-power laser pointers. It was noted that the industrial use of lasers was once limited, but now lasers are used widely, with non-expert operators under little guidance, and retrospective enforcement. It was noted that the use of lasers in health care is not uniform, although the use of lasers in the Commonwealth jurisdiction is well-regulated by ARPANSA, given that an ARPANSA licence requires licence holders to have a detailed understanding of what they are responsible for as a licensee. More broadly, however, many users of lasers consider them as just 'tools' and users do not appreciate risks and complexities sufficiently.

Consumer lasers were noted as one of the more pressing safety issues looking forwards, due to advances in technology for low-cost but high-powered lasers. Examples include moving-platform lasers such as cars and trucks, LIDAR and high-density usage of lasers. Airborne lasers in populated areas were another growth area, such as for measurements, mapping and remote sensing activities (e.g. train networks, scan tunnels) where the laser applications vary substantially in power. Lasers used for deliberate viewing were also noted, such as in smartphones for facial recognition, with some major companies investing significantly in safety while some market entrants may present a risk. This included augmented-reality applications.

Overall it was noted that the availability of laser technology is increasing regardless of consumer laws. The laser spectrum is broader than typically understood, which impacts communication devices. It was noted that Safe Work Australia has published guidance prohibiting the use of certain lasers in construction, however many lasers continue to be used. Key safety challenges are the varying skill of laser users; the sheer number of products; and ensuring product compliance.

## 3. Items for review (Day 2)

### Item 3.1 Medical Imaging – regulatory justification

Council noted the medical imaging working group were a useful resource for input to the Radiation Health Committee's (RHC's) work on the Code for Radiation Protection in Medical Exposure, Radiation Protection Series (RPS) C-5. The working group was thanked for their feedback on the December 2019 action item to provide feedback on a justification section within a regulatory expectations document.

It was suggested that the Council may have opportunities to engage on justification and optimisation through input to policy conversations so that there is a 'champion' of issues through to the Medical Services Advisory Committee (MSAC) in the Commonwealth Department of Health.

The Council further discussed other issues in imaging referrals, noting that no one body has full carriage of a particular issue in medical imaging, and that the total radiation dose to Australian public from medical imaging already constitutes a very significant fraction of the population exposure and is believed to be increasing. A key challenge is presenting sufficient evidence about the rising rate of radiation doses.

It was noted that in some jurisdictions referrals and interventional procedures can be written by staff other than a referring physician. Therefore, education of the radiation protection principles of optimisation and justification for undergraduates as well as other health professionals needed to be considered as a separate issue. It was also noted that consumer expectations for ongoing imaging may also be an issue after an imaging procedure has occurred the first time.

The Council suggested that ARPANSA should further foster its relationship with the Australian Commission on Safety and Quality in Health Care with a view to collaborate on these issues in a considered way. The medical imaging working group will develop new terms of reference and consider a study question to explore, that ARPANSA could take to a research institution, to provide data to support the issues.

**Action: Terms of Reference to be developed for endorsement, and consider recommending research.**

### Item 3.2 Naturally Occuring Radioactive Material

The Council considered the outcomes of discussions from a working group on naturally occurring radioactive material (NORM), including recommendations in a draft letter to the CEO of ARPANSA. There were a number of key issues on NORM tabled for consideration in the draft letter which the Council agreed were well articulated and relevant. It was noted that there is a lack of supporting data around some of the statements that Council would make in any recommendation to the CEO. The importance of gathering high-level data as evidence for advice to the CEO of ARPANSA was noted. Council also agreed given Australia's mineral resources economic interests, there is a good argument to position Australia, through ARPANSA, in a leadership role internationally on NORM.

**Action: The draft letter of advice to the CEO is to be re-circulated to members for feedback.**
**Action: The NORM working group is to meet again to consider the feedback.**
**Action: A letter to thank former Council Member Mr Frank Harris for his key input on NORM matters.**

### Item 3.3 Cosmetic lasers

The Council considered issues around cosmetic lasers including product compliance, safety training of users, and type of certification. It was noted that Australia's Therapeutic Good Administration are reviewing their 'medical devices' regulation to better align with the European Union and better manage import of devices, including looking at regulating devices without a medical use. It was noted that ARPANSA had developed advice to consumers in 2018 and noted insufficient evidence of incidence of detrimental health consequences to justify regulation. Council acknowledged that the actual incidence is larger than the reported incidence, likely by a large margin.

The Council discussed the issue of waiting for evidence, which is retrospective, and may not support a preventative approach that means taking proactive actions as safety precautions. Discussion included that priorities in regulation need to be based on risk assessment as part of a regulatory impact assessment, noting that at the global level, including the WHO, there is advice being developed for regulators to consider risk assessments and a graded approach to this issue.

The Council noted that there are a number of Commonwealth stakeholders involved in this issue, which would need to be engaged to ensure a national approach.

**Action: Council to set up a laser safety working group, which would include the issue of cosmetic lasers.**
**Action: Circulate a relevant International Commission on Non-Ionising Radiation Protection (ICNIRP) statement on cosmetic lasers to all members.**

## 4. Other business

### Item 4.1 Centre of Radiation Research, Education and Innovation (CRREI)

ARPANSA provided some background on CRREI, and the CRREI Director provided a guest presentation with more information on the centre's purpose and objectives. Council members agreed that this is a good initiative for Australia and put forward some areas of interest for potential research, such as low dose radiobiology (Maralinga bush tucker is one area for of research for low dose radiobiology), emergency preparedness and response, psychology and communication. Council discussed ARPANSA's integrity in the context of the agency's potential involvement in CRREI initiatives, including educational or other activities. It noted ARPANSA's future support would depend on the details of any programme offerings and the need to maintain agency independence, while recognising the need for education and training more broadly.

### Item 4.2 Proposed work program

Regarding the letter from BDAC, the Council noted that the member representing the interests of the general public had sent an acknowledgement reply, and it agreed to meet again to consider its formal reply.

Council also agreed to review how subsequent meetings would be structured, given the digital format of remote meetings during Covid-19, potentially focussing on one issue at a time at more regular intervals.

The topics identified for single-issue meetings in 2020 (in addition to discussing a reply to BDAC) were broadly those of medical imaging, laser safety (including cosmetic lasers), and a national strategy for radiation protection.

**Action: Draft a letter of reply to BDAC.**
**Action: Secretariat to arrange a further three single-issue digital format meetings in 2020.**

### Item 4.3 Meeting close and housekeeping

The Chair closed the meeting at 12.00pm on Day 2.