Australian Government

Australian Radiation Protection and Nuclear Safety Agency

Quarterly Report

of the

Chief Executive Officer of ARPANSA

April to June 2015

Further information about this publication

If you would like to know more about the content of this publication please contact ARPANSA on 1800 022 333 or e-mail at ***info@arpansa.gov.au***. Further information about ARPANSA can be found on the Agency's website at ***www.arpansa.gov.au***.

The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is the Australian Government's primary authority on radiation protection and nuclear safety. ARPANSA regulates Commonwealth entities using radiation with the objective of protecting people and the environment from the harmful effect of radiation. ARPANSA undertakes research, provides services, and promotes national uniformity and the implementation of international best practice across all jurisdictions.

Printed by:

CanPrint Communications Pty Ltd
16 Nyrang Street
Fyshwick ACT 2609

Table of Contents

This page has been left blank.

Letter of Transmittal

26 August 2015

Senator the Hon Fiona Nash
Assistant Minister for Health
Parliament House
Canberra ACT 2600

Dear Minister

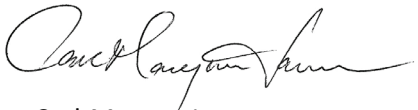
The *Australian Radiation Protection and Nuclear Safety Act 1998* (the Act) requires the Chief Executive Officer (CEO) of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) to submit to the Minister, at the end of each quarter, a report on:

- 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 any direction given by the Minister to the CEO under section 16 of the Act
- any breach of licence conditions by a licensee, of which the CEO is aware
- 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
- the 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 April to 30 June 2015.

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



Carl-Magnus Larsson
CEO of ARPANSA

Report on the Operations of the CEO and ARPANSA

ARPANSA is an agency within the Department of Health portfolio focused on delivering the outcome and program described in its Portfolio Budget Statement.

Outcome for the Australian community:

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

To deliver this outcome, the agency undertakes a planned set of activities collectively referred to as the **Radiation Protection and Nuclear Safety Program**.

This program is made up of four components:

- protect the public, workers and the environment from radiation exposure
- promote radiological and nuclear safety and security, and emergency preparedness
- promote the effective use of ionising radiation in medicine, and
- ensure effective and proportionate regulation and enforcement activities.

The report on the operations of the CEO and ARPANSA is based on these components.

Protect the public, workers and the environment from radiation exposure

Uranium Mining and Naturally Occurring Radioactive Materials Industries

ARPANSA maintains the Australian National Radiation Dose Register which records, stores and audits radiological dose histories for uranium industry workers in Australia. The Dose Register is receiving worker dose records from all four uranium mines that are licensed to operate in Australia: Olympic Dam, Beverley and Honeymoon (presently in caretaker mode) in South Australia, and Ranger (not presently mining but processing stockpiled material) in the Northern Territory. The Dose Register currently holds dose history records for more than 34,000 workers from the uranium mining and milling industry. ARPANSA is continuing to work on its expansion to include occupationally exposed workers in other industries, such as mineral sands mining and processing operations, and applicable Commonwealth practices.

Monitor and Mitigate Population Exposures to Electric and Magnetic Fields and Electromagnetic Radiation

During this quarter, the Standards Australia Committee TE-007 – Human Exposure to Electromagnetic Fields, chaired by ARPANSA, submitted its draft of the revised *Australian Standard 2772.2 Radiofrequency fields – Principles and methods of measurement and computation – 3 kHz to 300 GHz* for internal editing and review by Standards Australia prior to the release of a draft for public comment.

On 20 May 2015 a meeting of ARPANSA's Electromagnetic Energy Reference Group (EMERG) was held. EMERG was established to provide stakeholder and community input into electromagnetic energy issues and the group includes representatives from consumer organisations, the telecommunications industry, the health sector, academic organisations, other government organisations and community groups (***www.arpansa.gov.au/AboutUs/Committees/emerg.cfm***). The May meeting included a session focusing on electromagnetic hypersensitivity.

Solar Ultra Violet Radiation and Sun Protection

Currently ARPANSA measures solar ultraviolet radiation (UVR) at eleven sites around Australia and the UV Index data generated by the network is used to raise awareness in the Australian population of the risks associated with excessive sun exposure. During this quarter, ARPANSA started a process to refresh the solar UVR monitoring network with new sensor technology and better reporting capabilities to make the network more sustainable, robust and serviceable into the future.

ARPANSA also completed a draft requirements specification for the upgrade of the solar UVR monitoring network. This document will be further refined to ensure all the needs of all relevant stakeholders are addressed and it will then be used as a roadmap for improvements to the network. Trials of new data logging and measurement equipment have begun at the Yallambie laboratory this quarter and upon successful completion, the equipment will be installed at all eleven of ARPANSA's solar UVR monitoring stations in Australia.

Quality assurance of ambient measurements of solar UVR is critical to ensuring accuracy and stability. In 2013 a campaign of intercomparison between ARPANSA, Public Health England and the Bureau of Meteorology, supported by the National Institute of Water and Atmospheric Research of New Zealand was undertaken. During this quarter, the findings of the international comparison of solar ultraviolet radiation (UVR) spectral measurement systems were published with the results showing consistency with a mean difference of less than 10 percent.

Promote Radiological and Nuclear Safety and Security, and Emergency Preparedness

In May 2015, ARPANSA staff attended the ARGOS Decision Support System User Group meeting held in Rio de Janeiro, Brazil via video conference. This meeting included discussions on the application and development of the ARGOS atmospheric dispersion modelling tool and focused upon the direction of the ARGOS system, including consideration of the upgrade of the system to ensure the underlying architecture remains relevant and fit for purpose well into the future.

During this quarter, ARPANSA tested components of its internal radiation emergency preparedness and response (EPR) plan, the EPR Manual (formerly Incident Management Plan). This forms part of a broader exercise which will allow ARPANSA to validate its EPR competencies and where necessary update and improve the EPR Manual.

ARPANSA participated in the 2015 program of the IAEA Analytical Laboratories for the Measurement of Environmental Radioactivity Proficiency Test, which required the rapid analysis and reporting of sample of anthropogenic radionuclides in water, rice and soil samples. ARPANSA also participated in a proficiency test for gross alpha/beta, radium-226, radium-228, uranium and tritium in water. ARPANSA conducted a second capability exercise amongst nine radioanalytical laboratories in

Australasia. This exercise determined whether each laboratory could quantify the activity concentration of anthropogenic radionuclides in vegetable material. A report on the exercise is in preparation.

International Monitoring Network

As part of Australia's ongoing commitment to the Comprehensive Nuclear-Test-Ban Treaty (CTBT), ARPANSA operates and maintains radionuclide air particulate monitoring stations in Melbourne, Perth, Townsville, Darwin, the Cocos Islands, Macquarie Island, and Mawson Base (Antarctica), together with two noble gas monitoring facilities, co-located with the air particulate monitoring stations in Melbourne and Darwin.

During this quarter ARPANSA continued to operate the Australian CTBT Radionuclide Laboratory which is a certified laboratory for analysis of air particulate samples. A total of nine such test samples were analysed by the laboratory this quarter. The laboratory also participated in the annual Proficiency Test Exercise organised by the CTBT organisation with results from this exercise to be delivered towards the end of the year.

Promote the effective use of ionising radiation in medicine

Calibration Services

As a part of the Agency's regular calibration services for radiotherapy providers and industry users of radiation, ARPANSA calibrated six survey meters, two electrometers and three ionisation chambers. New calibration services for megavoltage photons and electrons are now established. ARPANSA has commenced work on the dosimetry of small radiation fields for the purposes of providing new calibration services. Such services are needed to support types of radiation therapy which use small fields.

Australian Clinical Dosimetry Service

The Australian Clinical Dosimetry Service (ACDS) is a joint initiative between the Department of Health and ARPANSA to provide an integrated national approach to promoting safety and quality in radiotherapy, which is expected to lead to further improvements in radiotherapy treatment outcomes. The ACDS provides radiation specialists with a source of independent checks for equipment and patient doses. This quarter the ACDS fulfilled the planned audit schedule while recruiting and training staff to meet the required 2015-2016 audit frequency.

Diagnostic Imaging

In May 2015, ARPANSA completed the national survey of nuclear medicine facilities and data analysis is underway to establish national Diagnostic Reference Levels in Nuclear Medicine.

The penultimate draft of the Radiation Protection of the Patient software training module has been submitted for final review and production. The final project report has been submitted to Department of Health. Preliminary work on the next software training module for Radiation Protection of Medical Personnel has been initiated.

Ensure effective and proportionate regulation and enforcement activities

Tabling of ARPANS Act Amendment Bill

On 18 June 2015, the Australian Radiation Protection and Nuclear Safety Amendment Bill was tabled in Parliament. This Bill proposed to amend the *Australian Radiation Protection and Nuclear Safety Act 1998* to provide for the regulation of legacy sites with radioactive material, and provide greater capacity for ARPANSA to act in the event of an emergency or non-compliance with the legislation. During the quarter, the Federal Executive Council also approved certain changes to the *Australian Radiation Protection and Nuclear Safety Regulations 1999* and *Australian Radiation Protection and Nuclear Safety (Licence Charges) Regulations 2000*. In addition to indexing the licence application fees and annual licence charges in line with the Wage Price Index, the changes also included certain amendments to cut red tape and reduce regulatory burden, bringing the regulations in line with the latest drafting convention of the Office of Parliamentary Counsel.

Regulatory Guides

A series of regulatory guides (***www.arpansa.gov.au/Regulation/guides.cfm***) was developed to assist both applicants and licence holders in achieving compliance with the ARPANS Act and Regulations. These guides are underpinned by a series of internal regulatory guides which assist ARPANSA staff in the assessment of licence applications and inspection and compliance monitoring of licence holders. Both sets of regulatory guides are maintained within a quality system.

ARPANSA continued its work in assessing current regulatory guides in an effort to promote the use of trusted international standards and facilitate ease of use by stakeholders. As part of ARPANSA's Regulatory Delivery Model initiative, many of the internal regulatory guides are being combined into handbooks to improve regulatory efficiency.

Significant Licensing Activities

The CEO of ARPANSA issued a facility licence to ANSTO to operate the Interim Waste Store at Lucas Heights Science and Technology Centre on 8 May 2015. This facility will be used to store the reprocessed radioactive waste returning from France. Consequently, the ANSTO organisation surrendered the Interim Waste Store construction licence on 29 June 2015.

ARPANSA received an application from the Reserve Bank of Australia to operate a handheld X-ray Fluorescence Analyser on 20 May 2015. An amended licence authorising its use was issued on 23 June 2015.

ARPANSA approved the construction of the active ventilation system under Regulation 54 at ANSTO Nuclear Medicine Molybdenum-99 Facility in May 2015. It is reported that construction of this facility will be completed in 2016.

ARPANSA approved the OPAL Reactor Control and Monitoring System upgrade under Regulation 51 on 12 June 2015.

Inspections

ARPANSA continued to implement its new Regulatory Delivery Model and undertook 25 site visits and inspections in the quarter. Inspection reports are posted on ARPANSA's website at ***www.arpansa.gov.au/regulation/inspections***.

Stakeholder Engagement

During this quarter ARPANSA hosted a workshop for Australian scientists involved with radiological protection of the environment, with a focus on strengthening national collaboration and international linkages.

ARPANSA signed a project work plan with the Norwegian Radiation Protection Authority to further develop the ERICA Tool and Database and strengthen its suitability for Australian conditions. ERICA (Environmental Risk from Ionising Contaminants: Assessment and Management) is a software tool that enables the assessment of environmental impact of ionising radiation on biota and ecosystems. These tools provide best practice approaches to assessing environmental exposures and demonstrating protection of the environment from the human activities.

During this quarter, ARPANSA led the redrafting work to update *AS/NZ 2243.4 Safety in Laboratories: Ionising Radiation* and ARPANSA worked cooperatively with Standards Australia to ensure the effectiveness of this working group. The work is progressing satisfactorily and the group has provided a preliminary draft of the standard and will meet in August 2015 to finalise the draft Standard.

From 21-24 April 2015, ARPANSA delivered a course in reference dosimetry for medical physicists and 14 trainees and a several senior physicists attended ARPANSA for a mix of lectures, dosimetry measurements and example calculations. The feedback was positive, particularly for the ionisation chamber calibration and small field dosimetry practicals. This was the first time ARPANSA has organised such an event.

The Australian Clinical Dosimetry Service continued its engagement with state and territory jurisdictional representatives to plan a sustainable long-term service. ARPANSA invited stakeholders to the first meeting for the assessment and formulation of nuclear medicine diagnostic reference levels. Stakeholder meetings with private radiology facility medical physicists were also initiated to discuss data accumulation and development of Mammography Diagnostic Reference Levels.

In June 2015, ARPANSA hosted two Licence Holder Forums in Sydney and Melbourne with two keynote speakers delivering presentations: Dr Stephen Koukoulas, on the economics of efficient and effective regulation, and Mr Donald Hoffman, CEO of Excel Services Corporation in the United States on recent developments in nuclear regulation. Both presentations were well-received and a copy of all speaker presentations can be found on the ARPANSA website at ***www.arpansa.gov.au/Regulation/forums***.

International Engagement

Meetings with the World Health Organization

The Steering Committee for the Non-Ionising Radiation Basic Safety Requirements is working with the WHO to develop the basic safety requirements for non-ionising radiation (NIR) exposure,

including electromagnetic and acoustic radiation. The meeting progressed the development the project plan, including process and project milestones and timelines. Once published, the requirements will provide an opportunity to harmonise the development of NIR protection practices in Australia.

The WHO International Electromagnetic Fields (EMF) project meeting received an update on the project's activities and a review of recent research activities including epidemiological and laboratory studies which identified knowledge gaps and highlighted the importance of ensuring the quality of journal publications. Participating in the project helps ensure that ARPANSA's advice to the community on topics such as the health effects of mobile phone use is based on the most recent scientific evidence.

The INTERSUN Programme focuses on the exchange of information about ultraviolet radiation (UVR) prevention strategies and scientific research. Amongst other presentations, ARPANSA provided an update on its sunbed database and, of interest to Australia, the European collaborating centres provided research summaries on skin cancer screening and occupational exposure to UVR. ARPANSA is likely to host a workshop on the UV Index risk scale in late 2015.

Participation at the WHO series of meetings was funded by ARPANSA.

37th Session of the Commission on Safety Standards (CSS), Vienna, Austria, 20-22 April 2015

The CSS advises on policy and oversees the development of the IAEA Safety Standards (SS). Currently, representatives of 25 Member States have been invited by the IAEA Director General to CSS. The CEO of ARPANSA is the Australian Representative. The meeting considered the review of Safety Standards development, performed by the Office of Internal Oversight Services (OIOS). The review considered the relevance, effectiveness, efficiency, impact and sustainability of the IAEA's work on SS, with focus on power and research reactors. The OIOS acknowledges that IAEA has established an effective process for development of SS, a logic structure, mechanisms for feedback and outreach. The CSS further discussed the proposal of an Emergency Preparedness and Response Standards Committee (EPReSC). The EPReSC has subsequently been established. This travel was funded by ARPANSA.

CTBTO Basic Technical Training Programme for Radionuclide Station Operators with SAUNA Equipment Uppsala, Sweden, 18-22 May 2015

ARPANSA attended the CTBTO's Basic Technical Training Programme for Radionuclide Station Operators with SAUNA Equipment (Noble Gas measurement system) in Uppsala, Sweden. By participating in the training ARPANSA has the skilled staff to operate and maintain Australia's radionuclide stations and support the CTBT. This travel was funded by the CTBTO and ARPANSA.

Fifth Review Meeting of the Joint Convention on the Safety of Radioactive Waste Management and on the Safety of Spent fuel Management, Vienna, Austria 11-22 May 2015

ARPANSA led the Australian delegation to the Fifth Review Meeting of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management which was held in Vienna, Austria. Australia's National Report explaining how it meets the obligations of the Convention was well received by its peer review group. Particular praise was received regarding

ARPANSA's regulatory consideration of inter-dependencies of multiple facilities on the Lucas Heights site. The Australian National Report is available on the ARPANSA website (***www.arpansa.gov.au/AboutUs/Collaboration/jointconv.cfm***). This travel was funded by ARPANSA.

International Atomic Energy Agency Workshop to review Implementation of QMS Programmes, Quezon City, Philippines 11-15 May 2015

ARPANSA attended the IAEA's Regional Cooperative Agreement (RCA) Workshop to review Implementation of Quality Management System (QMS) Programmes in Quezon City, Philippines. The RCA Regional Strategic Priorities 2012-2017 identified the marine environment as a priority area of study on the possible impact of the Fukushima radioactive releases in the Asia-Pacific Region. Work undertaken through this RCA project contributes to enhanced regional mechanisms and competency in radioactivity measurement, monitoring and assessment. The training received during the workshop will be applied within ARPANSA's radioanalytical services to enhance the operation of our ISO/IEC 17025 quality accredited laboratories. The presentations delivered by ARPANSA demonstrated to our regional partners, the benefits of having ISO/IEC 17025 quality accredited laboratories. This travel was funded by the IAEA.

2015 National Cancer Institute Radiation Epidemiology & Dosimetry Course, Washington, DC, United States 18-22 May 2015

ARPANSA attended the 2015 National Cancer Institute's (NCI) Radiation Epidemiology & Dosimetry Course, organised by the US National Cancer Institute which included presentations by leading experts on topics in radiation dosimetry, epidemiology, health effects and risks, laboratory work in genomics and radiobiology, and non-ionising radiation studies presented by leading experts. The NCI's CT software and paediatric voxel phantom data will add to the tools available to ARPANSA for computing patient dose in diagnostic imaging. Following the course, ARPANSA met with the American College of Radiology which agreed in principle to sharing its automated dose data collection system with ARPANSA. Implementing the system in Australia, could improve the level of participation by clinics in ARPANSA's National Diagnostic Reference Levels Service which provides clinicians with reference levels of radiation doses received by patients from similar diagnostic procedures conducted at other facilities. This travel was funded by ARPANSA.

International Atomic Energy Agency and Asian Nuclear Safety Network, Regional Workshop on Regulatory Inspection Programmes for Research Reactors, Dengkil, Malaysia, 18-22 May 2015

ARPANSA provided an invited expert to lecture at the Regional Workshop, held in Dengkil Malaysia. This workshop delivered practical information for participating countries to enhance their capabilities for the regulatory supervision of research reactors, with an emphasis on establishing effective regulatory inspection programs. The workshop covered regulatory frameworks, licensing activities, graded approaches to inspection, enforcement, periodic safety and security review, holistic safety and IAEA activities on research reactor safety. Australia is recognised as having robust safety standards and being a strong supporter of the IAEA Safety Standards. The workshop was a useful opportunity to promote regional nuclear safety practices including the application of the Safety Standards. This travel was funded by the IAEA.

15th International Congress on Radiation Research, Kyoto, Japan, 25-29 May 2015

In his capacity as the outgoing Chair of the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) and invited speaker, the CEO of ARPANSA spoke at the meeting on the findings and observations made by UNSCEAR's 2013 report (published 2014) on the health and environmental effects of the accident at the Fukushima Dai-ichi nuclear power plant. Justifiably, the accident and its consequences continue to attract a high degree of attention in Japan. This travel was funded by ARPANSA, the congress organisers and UNSCEAR.

62nd Session of the United Nations Scientific Committee on the Effects of Atomic Radiation, UNSCEAR, Vienna, Austria, 1-5 June 2015

As member and outgoing Chair, the CEO of ARPANSA, accompanied by an alternate (to the representative), attended the 62nd session of UNSCEAR in Vienna, Austria. Three draft scientific annexes were reviewed and discussed in detail and progress reports were received on a number of other documents currently under development and activities being undertaken by the secretariat.

The commencement of the 62nd session marked the conclusion of the CEO's term as Chair of the Committee; however, he will remain as an ex officio adviser to the Bureau (comprising the Committee officers) for the next two years.

Looking forward, UNSCEAR will continue work on the survey on medical exposures and will develop and initiate surveys on occupational and public exposures to radiation. ARPANSA has been a primary contributor to the medical exposure survey and will provide data and support to the occupational and public surveys as appropriate. This travel was funded by ARPANSA and UNSCEAR.

Third Technical meeting of the Application of the Practical Illustration and Use of the safety case Concept in the Management of Near-Surface Disposal Project (PRISMA), Vienna, Austria, 8-12 June 2015

ARPANSA attended the Third Technical Meeting of the Application of the Practical Illustration and Use of the Safety Case Concept in the Management of Near-Surface Disposal Project (PRISMA) which was held in Vienna, Austria. PRISMA focuses on the design and preparation of a model safety case involving all phases of the disposal facility lifecycle. The results of the meeting will be published as an IAEA document that will help Member States to use practical examples for siting, design and construction of a disposal facility. This travel was funded by ARPANSA.

30th meeting of the International Atomic Energy Agency Transport Safety Standards Committee, Vienna, Austria, 16-18 June 2015

The main focus of the Transport Safety Standards Committee meeting held in Vienna, Austria was to review the *IAEA Regulations for Safe Transport of Radioactive Material 2012 Edition, Specific Safety Requirements (SSR) No. SSR-6.* ARPANSA adopted this SSR into its Radiation Protection Series in December 2014.

Detailed discussion also took place on the Technical Guide *Package Design Safety Reports for the Transport of Radioactive Material*. France and Australia prepared the first draft of this document. The Technical Guidance considers the safety case for a dual purpose cask and is being used to assess the certification of the cask that is intended to be used to store the reprocessing waste at the ANSTO

Interim Waste Store. The Technical Guide provides assistance to the applicant in understanding the regulatory requirements that need to be satisfied in order to obtain approval. This travel was funded by ARPANSA.

38th meeting of International Atomic Energy Agency's Radiation Safety Standards Committee– Vienna, Austria, 23-25 June 2015

The Radiation Safety Standards Committee (RASSC) meeting, held in Vienna, Austria, reviewed three key documents, DS432: Draft Safety Guide: *Radiation Protection of the Public and the Environment;* DS427: Draft Safety Guide: *A general framework for prospective radiological environmental impact assessment and protection of the public;* and DS442: Draft Safety Guide: *Regulatory Control of Radioactive Discharges to the Environment.* Final drafts of the documents will be presented to the November 2015 meetings of the IAEA Safety Standards Committees.

The Committee were updated on the progress of the TECDOC - Guidance on Radionuclide Activity Concentrations for Food and Drinking Water. It was agreed that, apart from during an emergency, the Codex Alimentarius guideline values were considered appropriate for almost all situations and higher values should be adopted for national use only when fully justified.

Details of any Breach of Licence Conditions by a Licensee

Breaches with Significant Safety Implications

The investigation of an 'Incident', first reported in ARPANSA's October-December 2014 Quarterly Report, resulted in one breach with significant safety implications being recorded for the quarter. On 9 April 2015 ARPANSA found ANSTO Lifesciences at Camperdown in breach of Regulation 44 for failing to take reasonably practicable steps to prevent the override of a safety interlock on a hot cell at the facility. ANSTO voluntarily curtailed operations at this facility while it investigated the incident. The licence holder reported this event in a timely manner, investigated the cause, and implemented changes to prevent reoccurrence.

Breaches with No or Minor Safety Implications

One breach with minor safety implications was recorded during the quarter. This was due to a failure by a licence holder to comply with an operational limit and condition requiring a fire suppression system for a filtration system to be available.

Facilities Licensed Under Part 5 of the ARPANS Act

ARPANSA issued a nuclear installation licence F0292 to the ANSTO organisation to operate the Interim Waste Store at Lucas Heights Science and Technology Centre on 8 May 2015.

Transport of Radioactive Material

No approvals for the transport of radioactive material were issued in this quarter.

Operations of the Radiation Health and Safety Advisory Council, the Radiation Health Committee and the Nuclear Safety Committee

Radiation Health and Safety Advisory Council

During this quarter, the Radiation Health and Safety Advisory Council did not meet. The next meeting of the Council will be held on 2-3 July 2015.

Reports to the CEO from the Radiation Health and Safety Advisory Council (s.20(f) of the Act)

There were no reports to the CEO from the Council during this quarter.

Radiation Health Committee

The Radiation Health Committee met on 24 June 2015 at ARPANSA's Yallambie Offices.

The Committee discussed three public interest issues: amending the ARPANS Act; the South Australian Royal Commission on the Nuclear Fuel Cycle; and the regulatory implications of doses received from body composition scans.

The Committee noted the summary of responses received to date from the jurisdictions, in relation to the proposed 2018 Integrated Regulatory Review Service Mission to Australia. Responses from South Australia and Tasmania were cautiously positive. Victoria and the Northern Territory had indicated likely support pending further information and Western Australia's response was still to be received.

A representative from AUSGRID delivered a presentation on the development of an industry EMF handbook and the Committee, while not able to formally endorse the handbook, recognised the industry's initiative to promote national uniformity based on world's best practice.

The Committee noted a commitment in the *National Directory for Radiation Protection (NDRP)* to include Schedule 13 reporting criteria for mining in future editions and discussed the new criteria proposed for mining and mineral processing of uranium and other naturally occurring radioactive material (NORM), and for uranium and other NORM residue management. Based on the discussion, the South Australian representative undertook to revise the wording of the proposed criteria and circulate to members out of session before wider consultation is undertaken.

The Committee received progress reports on the following projects:

- The Planned Exposure Code;
- The Revision of RPS 14 (aligning with the new International Basic Safety Standards, GSR Part 3);
- Existing exposure situations;
- Management systems and safety culture;
- IPLs and lasers;
- User disposal and amendment 7 of the NDRP which, it was noted, is still progressing through the Australian Health Ministers' Advisory Council;

- Protection of the environment; and
- Review of RHS 30, 15 and 16.

The Committee noted ARPANSA's intention to reference ICNIRP 2010 for guidance on ELF exposure and agreed to the following statement supporting this action for the ARPANSA website:

> *The Radiation Health Committee agreed at its 24 June 2015 meeting that it would withdraw the existing NHMRC RHS30 guidance on ELF exposure. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) has issued Guidelines for Limiting Exposure to Time-Varying Electric and Magnetic Fields (1 Hz -100 kHz) (PDF 641 kb) which are aimed at preventing the established health effects resulting from exposure to ELF EMF. The ICNIRP ELF guidelines are consistent with ARPANSA's and the RHC's understanding of the scientific basis for the protection of people from exposure to ELF EMF. Details about ICNIRP and a link to the ICNIRP ELF guidelines are available from the ARPANSA website at International Best Practice.*

The Committee noted the proposed outline of the Emergency Exposure Code and agreed that it should be a short, high level document with a tight scope.

The Committee discussed the proposed reference levels for Australian radiation emergency planning. Members noted that acceptance from a broader audience and the public will be a challenge, hence the need for a discussion document that defines credible reference levels. It was suggested that the public be consulted early in the process to increase acceptance.

The Committee noted the WHO project to develop International Basic Safety Requirements for Non-Ionising Radiation, including Fundamental Safety Principles, and supported ARPANSA's participation. The Committee agreed to suspend the RHC projects to develop Australian specific NIR Fundamentals and noted that ARPANSA will provide periodic updates on the progress of the WHO project as key milestones are achieved.

The Committee noted the second draft of the Code 'Disposal of Solid Radioactive Waste' and requested comments from members on content, scope and format following which a revised draft would be sent back to the Committee for consideration of its suitability for public consultation. The minutes are available at ***www.arpansa.gov.au/AboutUs/Committees/rhcmt.cfm***. The next meeting of the RHC will be held on 18 November 2015.

*Nuclear **Safety Committee***

The Nuclear Safety Committee (NSC) met on 19 June 2015 at ARPANSA's Miranda Offices, and at ANSTO, Lucas Heights, for a site visit. The main items discussed included the South Australian Nuclear Fuel Cycle Royal Commission, the Regulatory Guide for the assessment of Regulation 54 and the draft IAEA Safety Standard DS 456 – *Leadership and Management for Safety*.

The CEO briefed the Committee on the objectives of the South Australian Government Nuclear Fuel Cycle Royal Commission that was established on 19 March 2015 to undertake an independent and comprehensive investigation into South Australia's participation in four areas of activity that form part of the nuclear fuel cycle. The Committee then discussed the regulation of an expanded nuclear

industry within Australia. The discussion was restricted to regulatory matters but was otherwise open and broad ranging. Topics included in the discussion included:

- The functional structure of the regulatory body
- The jurisdictional scope
- The jurisdiction - state/territory and Commonwealth
- Regulatory capacity and capability

The Committee provided comments on a draft regulatory guide for the assessment of Regulation 54 which had been distributed to stakeholders. Regulation 54 requires the regulatory approval to construct safety items during the construction phase of a nuclear facility. The committee suggested that the format and writing style be reviewed, making the point that whilst this was a technical document, ARPANSA should make it accessible to a wide range of stakeholders.

The Committee was briefed on the progress of an NSC working group that is reviewing and commenting on the draft IAEA Safety Standard DS 456 – *Leadership and Management for Safety* and considering how it can be applied as a Code for use across Australia. This task is being undertaken in cooperation with the RHC. The Committee was advised that with some minor modifications the IAEA document could be adapted for use in Australia. ARPANSA has existing guidance on Plans and Arrangements and Holistic Safety which need to be incorporated into the Code. The IAEA standard moves towards an integrated management system which incorporates safety and security aspects into all activities. The Committee considered that integrated management systems represent best practice and should be reflected in any Australian Code so that the safety (and security) dimension of structures, systems and components and their operation is assessed.

The Committee was briefed on, and discussed, operational aspects of controlled facilities. Six inspections had been undertaken at facilities, each in accordance with ARPANSA's new regulatory delivery model. These inspections had identified a number of performance deficiencies. The committee discussed these in general terms and welcomed ARPANSA's intention to analyse the results from all inspections for common issues and trends. A potential non-compliance relating to a system configuration error in a fire suppression system is being considered by ARPANSA. This was identified by the licence holder and ARPANSA is monitoring measures to prevent any recurrence.

A full summary of the meeting is available at: ***www.arpansa.gov.au/AboutUs/Committees/nscmt.cfm.*** The next meeting of the NSC will be held on 30 October 2015.

Details of Directions Given by the Minister

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

Radioactive Material Import Permits

The importation of radioactive material into Australia requires permission under Regulation 4R of the *Customs (Prohibited Imports) Regulations 1956*. These regulations are made under the *Customs Act 1901.* Under the *Customs (Prohibited Imports) Regulations 1956,* the Minister for Health may authorise ARPANSA officers to approve import permissions.

During this quarter, ARPANSA authorised officers issued 151 non-medical radioisotope permits including: 89 urgent permits, 57 standard permits and 5 twelve-month permits.

During this quarter, ARPANSA authorised officers issued 334 permits for medical radioisotopes including 0 urgent permits, 5 twelve-month permits and 329 single shipment permits for the months of April, May and June.

Appendix 1: Correction of material errors in previous Quarterly Reports

Corrigendum

On page 10 of the Quarterly Report of the Chief Executive Officer of ARPANSA – January to March 2015, under the heading *Breaches with No or Minor Safety Implications*, delete 'at ANSTO's OPAL reactor.' Note: the incident mentioned in the paragraph did not occur at ANSTO's OPAL reactor. The OPAL reactor operated safely, and met all regulatory requirements, during the entire quarter. The error is regrettable and was caused by an administrative oversight in the production of the Quarterly Report.