



## SUMMARY OF MEETING OF 15-16 APRIL 2010

### **OPENING OF MEETING, ATTENDANCE, APOLOGIES**

Council met at Royal North Shore Hospital on 15 April 2010 and at ARPANSA's Miranda Office on 16 April 2010. All members were present.

### **15 APRIL 2010 – Visit to Royal North Shore Hospital**

#### **Presentations**

Council received presentations and briefings from Prof Dale Bailey, Principal Physicist, Department of Nuclear Medicine; A/Prof Graeme Morgan, Staff Specialist, Department of Radiation Oncology; A/Prof Lyn Oliver, Director of Medical Physics and Dr Greg Briggs, Staff Specialist, Department of diagnostic Radiology.

#### **Visit to Departments**

Council then toured the radiotherapy department (both treatment and planning areas), the 3T MRI machine in diagnostic radiology and the PET centre with its new PET/CT scanner. The operations at each location were explained to Council members by staff from the area. The Chair thanked A/Prof Graeme Morgan for arranging the visit, and the staff of RNSH for their role in the presentations and tour.

#### **Introduction of Dr Carl-Magnus Larsson, CEO of ARPANSA**

Council met after the tour to discuss agenda item 5 from the meeting agenda. The Chair asked each member of the Council to give a brief summary of their background to the new CEO. The CEO then provided Council with a summary of his career in radiation protection and regulation in Sweden and discussed his early impressions and insights.

### **16 APRIL 2010 – Meeting at Miranda**

#### **CONFIRMATION OF MINUTES & BUSINESS ARISING**

The minutes of the 5-6 November 2009 meeting were confirmed with one editorial correction. Council noted that actions from the previous meeting had been completed or were on the agenda.

#### **MANAGEMENT AND DISPOSAL OF LONG-LIVED INTERMEDIATE LEVEL WASTE**

The Chair reminded Council that this project had been agreed in 2009, that Council had provided dot points of potential material for inclusion, that the Chair and Secretariat had met in February to work on the draft report, Council members comment had then been sought and the report revised and circulated as a final draft for endorsement at the meeting. Council agreed that following amendments arising from comments discussed at the meeting, the report would be forwarded to the CEO.

#### **ADOPTION OF RECOMMENDATIONS ON CLASSIFICATION OF RADIOACTIVE WASTE**

The Chair advised Council that the Radiation Health Committee (RHC) had forwarded the draft *Recommendations on Classification of Radioactive Waste* for Council's recommendation on adoption and publishing. Council noted that the RHC had agreed on the general content of the document at the November 2009 meeting, but had not finalised the inclusion of a definition of radioactive waste until the March 2010 meeting. Council discussed

whether the document should be published as Recommendations or a Safety Guide. Council felt that a Safety Guide would be more appropriate, but recognised that the final decision was one for the CEO. Council recommended that the CEO adopt and publish the document.

## **MEDICAL RADIATION ISSUES**

### **Information on Radiology and Pregnancy**

The CEO discussed his reply to Council regarding information on radiology and pregnancy. He noted that ARPANSA's Medical Physics Section would be involved in developing the InsideRadiology website with RANZCR, and that there was review by a general practitioner as part of the process. Council members noted that it was important that this type of information is spread wider than just the radiology profession, and that the issue of information for referrers and the public was broader than just pregnancy. The CEO advised that ARPANSA would be pleased to take the lead on this issue after a wider consideration and come back to Council at a later meeting.

### **Issues arising from Justification in Radiology**

Mr Anthony Wallace, Manager, Medical Physics Section ARPANSA, gave a presentation on justification and radiology referral. He noted that there were a number of issues leading to inappropriate referrals and high utilisation of CT scanning, including a lack of referral guidelines, limitations on referrals for other modalities, i.e. general practitioners are not allowed to refer to MRI, and limited knowledge among referrers of the radiation doses for different procedures. Mr Wallace also advised Council of the findings of the International Workshop on justification of medical exposure in diagnostic imaging held in Brussels, in September 2009. The Workshop highlighted deficiencies in knowledge of risk and dose among health professionals, and the importance of integrating clinical audit in the life of the department. Mr Wallace advised that some guidelines on referral have been published, and that some, e.g. the UK Royal College of Radiologists were available on the web. Council was informed of the WHO Global Initiative on Radiation Safety in Health Care Settings, which included work on referral guidelines and would include RANZCR members on the panel. The CEO informed Council that he would work on a strategy to address this issue for a future Council meeting.

### **Optimisation and DRLs in Radiology**

Mr Wallace advised Council of work being undertaken by ARPANSA to survey CT doses for the purpose of improving optimisation of exposures. He noted that data would be collected from practices via a web based system. The survey was to be undertaken in collaboration with the RANZCR, and there will be a national liaison panel. It is anticipated that the reports generated from this database would enable radiology centres to meet the requirements of the code of Practice in relation to DRLs. Council noted the report from Mr Wallace and requested to be informed of the outcomes of the survey in due course.

### **Update on Dosimetry Centre for Radiotherapy**

Dr John Baldas, Director, Medical Radiation Branch, ARPANSA, informed Council that in relation to the proposed Australian Clinical Dosimetry Centre, some time ago the Department of Health and Ageing had commissioned a report from Allen Consulting. As a result of this report, proposals to run the centre had been invited. These had been reviewed by DOHA and an announcement was yet to be made. ARPANSA had been one of the applicants to run the centre, with its application being supported by a new Medical Linac, the installation of a new Co-60 source, and as the laboratory holding the Australian Absorbed Dose Standard. Council noted the report and asked to be kept informed of developments.

## **USE OF AUSTRALIAN RADIATION INCIDENT REGISTER DATA TO INFLUENCE SAFETY CULTURE**

Council was advised of the work undertaken by ARPANSA to develop and maintain the Australian Radiation Incident Register (ARIR), including the various reports provided to the Radiation Health Committee. Council noted the communication strategy to provide information on the web site, at conferences, via targeted leaflets, and in response to requests, so that regulators and radiation users can benefit from the information and potentially reduce the occurrence of radiation incidents. A recently established liaison with the Australian Patient Safety Foundation, and through them the Radiology Events Register (RaER), would also ensure dissemination of medical radiation incident information within the professions. Council discussed other ways the ARIR data could influence safety culture of radiation users. The likelihood of under-reporting to the ARIR was discussed, including approaches to identifying the level of under-reporting. Council noted that incidents in medicine were prevalent in the data, and discussed how this could be addressed. Council will discuss this issue further.

## **PROTECTION OF THE ENVIRONMENT FROM RADIATION**

### **International Approaches**

Dr Che Doering, Environmental & Radiation Health Branch, ARPANSA gave a presentation on international developments in protection of the environment from radiation. He indicated that the original approach of ICRP was based on the assumption that if humans were adequately protected, then animal and plant species were also believed to be sufficiently protected. It is now recognised that there is a need for a more direct approach. ICRP, in its 2007 recommendations, included advice on a direct and systematic approach for protection of the environment, which paralleled that used for human radiation protection, and included the use of reference animals and plants (RAPs). Dr Doering described the use of Derived Consideration Reference Levels (DCRLs) within the framework. Dr Doering also discussed and compared current international approaches and assessment tools. The CEO also gave a short presentation describing the ICRP 108 approach, including the selection of RAPs from identified wildlife groups, the use of simple ellipsoid models, the difficulty presented by limited information on transfer factors, a comparison of the approach for environmental radiation protection to that for human radiation protection, and the further work being conducted by ICRP Committee 5. Council discussed the concentration of heavy metals, the international timeframe for environmental protection work, and how to account for other issues associated with uranium mining, e.g. the acidic environment, which may be more important than radioactivity in regard to environmental protection.

### **Australian Activities**

Dr Doering informed Council of the activities being undertaken in Australia on protection of the environment. He noted that the *Environment Protection & Biodiversity Conservation Act* defines uranium mining as a 'nuclear action', which triggers a requirement for environmental impact assessment. There is no specific national guidance on assessment or protection of non-human biota, however the need is foreshadowed in both the *National Directory for Radiation Protection* and the *Mining Code*. ARPANSA is currently reviewing existing models and methodologies for assessing radiation exposures of non-human biota, and reviewing the applicability of these methodologies to the Australian uranium mining context to inform discussion which may lead to the development of national guidance.

There is a need for Australian specific data on radionuclide transfer to biota for a range of environmental conditions. ARPANSA is also planning with ANSTO to undertake a field exercise at Maralinga to collect biota and soil samples in order to determine concentration

ratios for natural and anthropogenic radionuclides for Australian terrestrial wildlife living in a semi-arid environment. The Supervising Scientist Division (SSD) has activity concentration data in wet-dry tropics, and ARPANSA plans to work with SSD to put this data into a manageable framework. Council thanked Dr Doering for the presentations and requested to be kept informed of important developments.

### **REPORT ON ARPANSA ACTIVITIES**

The CEO informed Council of recent ARPANSA activities on airport security scanners, the CT survey work being undertaken and stakeholder interaction on radioactive waste matters. It was planned to arrange a follow up IAEA Integrated Regulatory Review Service (IRRS) mission to Australia in the second half of 2011. This would review progress in implementing the recommendations and suggestions of the previous mission. The national report to the Convention on Nuclear Safety was in preparation for the review meeting due next year. ARPANSA was proposing to hold a workshop in May to seek stakeholder input on the revision of the IAEA Basic Safety Standards (BSS) to assist in preparing a coordinated Australian position for Member State comment.

### **REPORT ON INTERNATIONAL ACTIVITIES**

Prof Johnston tabled a report informing Council of the outcomes of the meeting of the IAEA Commission on Safety Standards, held 17-19 March 2010. He highlighted the withdrawal from the agenda of *DS354 Disposal of Radioactive Waste* as a result of objections from Russia, discussion on the interface between safety and security, approval of a range of documents, discussion on radioactive material in scrap metal, and a report from ICRP, which focussed on radon and included discussion on radon and smoking. A number of other papers on the issue of radon and smoking were distributed for Council's information. Council agreed that it should maintain a watching brief on this topic. Prof Johnston also tabled a report on the recent NORM VI conference in Marrakech.

Ms Evans reported on a conference she had attended in South Africa on nuclear safety and security.

The CEO reported on the upcoming meeting of UNSCEAR. The current Annexes in preparation include:

- *Attributability of health effects to radiation exposure*
- *Summary of radiation effects*
- *Assessment of levels of radiation from electrical energy production*
- *Uncertainty in radiation risk estimation*
- *Methodology for estimating exposures due to discharges*
- *Improving data collection, analysis and dissemination*

### **COMMITTEE REPORTS**

#### **Report from the Radiation Health Committee (RHC)**

Council was informed that RHC met on 24-25 March 2010 and was provided with the Secretariat's notes of the meeting's outcomes. A discussion on Best Practice Regulation had been deferred until the July meeting, a regulatory impact statement on lasers and IPLs was being developed and it was important that this work progressed soon. There had been discussion on the ELF Standard, agreement on the Classification of Radioactive Waste, the adoption of an amendment to the National Directory for Radiation Protection, and a paper on public medical radiation exposure.

### **Report from the Nuclear Safety Committee (NSC)**

Council noted that the Nuclear Safety Committee had not met since the last Council meeting, but was scheduled to meet on 7 May 2010. The agenda would include Australia's National Report to the Convention on Nuclear Safety, Ageing management of research reactors, and planning for the Committee's future program.

### **OTHER BUSINESS**

Council noted the BMJ article on Radiation Exposure and Circulatory Disease Risk, which was published in BMJ Online (BMJ 2010; 340:b5349 doi:10.1136/bmj.b5349).

### **CLOSURE AND MEETING DATES FOR 2010**

Council was informed of the dates agreed for 2010, with the next meeting being scheduled for 5-6 August 2010.