



SUMMARY OF MEETING OF 13 APRIL 2005

OPENING OF MEETING, ATTENDANCE, APOLOGIES & CONFIRMATION OF MINUTES

Council met at the Duxton Hotel, Melbourne on 13 April 2005. All members were present except for Prof de Klerk. Ms Kidziak opened the meeting and in particular welcomed Dr Abel Gonzalez, former Director of Radiation Safety, International Atomic Energy Agency (IAEA), who had agreed to address Council, and congratulated Em Prof Ian Lowe on his appointment as President of the Australian Conservation Foundation. The minutes were confirmed without amendment.

BUSINESS ARISING FROM THE MINUTES

Council members were provided with a copy of the newly published IAEA Guidance on the Import and Export of Radioactive Sources for information.

NORM DISCUSSION PAPER

Council noted that presentations at the ARPANSA-run Conference on Radiation Protection in Mining and Mineral Processing had summarised the submissions on the NORM Discussion Paper. Submissions showed considerable support for national guidance on exclusion, exemption and clearance, although there was some concern that there will be more regulation. There was also considerable support for national guidance on strategies and criteria for treatment and disposal, but some views that it would be premature without additional data and analysis of environmental risks. There was support for guidance on remedial action at contaminated sites, but some industries were not aware of any situations requiring remedial actions, and there was some concern that guidance would be premature without better data and risk analysis. There was support for a national awareness raising strategy, but in consultation with industry and the States and Territories. Council agreed that the conference had been successful and had brought out some additional issues. Council agreed that it would finalise its advice on NORM to the CEO at its August meeting. In order for that to happen, a paper would be circulated to members for comment in 6 weeks, Dr Cooper would be asked to update his paper, and the Council's discussion paper would also be revised to include updated information received through the consultation process.

EMERGING ISSUES IN MEDICAL RADIATION PROTECTION

Radiology Presentation from Prof Brian Tress

Professor Brian Tress, Professor of Radiology, University of Melbourne addressed Council, giving a clinical radiologist's perspective on issues likely to arise in the medical use of radiation over the next 5-10 years. Prof Tress described a number of drivers for developments in radiology including technological improvements and increased efficacy of diagnosis and treatment. A particular case is advances in CT technology and the importance of dose reduction protocols in paediatric CT. Radiology is now used by a range of other specialists, including cardiologists, vascular surgeons, urologists, gastroenterologists, neurosurgeons and neurologists, and orthopaedic surgeons. The shortage of radiologists and the need for radiology tools within these specialties means that there is a need for uniform radiation safety training. In interventional radiology there are documented cases of full thickness burns and radiation depilation, indicating a need for quality technical training (on use of the equipment), radiation safety training, and professional supervision by a radiographer. Recent

developments in mobile CT could see this technology become useful in ambulance, emergency, operating theatre, intensive care unit or office. He also discussed whole body CT, frivolous uses of radiation, inadvertent exposure of staff, accidental irradiation of the foetus in cases where pregnancy was not known, radiography of the wrong patient, and medico-legal radiography. Professor Tress concluded with a number of recommendations for Council consideration.

Nuclear Medicine Presentation from Prof Andrew Scott

Professor Andrew Scott, Director, Centre for PET, Dept of Nuclear Medicine, Austin Health & Director Tumour Targeting Program, Ludwig Institute for Cancer Research, addressed Council on future issues in nuclear medicine. Nuclear medicine can assess function as well as structure, and its principle areas are in cardiac disease, cancer, neurology, therapy, and positron emission tomography (PET). Professor Scott informed Council that over 500,000 studies were undertaken in Australia per year and the rate was increasing by about 10% per year. Areas of developing technologies included PET, combined modality imaging (eg PET/CT & SPECT/CT), molecular imaging and radionuclide therapy. Projections are that PET will have increasing use in dementia, therapy monitoring and new ligands, and that the number of PET centres will increase markedly over the next 10 years. In relation to radioimmunotherapy, Bexxar and Zevalin have now been approved by the US FDA, however there are issues concerning dosimetry and outpatient administration. Prof Scott concluded that there was a continued role for nuclear medicine in assessing cardiac viability and organ physiology. There was an increasing role of nuclear medicine in molecular imaging and therapy. Radiation issues included the impact of PET on clinical practice and research, combined modality imaging, and delivery of outpatient radionuclide therapy.

Medical Physics Presentation from Dr John Heggie

Dr John Heggie, Director of Medical Engineering & Physics, St Vincent's Hospital addressed Council on possible future issues in medical imaging. Dr Heggie noted that the increases in computational speed and miniaturisation had implications for multi-slice CT and mobile CT, CT screening, interventional radiology and PET/CT and SPECT/CT. Collective dose from CT was significantly increasing, so that the use of optimised protocols and the establishment of diagnostic reference levels (DRLs) for CT was increasingly important. Dr Heggie gave examples of dose reductions of the order of 30% from optimisation. CT screening is not supported by overseas professional organisations and the Australasian College of Physical Scientists and Engineers in Medicine (ACPSEM). Interventional radiology raises the possibility of deterministic effects for more challenging procedures. The use of interventional techniques outside of radiology and cardiology led to training and this needs to be addressed as part of professional qualification as soon as possible. PET/CT and SPECT/CT necessarily lead to higher doses and bring up the regulatory and professional issues of who operates them and who interprets the images?

South Australian paper on medical radiation protection

Council discussed the paper from staff of the SA EPA Radiation Protection Division on medical radiation protection issues. The paper gave a regulator's perspective on the issues. In regard to digital radiography, the wider exposure latitude, post processing and digital enhancement, automatic exposure control variation, fast processing, ease of deleting images, and lack of appropriate training were identified as issues. In CT scanning emerging issues include the potential for higher doses from increased usage, particularly for multi-slice CT, beam width, Exposure factors/technique selection, appropriate shielding, appropriate Standards, and lack of accredited training for all users and intended users. Fluoroscopy by

non-radiologists has also led to concern about training. It was stressed that regulators must be conversant with the imaging technologies and be proactive to ensure that radiation protection safeguards are relevant to the expansion and use of those new technologies. Council commented on the need for a survey of doses from multi-slice CT, noting that an earlier ARPANSA survey had looked at single slice CT.

Discussion with presenters

The main issue arising in discussion with presenters was that the rapid advance of technology has overtaken training of both radiographers and radiologists, and with the expansion of radiology into other specialties, there is a need for training of particular groups of medical specialists, with involvement of the Colleges. The referring community also need to be aware of the relevant tests for different conditions, as this has changed significantly in the last 15 years. Resolving the outpatient nuclear medicine therapy issue required a formal approach to the RHC. Council noted that the increase in use of radiation technologies needs to be related to improved patient outcomes.

Preparation of Council advice on Medical Radiation Issues

Council discussed how it would proceed to produce advice to the CEO. In summary, a final paper would be prepared by the end of the year. At the August meeting, Council would receive advice on likely radiation oncology issues over the next 5-10 years. Council members also commented that training was an urgent issue, and will seek advice on training issues at its next meeting. A draft paper will be prepared within the next month, based on the presentations and discussion at this meeting. The paper will be developed further at the August meeting, and a draft for final comment will be presented to the November meeting.

RADIOACTIVE WASTE ISSUES

Council noted progress on the development of the “Road Map” for radioactive waste management, and noted that public acceptance should also be considered. Council discussed the two submissions received concerning an indicator of sustainable development for radioactive waste, and agreed that there was nothing further to be done at present. Council may consider the matter again at some point in the future. The CEO agreed to this approach.

REPORT FROM THE CEO

The CEO raised the following issues for Council information:

- OPAL Reactor – Closing of public submissions had been put back to the end of August.
- ANAO Report – Following release of the report, ARPANSA had set up a review headed by Mr Peter Brandt that will make proposals over the next 12 months. A consultative committee chaired by Ms Sylvia Kidziak AM has also been established.
- Safety & Security/Emergency Response – various activities, both nationally and internationally are progressing. Response capacity is also being built up.

COMMITTEE REPORTS

Summary reports of the Radiation Health Committee meeting of 9-10 March 2005 and the Nuclear Safety Committee meeting of 25 February 2005 were tabled and noted.

OTHER BUSINESS

Dr Abel Gonzalez, former Director of Radiation Safety at the IAEA addressed Council on some of the recent happenings in international radiation protection. He informed Council that after much debate, there had been agreement at the IAEA General Conference last September on exclusion and exemption levels for non-edible commodities, food (except for the final approval of the Codex Alimentarius Commission) and water. Within the last few months there had been moves in Europe to challenge this agreement on the 1Bq/g level for natural materials. This move was based on low probability scenarios that could lead to several mSv doses. ICRP's proposed use of 1 Bq/g was also now under debate on the basis of European comment.

On import/export controls, Dr Gonzalez advised that the newly published guidance arose from actions on security of sources. The Code of Conduct on security of sources is now published and about 80 countries have given a commitment to the Director General of IAEA that they will follow the Code. Dr Gonzalez felt that it was important that Australia continue to play a leading role on these issues.

Dr Gonzalez also informed Council that Action Plans had been developed by IAEA on Occupational Protection (with ILO), Transport, Safety & Security, Safety of Waste, including NORM, Decommissioning, and Protection of Patients. An action plan on the environment had not been approved, due to opposition from some member States. This will be reconsidered when there is further information available from UNSCEAR and ICRP Committee 5, perhaps by September or October this year.

Council thanked Dr Gonzalez for making himself available to attend the meeting and inform Council of his views on international developments.

CLOSURE AND NEXT MEETING

The next meeting was scheduled for 5 August at Miranda.