



SUMMARY OF MEETING OF 6 AUGUST 2004

OPENING OF MEETING, ATTENDANCE, APOLOGIES & CONFIRMATION OF MINUTES

Council met at ARPANSA's Yallambie office on 6 August 2004. All members were present except for Professor de Klerk. Mr Andrew Johnston, Senior Scientist, Radiation Protection Division, SA EPA was welcomed to his first meeting as a member. The minutes were confirmed without amendment.

BUSINESS ARISING FROM THE MINUTES

Dr Arthur Johnston advised the Council of an incident at the ERA Ranger uranium mine, wherein there had been contamination of the drinking water supply at the mine site and leakage of the contaminated water off site. A report to the Minister for Environment and Heritage was being prepared. Dr Johnston would keep Council informed.

Indicator of Sustainable Development – Radioactive Waste

Council noted that the CEO had arranged for its advice on the IAEA's indicator of sustainable development for radioactive waste to be circulated to a range of organisations for comment.

NORM DISCUSSION PAPER

Naturally Occurring Radioactive Material (NORM) In Australia: Issues For Discussion - Advice to the CEO

The CEO advised Council that he intends to release the NORM discussion paper for 3 months comment. The CEO was also proposing to hold a conference on radiation protection in mining and mineral processing early in 2005. The conference would discuss further development of the National Directory for Radiation Protection in relation to a protocol for consideration of exemptions, reporting requirements for mining and mineral processing incidents, finalisation of the Code of Practice for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing, and Council's NORM discussion paper.

THE NEW DRAFT ICRP RECOMMENDATIONS

The CEO informed Council that the ICRP was intending to finalise its new recommendations in 2005. The CEO also summarised a presentation given at the 2nd OECD/NEA Asian Regional Conference on 28-29 July 2004 in Tokyo, highlighting the changes to the ICRP recommendations. Justification was now treated in a broader context, with radiation protection seen as only one input. Justification of patient exposure was considered separately. The CEO requested that Council discuss the ICRP approach to justification. Justification, while still considered in the ICRP recommendations, was indicated as a matter for governments and other authorities, although medical justification was treated separately. Council members commented that the question of maximum dose constraints versus limits needed more clarification. It was noted that the changes to tissue weighting factors would have an impact in medicine in regard to dose computation programs and models. Council will consider the ICRP proposals again at its November meeting.

AUSTRALIAN CENTRE FOR RADIOFREQUENCY BIOEFFECTS RESEARCH

Associate Professor Vitas Anderson, Centre Director for the Australian Centre for Radiofrequency Bioeffects Research, made a presentation to Council outlining the role and operation of the Centre. The Centre consists of 5 collaborating institutions, RMIT University (biophysics and neurophysiology), Swinburne University (biophysics and neurophysiology), Monash University (epidemiology), the Institute of Medical and Veterinary Research (animal handling, tissue analysis) and Telstra Research Laboratories (RF dosimetry). The key objectives were to increase knowledge in RF safety through its scientific research program, develop Australian research capacity, encourage collaboration between all Australian bioeffects researchers, promote and communicate research outcomes within the general scientific community, regulators and policy makers and the general public. The research program covers molecular modelling, in vitro studies, in vivo studies on rodents, human studies, epidemiology and RF dosimetry. Outputs from the Centre would include conference and journals papers, scientific workshops, technical reports, input to standards and regulatory policy, training, public information statements, web site, and undergraduate prizes for RF bioeffects projects. A/Prof Anderson also suggested that there may be opportunities for the centre and ARPANSA to issue joint statements about RF issues that attract public interest.

DEVELOPMENT OF THE ARPANSA ELF STANDARD

Associate Professor Andrew Wood, Swinburne University School of Biophysics and Electrical Engineering, gave Council a presentation on progress with development of the ELF standard. A/Prof Wood is Chair of the RHC working group developing the standard. A consultative group had also been formed to review drafts and provide advice to the working group on specific issues. The working group had examined Standards and guidelines and major reviews from ICNIRP, IEEE, NRPB, Health Council of the Netherlands, NIEHS, IARC and the California EMF program. A range of other information on precaution, security devices hypersensitivity, bone growth, perception of fields, and the UK Weak Field Symposium was also examined. The basic restrictions of IEEE and ICNIRP had been carefully examined. An expert Panel had been established to advise on electrophysiology, including whether magnetophosphenes were an appropriate basis on which to set the basic restriction. The Panel also discussed susceptibility of dividing cells, the area or volume of averaging, comparison with endogenous sources, and the appropriate cell architecture to determine membrane effects. A report from the panel meeting was to be prepared. The working group was yet to decide on the basic restriction. The consultative group had also raised a number of issues for the working group to consider, including whether the standard should have separate occupational and public limits, whether uncontrolled and controlled areas was a more appropriate scheme than occupational and public exposure, defining an ELF worker, pregnancy, and adding to information on high field situations. Council discussed the interface with the RF standard, the practical implications of choosing the most conservative approach, exposures from electric blankets and static fields, and requested to be kept informed of progress.

REVIEW OF COUNCIL'S ADVICE ON RADIOACTIVE WASTE

The CEO provided an update on progress in dealing with Council's recommendations on radioactive waste. Progress included completion of the NORM discussion paper, and ratification of the Joint Convention and Australia's attendance at the first review meeting. The RHC/NSC report, indicating that there was sufficient international material on pre-disposal management of spent fuel and that separate Australian guidance was not required, had been completed and was tabled for Council information. Overseas and international developments are being monitored, and the CEO would keep Council informed. A Pre-disposal Code was being developed and the User Disposal Code was being reviewed. Definitions and classifications of waste were being developed by an

RHC working group. The Transport Competent Authorities Working Group had been re-formed and would consider these issues. Some recommendations apply to other organisations, however spent fuel relates to the RRR, and waste acceptance criteria and conditioning still need consideration post-NRWR.

MEDICAL RADIATION EXPOSURE ISSUES

MJA Editorial – Medical Radiation and the Risk of Cancer

Council was informed that Dr Dickie had written an editorial for MJA, responding to the Lancet article (de Gonzalez and Darby). The editorial had discussed the estimates of cancer risk, the linear-no threshold hypothesis, and issues in applying a model of radiation-induced cancer cumulative risk to the doses received by the various organs. When this approach is expanded to cover the whole population, the confidence limits are also magnified, so there is considerable uncertainty with the estimate.

The ARPANSA Radiology Survey

Dr Peter Thomas, Medical Radiations Branch, ARPANSA, made a presentation to Council on ARPANSA's Radiology Survey. The survey will establish the collective effective dose to the Australian population from general diagnostic radiography, and the per caput dose. Dose distribution from particular procedures, which may be useful in establishing DRLs, will be estimated, along with indications of dose differences between practice types. While CT is not included in this survey, Dr Thomas noted that in 1999 CT examinations made up half of the current medical exposure of the population, and that per caput CT doses have doubled over the last decade. Data analysis would take place from Oct 2004 to Dec 2004, and the final report prepared by March 2005. Dr Thomas also discussed some preliminary results of the survey and difficulties that had been encountered.

Paediatric CT

Council was advised of a further article on paediatric CT, which discussed means of reduction of cancer risk associated with paediatric CT. Additional articles on paediatric were also tabled. The CEO informed Council that the proposed letter to Heads of Health administrations was in preparation.

REPORT FROM THE CEO

The CEO reported to Council on recent ARPANSA activities.

- *Replacement Reactor*, where approvals for construction items was nearing completion, cold neutron source manufacture had been approved, the operating licence was expected in September - the focus would be on operational limits and conditions and organisational arrangements, and cold commissioning will need to confirm designed performance of reactor systems prior to the issuing of a licence.
- *HIFAR*, where resource management as HIFAR nears the end of its operating life and the RRR commissioning commences, is a major issue for ANSTO. ARPANSA is taking a close interest. Dr Ian Smith has commenced as the new Executive Director of ANSTO and has held discussions with the CEO. The CEO advised that decommissioning issue is receiving ANSTO management attention.
- An ELF pilot survey, general radiology survey, and source security working group were also under way.
- The application for the National Radioactive Waste Repository had been withdrawn.

The CEO also discussed a letter from a member of the public from WA, concerning an Optus tower, which had been copied to some Council members. An ARPANSA protocol for calculation of levels near antennas is taken up in the ACIF Code, and specifies computation of field levels at set distances and points of interest. The reply to the letter will clarify the protocol, provide the outcome of calculations which show that the levels are acceptable, and suggest that now that the tower is constructed, the levels could be confirmed by measurement.

COMMITTEE REPORTS

Report from Radiation Health Committee

Council was informed of the discussions at the RHC meeting held on 21-22 July 2004. These had included the new ICRP recommendations, reports on development of several codes of practice, cosmic radiation, intense pulsed light sources, the Australian Radiation Incidents Register, and information papers on a range of issues.

Issues arising from the Development of the National Directory for Radiation Protection

The CEO advised Council that Ministers had endorsed the National Directory at the AHMC meeting on 29 July. The tabled paper indicated areas where further development was required. In particular, a national conference on radiation protection in mining and mineral processing was proposed to discuss issues such as exemption protocols, incident reporting, the draft Code of Practice on mining, and Council's NORM paper. Council noted that RHC had also discussed approaches to cost-benefit analysis for the Directory and other Codes.

Report from Nuclear Safety Committee

The summary of the June NSC meeting was tabled. The CEO informed Council that the main issue discussed had been the decommissioning of HIFAR. ANSTO's favoured approach appeared to be to remove the fuel and wait for 30 years before undertaking the decommissioning. This raised the issue of maintaining relevant information over that timeframe, when current workers with expertise on HIFAR would no longer be available. NSC was debating its role and ARPANSA's in ensuring that adequate information storage systems and staff training were in place.

OTHER BUSINESS

Council noted that a response from the Cardiac Society was expected soon. The Chair advised that she had spoken to the new CEO of ANSTO, Dr Ian Smith, and he would be available to meet with Council on 25 November 2004. Council agreed to the draft Annual Report with one editorial change. The CEO informed Council of the release of a report from the UK Radiation, Risk and Society Advisory Group, *In terms of Risk* (NRPB vol 15, no 4, 2004). Council agreed that this was a useful paper that would assist it in future discussion on risk communication. Council was informed that a regulator had been approached on the issue of Tasers, or 'stun-guns', as used by police. Further information would be obtained for next meeting.

CLOSURE AND NEXT MEETING

The next meeting was scheduled for 26 November 2004 at ARPANSA's Miranda office. This meeting will be preceded by a visit to the ANSTO Site on 25 November 2004.