

RADIATION HEALTH & SAFETY ADVISORY COUNCIL

Minutes of the meeting held on 14 April 2000

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1. OPENING OF MEETING AND ATTENDANCE

Dr McLean opened the meeting at 9:35 am. The following members attended:

Members: Dr Rick McLean (Chair)

Dr John Loy

Mrs Jill Fitch

Mr Peter Raue

Dr Richard Smart

Dr Garry Smith

Ms Sylvia Kidziak

Dr Lorraine Robb

Dr Nick de Klerk

Secretariat: Mr Alan Melbourne

Dr Silvano Colmanet

Observer: Mr Daniel Westall

By Invitation: Mr Jeff Harris (DISR) - attended for items 5.1, 5.2 & 5.3

Mr Peter Burns (ARPANSA) - attended for items 5.3 & 7.5

Dr Malcolm Cooper (ARPANSA) - attended for item 6

Dr Colin Roy (ARPANSA) - attended for item 7.6

2. APOLOGIES

Dr Graeme Dickie

Dr Garry Smith left the meeting and was absent for items 5.4, 6, 7.1-7.5, 7.7

Dr Rick McLean left the meeting and was absent for items 6, 7.3-7.5, 7.7 (Mrs Fitch Chaired the meeting for those items).

3. CONFIRMATION OF MINUTES - MEETING OF 10 DECEMBER 1999

The draft minutes were confirmed without amendment.

Proposed: Dr Smart

Seconded: Ms Kidziak

It was noted that the web summary of the meeting of 10 December had been approved out of session and had now been placed on the ARPANSA Web site.

4. BUSINESS ARISING FROM THE MINUTES

The Action List from the last meeting was reviewed for items not on the current agenda.

The Secretary reported that the Secretariat actions from the last meeting had been completed.

The CEO advised that a draft document providing guidance on networking for the local government representative on the Nuclear Safety Committee (NSC) had been provided to Dr Smith for comment. When finalised it would be used to inform local government of the role of NSC, and included future direct consultation with relevant local government areas. Dr Smith will liaise with the CEO to complete the document.

The CEO also reported that in relation to the Kaldor report, there had been correspondence between the Minister for Health & Aged Care and the Minister Assisting the Defence Minister. The role of ARPANSA and the Council as 'honest broker' for veterans concerned about the impact of radiation on health had been accepted. The Defence Department will propagate that advice, and people could then be expected to approach ARPANSA with their concerns. Advice on exposure pathways and dose estimates for specific circumstances could be required.

The Chair requested that the next agenda include feedback to Council on the number and thrust of enquiries received.

Council also requested that it be kept informed of progress of the Senate Inquiry on Electromagnetic Radiation.

4.1 Advice on web publishing of Council minutes/documents

Council discussed the legal memorandum from ARPANSA's Corporate Counsel. It was noted that, while publishing on the Web makes documents more accessible, it does place Council and its members at risk. While it is not possible to stop a person taking an action if they feel aggrieved or feel they have been defamed, Council and its members are covered by insurance if they have acted reasonably and responsibly in the interests of the Commonwealth.

Council also noted that minutes were subject to the FOI Act. The Chair stated that Council's intention was to be as open as possible in its deliberations, but felt that most people would get sufficient information from an edited summary of the minutes. After discussion it was agreed that an edited summary of minutes would be prepared for the Web site. This summary would be agreed out of session after circulation to all members and placed on the Web site as soon as possible after agreement. Full minutes would be available on request, either electronically or in paper form, but only after the final version was confirmed at the following meeting. Council also requested that advice on access statistics for the Web site be provided.

Council agreed that it was important that the Council, Radiation Health Committee and Nuclear Safety Committee had a common approach to the issue of Web publishing.

The issue of timing of Committee meetings to enable a summary to be prepared for the following Council meeting was also discussed.

4.2 MOU with Standards Australia

The CEO reported that a meeting had been held with Standards Australia to commence development of an agreement that would help define territory between ARPANSA and Standards Australia, and would establish means of cooperation and collaboration between both organisations. A further meeting would be held in May, after which the draft agreement would be developed. The CEO was hopeful that an agreement could be reached before the end of the year. Council discussed options for cooperation including observers on ARPANSA Committees and Standards Australia bodies, and circulation of agendas. It was noted that the issue of observers should be discussed thoroughly by the Committees before agreement.

The CEO advised that there was a similar issue with the National Occupational Health & Safety Commission (NOHSC), and that NOHSC had written to ARPANSA suggesting a MOU between

the organisations. It was agreed that a progress report on arrangements with NOHSC be prepared for next meeting.

5. RADIOACTIVE WASTE ISSUES

5.1 Briefing on National Radioactive Waste Repository

Mr Jeff Harris, General Manager, Minerals Access and Rehabilitation, Department of Industry, Science and Resources, addressed the Council on the proposed National Radioactive Waste Repository and the store for long-lived waste. His presentation covered the following points:

- Australia currently has 3500 cubic metres of low level and short-lived intermediate level waste accumulated over 40 years and stored at 50 sites around the country;
- Further wastes are accumulating at the rate of about six cubic metres per year;
- The process for the creation of a National Repository began in 1992 (Phase 1) with development of a siting methodology, a public discussion paper, and a report on public comment;
- Phase 2 (1993-1995) included application of the siting methodology. A public discussion paper identified eight regions throughout Australia for further study. There was a subsequent report on public comment;
- The primary siting criteria included low rainfall, no flooding, good drainage, geological and hydrogeology considerations, low population density, groundwater unsuitable for drinking, and properties that inhibit radionuclide migration;
- Other factors considered included no known natural resources, reasonable access for transport, no ecological significance, no cultural significance, not within reserves for regional services and no ownership rights that would compromise long-term control;
- The Central-North Region of South Australia offered the largest area of potentially suitable sites. It is a raised gibber plain, stony ground with little water and good drainage. It is hoped that five sites of 1.5 km x 1.5 km will have been identified within this region within the next few weeks;
- Stage 3 will identify three sites from the five identified in Stage 2, one preferred site and two alternatives;
- The projected timeframe is to identify a site (Stage 3) later this year. An EIS process lasting 12-18 months would follow. Operation would take place after that;
- The store for longer-lived waste has different site selection criteria. There are about 500 cubic metres of this waste. Some are currently stored at Woomera, some at ANSTO and other Commonwealth agencies and some by States/Territories;
- The timetable for the process to establish a store was currently being considered by the Minister (Senator Minchin) and would be made public when agreed.

5.2 Report on Radioactive Waste Management Conference

The CEO reported on an international conference he had attended in Cordoba, Spain on radioactive waste management. The conference had focussed largely on high-level waste issues, and had included discussion on consultation issues, the need for repositories, the capacity to retrieve sources from repositories in future, and the concept of international repositories. Low-level waste management, mining waste and contaminated sites were also discussed. The conference noted the importance of having a disposal system for disused sources. IAEA is developing a Code of Conduct on good practice with sources. Disposal options range from returning sources to the supplier, to the use of boreholes in undeveloped countries.

The conference also included a visit to the Spanish waste repository at El Cabril. This repository was a sophisticated facility handling waste from Spain's nuclear power industry as well as from smaller users. Conditioning for smaller users is done on site, but nuclear power plants condition their waste at their own facilities. The facility is expected to handle Spain's nuclear waste for about the next twenty-five years.

5.3 Briefing on Maralinga

Mr Peter Burns, Director of ARPANSA's Environmental and Radiation Health Branch, provided Council with a historical overview and status report on the Maralinga Rehabilitation Project.

Between 1953 and 1963 the UK had conducted several programs of nuclear warhead development trials at Maralinga. From the seven major trials the main contamination was from short-lived fission products and little plutonium was distributed. However, for the 12 Vixen B trials at Taranaki, 22 kg of plutonium had been explosively detonated with the subsequent dispersion of plutonium-contaminated debris up to many kilometres downwind.

A clean-up by the UK (Operation Brumby) had taken place in 1967. There had subsequently been a Royal Commission in 1985, which recommended that a Technical Advisory Group (TAG) be established. In 1986 the TAG developed clearance criteria, engineering options and costs. Their studies included anthropology, radioecology, bioavailability, inhalation hazard assessment, radiochemical and chemical analysis, and dosimetric modelling studies. The aim was to clean up the residual contamination to the extent that the land could be returned to the indigenous population for a semi-traditional lifestyle.

Aerial surveys had been conducted and had identified several 'plumes' of contamination at the Taranaki site. The central area had been ploughed during Operation Brumby, mixing the surface contamination to depths of 15-25 cm. There were also 21 pits containing a range of contaminated debris.

The options considered by the TAG included:

- Fence entire area, surveillance in perpetuity (cost \$13M);
- Replace intrusion resistant fencing, warning fence around plumes, treat burial pits: exhume and bury or in-situ stabilise (cost \$60M-70M);
- Fence plumes, remove soil from heavily contaminated areas, treat burial pits: exhume and bury or in-situ stabilise (cost \$80M-\$120M);
- Eliminate fencing and surveillance, dilute surface contamination by mixing or collect and bury contaminated soil, treat burial pits: exhume and bury or in-situ stabilise (cost \$135M-\$650M).

The third option above had been adopted. Areas in which the residual contamination resulted in activities of greater than 3 Bq/m² of Am-241 (a marker for plutonium) were to be fenced. The clean-up work was done in sealed air-conditioned vehicles. ARPANSA had also developed vehicles with built-in monitoring equipment and GPS systems, which had greatly improved the monitoring process. ARPANSA's role in the clean up was to ensure that the contamination had been removed to the levels specified.

A formal ceremony was held at Maralinga on 1 March 2000, at which Senator Minchin received a certificate to declare the majority of the areas clean.

The work remaining is:

- A final clearance on monitoring;
- A few more weeks work to monitor some remaining roads.

It was reported that work clearing some small areas of contamination from a former health physics staging area, and the radiobiological experimentation area had just been completed.

5.4 Possible Council action on waste issues

Council noted that Dr McLean, Mrs Fitch, Mr Raue, and Mr Melbourne had recently visited the Maralinga site to receive a direct briefing on the current situation.

Council was advised that out of the Environmental Impact Assessment process for the replacement reactor, there was a need to consider long term management/disposal options for waste from the reactor. While there was still considerable lead time, there was a need to start exploring the issues over the next few years, including public involvement in the process. CEO had raised the possibility of Council involvement with DISR. Council agreed that this was an appropriate area to develop advice on, and that the CEO should pursue the issue with DISR.

Council also noted the importance of having an appropriate waste disposal system. It was agreed that a paper should be developed as a Council statement on radioactive waste in Australia, including a Council statement on the need for a National Radioactive Waste Repository, the risks of not having a repository, etc. ARPANSA will start the process with assistance from some Council members. Mr Raue and Dr Robb agreed to contribute.

6. BRIEFING AND INSPECTION – ARPANSA'S ROLE IN MONITORING COMPLIANCE WITH THE COMPREHENSIVE TEST BAN TREATY (CTBT)

Dr Malcolm Cooper of ARPANSA's Environmental & Radiation Health Branch briefed the Council on arrangements for the CTBT. The treaty was signed in 1996. The CTBT Organisation is an independent international organisation that runs somewhat like a UN organisation. It is run from Vienna. There are 150 signatories to date. About 50-55 countries (including Australia) have ratified the treaty. There are 44 specific countries that must ratify the treaty before it comes into force. ARPANSA will be a data centre for radionuclide monitoring, Australian Geological Survey Organisation (AGSO) will be a data centre for acoustic technologies. The signatories to the treaty take the data and decide the need for further action. There is provision for on-site monitoring.

There will be 310 monitoring stations worldwide, including 80 radionuclide stations.

ARPANSA looks after seven radionuclide stations, which function to detect particulates and noble gases. The monitoring process requires a delay of 24 hours before measuring to allow for the decay of short-lived radon daughters.

The seven radionuclide stations that ARPANSA will look after and their current status are:

- Melbourne and Perth currently being installed;
- Darwin and Townsville site survey stage;

- Cocos Islands, Macquarie Island, Mawson (Antarctica) will come on line eventually;

Dr Cooper advised that he had arranged for Council members to inspect the ARPANSA monitoring station following closure of the meeting.

7. REPORTS

7.1 ARPANSA's Activities

The CEO reported on recent ARPANSA activities, in particular, the licensing of current ANSTO facilities. ANSTO has applied for licences for HIFAR, Australian Radioisotopes, and for waste management. This has proved to be a complex task requiring considerable resources. The Act requires that the CEO provide public notification of the applications and call for submissions in response. In doing so information provided as part of the application must also be made public. Given that ARPANSA is seeking additional information, the process of how to make that additional information public is currently an issue. A sub-group of the Nuclear Safety Committee is to discuss this matter.

Maralinga and the Comprehensive Test Ban Treaty are other current issues that are separately included on the agenda.

7.2 Report from Radiation Health Committee

Mrs Fitch presented draft notes from the recent Radiation Health Committee that had not yet been ratified by RHC. At its meeting on 21-22 March 2000, RHC recommended that a Radiation Regulators' Forum was still needed to discuss implementation and jurisdictional issues. It would refer some issues on to RHC or perhaps the National Uniformity Implementation Panel (Radiation Control). Reports from other meetings and conferences had been discussed, including the People's Conference on the Waste Repository. Reports from working groups on mining codes, and scoping of radioactive waste issues were discussed. Establishment of working groups on medical radiation issues and scope of regulation were agreed. The template for Radiation Protection Series publications was agreed.

RHC reviewed various issues related to the publication program, including regulation impact requirements, agreed to the name "Radiation Protection Standards" to distinguish from Australian Standards. Various draft codes were discussed and RHC agreed that they be updated to the template form for next meeting. It was noted that it was important that the Transport Code be adopted by 1 January 2001, and that the Intervention Code should be high priority.

Other issues were:

- gas mantles where further information will be sought for future meetings;
- Drinking Water Guidelines where RHC had opportunity to comment on a draft that will be available for public comment in the near future;
- cosmic radiation, which will be on the next agenda. It was noted that European aircrew will come under radiation protection programs relating to cosmic radiation from May 2000;
- the WA Nuclear Waste Storage (Prohibition) Act 1999;
- certification of personal radiation monitoring services, where there are now several organisations offering services;
- laser pointers above class 2, where some States have taken action; and

- working life of sealed sources.

The Chair noted the number of working groups and suggested that perhaps Council members could become involved by acting as observers on working groups relevant to their areas of expertise, so that the Council did not just act as a “rubber stamp” for the Committees.

7.3 Report from Nuclear Safety Committee

Ms Kidziak reported that the Nuclear Safety Committee had met on 3 April 2000 and considered a wide range of issues. Dr Lee (member of NSC) had provided a keynote address on the Australian Transport Safety Bureau (ATSB) approach to systemic investigations. He covered active and latent failures that lead to accidents, and emphasised the importance of management involvement in safety culture. He described the INDICATE program adopted by ATSB. This program is designed to identify potential hazards in civil aviation, investigate the process and identify modifications that would minimise the risk of an accident. Dr Caroline Perkins of the Department of Industry Science and Resources also addressed the NSC on the history and current status of the proposed National Radioactive Waste Repository. Her presentation was similar to that to Council by Mr Jeff Harris. Other items discussed included:

- Reports on activities of ARPANSA, Council, RHC and the Cordoba Radioactive Waste Management Conference had also been received;
- NSC also discussed several aspects of ARPANSA’s licensing process. Public participation in the process was a particularly important aspect that was to be discussed further by a sub-group of NSC;
- The licensing process for the replacement reactor and the expected timelines for review of applications, including where the Safety Assessment Principles would be applied;
- The safety case for HIFAR;
- ARPANSA’s assessment of ANSTO’s advice on their review of criticality safety arrangements following the Tokaimura criticality accident;
- A report from the working group reviewing the ARPANSA Safety Assessment Principles for Controlled Facilities (SAP);
- A proposal for a working group to review the Criteria for the Design of Nuclear Installations. A working group was established with the aim of reviewing the Criteria by the end of the year;
- A draft of the Transport Code;
- The Draft Working Group Procedures and a report on progress towards a MOU with Standards Australia.

Council members were interested in the detail of Dr Lee’s presentation, and it was suggested that Dr Lee be asked to give the same presentation to Council, and possibly RHC. The process for non-minuted confidential incident reporting used by some organisations, such as IATA, was noted.

7.4 Draft Working Group procedures

Council was advised that this draft had now been reviewed by the RF Exposure Standard Working Group, the Radiation Health Committee, and the Nuclear Safety Committee. The main issues commented on by those groups revolved around confidentiality of working group discussions and documents. Council suggested that a sentence noting that people are appointed in their individual capacity even though they may be nominated by other parties be added to clause 2 of the procedures. It was also suggested that an example be added to clause 13 to make

its intent clearer. The procedures will be circulated out of session and finalised by the end of May.

7.5 Radiological Accident in Thailand

Mr Burns (ARPANSA) briefed Council of the radiological accident in Thailand wherein a disused therapy source was taken from the car park of a company that distributed radiotherapy machines. The source was taken to a scrap metal yard by four men. As a result two workers in particular had received large doses, and up to 9-10 workers had been affected. Dr Smart advised that he understood that 2 men had now died and one other had been admitted to hospital. Council was also advised that an IAEA Bulletin published in 1999 summarised several accidents where there had been a loss of regulatory control of this type.

Council noted that the lack of an appropriate disposal mechanism was a factor in this accident.

7.6 Report on RF Exposure Standard Working Group

A report from Dr Dickie, Council's observer on the working group was tabled along with a copy of the meeting record. Dr Roy outlined the progress made, and indicated that the group had been disappointed that an email from one of the task groups had been circulated widely. Council discussed the relationship of the Standard with codes of practice developed by the Australian Communication Industry Forum (ACIF) and the ACA approach to voluntary and mandatory codes. Council noted that the issue of prudent avoidance and precautionary approaches had been included in the NZ Standard, but that it was the intention that the working group would develop a standard with limits based on the science. The Standard may allude to the precautionary approach, however this was really a policy issue, which would be included in the ACIF code. The working group's intention at this time is to have a draft ready for public comment during the third quarter of the year.

Dr Roy also gave a summary of the NHMRC-funded research on electromagnetic fields. A short summary paper from the NHMRC secretariat was tabled.

Dr Roy provided Council with comment on the issue of whether use of 'hands-free' devices increased exposure to RF from mobile phones, and also on the expected timing of the IARC assessment of whether EMF is a carcinogen.

7.7 Report on Incident Register Development & Medical Radiation Issues

Dr Smart reported on progress in re-developing the Australian Radiation Incidents Register. He advised that it was based on definitions of accident and incident as defined in State/Territory legislation. The differences in definition were summarised and the relevance of the reporting system used by CASA/BASI was also discussed. A discussion paper is to be prepared by Mr Melbourne, Ms Letwin and Dr Smart for the next Radiation Health Committee meeting.

Dr Smart also reported that he had provided comment to the working group reviewing the Guidelines for Discharge of Patients Being Treated with Radioactive Materials, and that a new material, Quadramet (containing Sm-153) had a potential problem with disposal, as it contained small quantities of longer-lived contaminants, which meant that it exceeded disposal limits in some States. ANSTO has arranged to take back the vials, so that the main issue is the lack of uniformity of exemption limits between the States and Territories and the Commonwealth.

Information on a symposium in November in Newcastle on medical Radiations that will highlight reference dose levels was tabled.

Dr Smart will present a paper on incidents in nuclear medicine at the next Council meeting.

8. OTHER BUSINESS

Dr Smith requested that the Chair provide assurances in relation to articles in certain newspapers which named him in relation to fundraising for Minister Wooldridge, alleged connections with the 'scan scam', and mentioned his appointment as Chair of Council. Dr Smith said that he raised the issue as he felt it may impact on the business of Council. The Chair indicated that he had known Dr Wooldridge since prior to 1995, and had been responsible for the facilitation of functions to allow nuclear medicine physicians to meet the Minister, and had not specifically solicited donations. He said that, as a nuclear medicine specialist, he had no involvement with MRI. His appointment to the Council had been in line with standard procedures.

The CEO stated that the arrangements for appointments to Council had been handled in a standard way. The ARPANS Act requires the Minister to consult with certain organizations, and with the CEO, and had occurred. This included the requesting of nominations from relevant organisations. As the CEO appoints the Committees it was sensible for him to send letters requesting nominations for both Council and Committees. The CEO discussed nominees with the Minister, and a minute went forward with the CEO's recommendations. This included the recommendation of Dr McLean, who was subsequently appointed as Chair by the Minister. Nominees were asked to complete a declaration about any possible conflict of interest, the recommendations were examined by Cabinet and appointments made in the usual way.

The CEO also noted that the issue had been raised in the House of Representatives, and that regulatory decisions are a matter for the CEO, not the Council.

Dr McLean indicated that he stands by his declaration of no conflict of interest.

Dr Smart stated that he had known Dr McLean for many years and had the fullest confidence in his expertise and ability to chair the Council.

Dr Smith stated that he would consider further the assurances given by the Chair and consider his position on Council.

9. CLOSURE AND NEXT MEETING

The next meeting was scheduled for the week commencing Monday 24 July, with the actual day to be confirmed after discussion with the Chair.

The meeting closed at 4:35 pm.