QUARTERLY REPORT

OF THE

CHIEF EXECUTIVE OFFICER

OF ARPANSA

FOR THE PERIOD 1 APRIL TO 30 JUNE 2000

QUARTERLY REPORT

OF THE

CHIEF EXECUTIVE OFFICER

OF ARPANSA

FOR THE PERIOD 1 APRIL TO 30 JUNE 2000

ISSN 1444 - 4380

Produced by the
Australian Radiation Protection and Nuclear Safety Agency
Lower Plenty Road
Yallambie VIC 3085

ABN 61 321 195 155

Telephone +61 3 9433 2211
Facsimile +61 3 9432 1835
E-mail arpansa@health.gov.au
Internet http://www.arpansa.gov.au.

Further information on the content of this report may be directed to the Information Officer.

Printed by

CanPrint Communications Pty Ltd
16 Nyrang Street
Fyshwick ACT 2609

AUSTRALIAN RADIATION PROTECTION AND NUCLEAR SAFETY AGENCY

ARPANSA

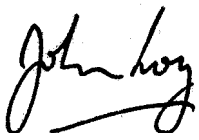
4 August 2000

The Hon Dr Michael Wooldridge MP
Minister for Health and Aged Care
Parliament House
CANBERRA ACT 2600

Dear Dr Wooldridge

In accordance with the *Australian Radiation Protection and Nuclear Safety (ARPANS) Act 1998*, I present to you my Quarterly Report for the period 1 April to 30 June 2000.

Yours sincerely



Dr John Loy
CEO of ARPANSA

PO Box 655
MIRANDA NSW 1490
Phone 61 2 9545 8333
Fax 61 2 9545 8314

Lower Plenty Road
YALLAMBIE VIC 3085
Phone 61 3 9433 2211
Fax 61 3 9432 1835

CONTENTS

FOREWORD

The *Australian Radiation Protection and Nuclear Safety Act (1998)* requires the CEO each quarter to prepare and give to the Minister of Health and Aged Care a report on the operations during the quarter of the CEO, ARPANSA, the Council and Committees. The Act requires that the report include:

- details of directions given by the Minister to the CEO during the quarter under section 16 of the Act;
- details of any breach of licence conditions by a licensee during the quarter, of which the CEO is aware;
- details of all reports received by the CEO during the quarter from the Council and Committees; and
- a list of all facilities licensed under Part 5 of the Act during the quarter.

REPORT ON PERFORMANCE

(a) UNIFORMITY OF RADIATION PROTECTION FRAMEWORKS

National Directory of Radiation Protection

The National Uniformity Implementation Panel (Radiation Control) (NUIP(RC)) did not meet during this quarter.

Working groups of NUIP(RC) have been considering issues including development of standard licence conditions, transboundary movements, style of regulations, fractionation, and standard definitions. A compilation of definitions from the Acts and Regulations of all jurisdictions, all of the current radiation protection codes of practice, and some relevant overseas and international publications has been prepared, and an initial meeting of the working group held to refine the document. Ultimately, a set of definitions for inclusion in the directory and for use in codes and standards will be developed. The licence conditions working group has prepared a sample set of conditions related to industrial radiography for NUIP(RC) consideration.

National Competition Principles Review

All jurisdictions have now agreed to the terms of reference for the review. Agreement to the cost-sharing arrangement has yet to be finalised with one jurisdiction. It is expected that the review will commence early next quarter.

(b) ADVICE ON RADIATION PROTECTION AND NUCLEAR SAFETY

Visits by Nuclear Powered Warships

The ARPANSA report for the interdepartmental Visiting Ships Panel (Nuclear), documenting revisions to the reference accident model used in assessing the suitability of Australian ports for visits by nuclear powered warships, has been accepted by the States and Territories. One State had further comments that will be addressed at the next meeting.

ARPANSA provided radiation protection and nuclear safety experts to the Working Group of the Panel that visited Gladstone in early June to assess the Port Emergency Plan for visits by nuclear powered warships.

Maralinga

The field monitoring to verify the clean-up at Maralinga has been completed and further monitoring is proceeding to check for plutonium contamination in other areas where, historically, it might be expected.

Senate Inquiry

The Senate Environment, Recreation, Communications, Information Technology and the Arts References Committee will conduct an Electromagnetic Radiation Inquiry into aspects of the Government EME program, research and efforts to set a new Australian Standard. Submissions by ARPANSA and by the Committee on Electromagnetic Energy Public Health Issues (convened by ARPANSA) were prepared and submitted to the Committee.

Information on Solar Ultraviolet Radiation (UVR)

ARPANSA continues to work closely with anti-cancer organisations in providing information for programs. Information, references and web-site links were provided for the Queensland Cancer Fund's Sun Protective Clothing web site. Comments were also provided on the Western Australia Cancer Foundation's Sunsmart Information kit and the Anti-Cancer Council of Victoria's UVR Index press release.

Repatriation Medical Authority (RMA)

The CEO of ARPANSA has participated on a working party of the RMA to advise on principles that should be taken into account when assessing eligible persons with certain diseases who may have been exposed to ionizing radiation.

(c) RESEARCH ON RADIATION PROTECTION, NUCLEAR SAFETY AND MEDICAL EXPOSURES TO RADIATION

Solar Ultraviolet Radiation (UVR)

Ongoing collaboration between ARPANSA and the Australian Antarctic Division has resulted in a further joint publication: Ultraviolet radiation and health effects in the Antarctic. D J Lugg and C R Roy, *Polar Research (1999) 18(2), 353-359*

Drs Peter Gies and John Javorniczky presented papers at the 25th Annual Conference of the Australasian Radiation Protection Society ARPS Conference held in Sydney on 29 May-1 June 2000. The papers were titled: Measured UV Indices for Australian Capital Cities: 1996 to 2000 and The ARPANSA Solar UVR Spectral Measurement Programme.

The International Commission on Non-ionizing Radiation Protection held the 4th International Non-Ionizing Radiation Workshop in Kyoto, Japan on 22-25 May 2000. Dr Colin Roy presented two invited papers titled: Ultraviolet Radiation: Sources and Physical Characteristics and Public Information using the Global Solar UV Index.

In collaboration with the Queensland Institute of Medical Research (QIMR), a follow up study on UVR exposures of infants at a child care centre was commenced in early May. Other childcare centres in close proximity to QIMR have also agreed to take part. This study uses UVR-sensitive polysulphone film badges to assess exposure. Discussions are in progress with National Institute of Water and Atmosphere in New Zealand about ARPANSA's collaboration in a large-scale study of UVR exposure of 10-year old New Zealand school children.

(d) SERVICES PROVIDED IN RADIATION PROTECTION, NUCLEAR SAFETY AND MEDICAL EXPOSURES TO RADIATION

High-Energy X-Rays

ARPANSA has been contracted by the Australian Customs Service to provide technical and radiation protection advice in regard to high-energy X-ray container inspection systems. This work has involved travel to the United States, Europe and China.

Comprehensive Test Ban Treaty Organization (CTBTO)

Performance testing and initial testing of the airborne radionuclide particulate matter monitoring stations at Melbourne and Perth was completed and a proposal submitted to the CTBTO for funding to support the operation of the stations for up to 12 months pending their performance evaluation. The final reports for the design, commissioning and installation of these two stations were submitted to the Provisional Technical Secretariat (PTS) of the CTBTO in preparation for the station certification visit by PTS staff which has been scheduled for 1 – 8 August 2000.

Terms of Reference for the establishment of radionuclide monitoring stations at Townsville and Darwin have been reviewed and comments forwarded to the PTS. It is anticipated these stations will be established by ARPANSA and become operational during 2000 – 2001.

(e) COUNCIL AND COMMITTEE OPERATIONS

Planning for Council and Committee Future Work Program

The Chairs of Council and Committees, the CEO and senior ARPANSA staff met on 26 June to plan the future work for the Council and Committees. The role and relationships of the Council and Committees was discussed. Major issues identified for Radiation Health Committee were national uniformity and the need for a national radiation dose register. The key issues for the Nuclear Safety Committee were the issues to be considered in the licensing process for the proposed replacement research reactor, ARPANSA guidelines relevant to assessing nuclear installations and the basis for ANSTO discharge authorisations. ARPANSA's role in relation to the proposed National Radioactive Waste Repository was an important issue for both Committees. The Radiation Health Committee would look at radiation protection/public health aspects, while the Nuclear Safety Committee would advise on the engineering criteria. Major issues for the Council included overall management of radioactive waste in Australia, interventional radiology, the impact of radiation on the environment, and the precautionary principle and its application in radiation protection.

Radiation Health & Safety Advisory Council

The Council met on 14 April 2000 at ARPANSA, Yallambie. The Council considered further how the proceedings of Council and the Committees should be made available to the public. It was agreed that a summary of meeting outcomes would be made available via the ARPANSA web site as soon as possible after a meeting. Full copies of the minutes would be available on request after confirmation at the following meeting. Council noted that discussion had commenced with Standards Australia about a possible memorandum of understanding. A similar approach will be taken with the National Occupational Health & Safety Commission.

Council received a briefing from the Department of Industry, Science and Resources on the National Radioactive Waste Repository proposal. The briefing covered the amount of current and likely future radioactive waste in Australia, the process for site selection and the consultation process, as well as current progress towards site selection. There were also briefings from ARPANSA on the Maralinga rehabilitation project, and on ARPANSA's role in monitoring compliance with the Comprehensive Test Ban Treaty.

The CEO reported on an International Conference on Radioactive Waste Management and on the activities of ARPANSA. The Committee Chairs presented reports on Radiation Health Committee and Nuclear Safety Committee meetings.

Council also discussed a radiological accident in Thailand, and progress towards development of a standard for exposure to radiofrequency radiation, currently being developed by a working group of Radiation Health Committee.

The next meeting was scheduled for 24 July 2000.

Radiation Health Committee

The Radiation Health Committee (RHC) did not meet during this quarter,

A joint meeting of members drawn from the Mining Radiation Protection and Mining Radioactive Waste Code working groups was held and it was decide to recommend that the development continue as a single code via an amalgamated working group. A report on the meeting will be presented to the July meeting of the Radiation Health Committee.

Nuclear Safety Committee (NSC)

A meeting of the NSC took place on 3 April 2000 at ARPANSA in Miranda. The NSC received briefings on the Australian Transport Safety Bureau approach to accident investigations, and from the Department of Industry, Science and Resources on the proposed National Radioactive Waste Repository.

Various aspects of the ARPANSA licensing process were discussed. Of particular interest was the process for public participation, particularly in regard to licensing of current ANSTO nuclear facilities. It was agreed that a sub-group would meet with the CEO to discuss public consultation processes.

It was agreed to establish a working group to review the *Criteria for the Design of Nuclear Installations*, which will be used by ARPANSA to assess licence applications.

The NSC discussed the time frame for review of the ANSTO replacement reactor licensing process, the safety case for HIFAR, ANSTO's criticality safety arrangements, a report on the drafting of the *Code of Practice for the Safe Transport*

of Radioactive Material, and the proposed memorandum of understanding with Standards Australia.

A report was also received from the working group reviewing the *Safety Assessment Principles for Controlled Facilities*. The working group had incorporated comments into a revised version of the *Principles*, which had been provided to ARPANSA in June.

Radiofrequency (RF) Exposure Standard Working Group

The RF Exposure Standard Working Group met on 17 - 18 April 2000 at ARPANSA in Yallambie.

The meeting discussed reports from task groups formed at the February meeting. These were:

- rationale and safety factors;
- averaging time, non-uniform exposure, and comparison of limits;
- measurement guidelines for the new draft of the Standard; and
- exposed population groups.

Members gave presentations on the New Zealand RF Standard, occupational (industrial) RF issues, union perspective, and community concerns. It was agreed that for the next meeting, a version of the Standards Australia Ballot Draft would be prepared in the appropriate format to use as a starting document.

Meeting of Competent Authorities for the transport of radioactive material

On 22 June 2000 a meeting of Australian "Competent Authorities" for the Transport of Radioactive Material was held at ARPANSA Yallambie to discuss:

- the role of competent authorities;
- the International Atomic Agency's Transport Safety Standards Advisory Committee (TRANSSAC) meeting;
- the review of the *Code of Practice for Safe Transport of Radioactive Material*;
- a possible memorandum of understanding between competent authorities on issues such as incident response and certification of containers, uniformity and clarification of jurisdictional issues;
- the Australian transport package register;
- air and sea transport requirements; and
- timeframes for implementation of international transport requirements.

(f) REGULATION

Standards

Safety Assessment Principles

ARPANSA is addressing review comments provided by a Working Party of the Nuclear Safety Committee on the regulatory guideline *Safety Assessment Principles for Controlled Facilities*. The principles are used in assessing licence applications for nuclear installations, including the proposed replacement research reactor.

Decommissioning Guideline

A paper entitled *Decommissioning of Australian Nuclear Facilities - a Regulatory Perspective*, was presented at the 25th Annual Conference of the Australasian Radiation Protection Society. Subsequently it was published in the *Journal of the Australasian Radiation Protection Society*.

Design Guideline

ARPANSA continued to revise the regulatory guideline *Criteria for the Design of New Controlled Facilities and Modifications to Existing Facilities* to take account of comments. This document will now also be reviewed by a working group of the NSC.

Applications for Licence

Australian Nuclear Science and Technology Organisation (ANSTO)

A one-day seminar between ANSTO and ARPANSA staff discussed the licensing review process and ANSTO's licence applications relating to its five existing nuclear installations, nine prescribed facilities and the radiation sources used by five of its Divisions.

A revised Facility Licence Application, received in May, included additional detail on ANSTO's site-wide General Plans and Arrangements for safety at the Lucas Heights Science and Technology Centre. A review against ARPANSA's *Expectations for Plans and Arrangements* highlighted areas where more detailed assessment is required at the Facility and Divisional level and also identified possible licence conditions.

HIFAR safety documents were reviewed and a number of matters identified for discussion with ANSTO.

At a meeting with ANSTO's Physics Division it was agreed that the application for a licence to decommission the Moata research reactor would be dealt with in two

phases. The first would permit care and maintenance only, to keep the facility in a safe and stable condition. Additional documentation required in support of the application for the care and maintenance phase was identified. This was provided to ARPANSA by the due date and is under review. The second phase, to conduct the physical decommissioning, will be addressed when available options for have been assessed and the preferred option chosen.

To inform the public submission process for nuclear installations, additional information supporting ANSTO's licence applications was placed in ARPANSA's public reading room, the Sutherland Shire libraries and, to the extent practicable, on the ARPANSA web site. This information addressed:

- the General Plans and Arrangements;
- the operation of the HIFAR research reactor; and
- decommissioning of the Moata research reactor.

In response to requests from ARPANSA, additional information relating to radiopharmaceutical operations, fuel operations and waste operations is expected to be available to the pubic in mid-July, the end of July and August respectively.

Significant progress has been made in the assessment of the licence applications for ANSTO's Gamma Technology Research Irradiator and Secondary Standard Dosimetry Laboratory.

With regard to ANSTO's source licence application, additional information requested from Environment Division and Safety Division has been received and is currently being reviewed. The Engineering Division was visited to clarify a number of issues. Good progress has been made on the licence assessment.

ARPANSA - Yallambie

ARPANSA's teletherapy facility application has been reviewed. Additional information on the facility has been requested.

Source Licences

During the quarter, Safety Evaluation Reports were finalised and ten combined licences issued, covering about 70 individual licences for the low hazard category radiation sources.

Surveillance

Commonwealth Scientific and Industrial Research Organisation (CSIRO) Tritium Incident

A follow-up visit was conducted in response to the previously reported incident involving tritium contamination at the CSIRO Plant Industry Laboratory at Ryde. Clean up of the contamination has been completed and a final report is awaited.

Parks Australia North - Uranium Mill Tailings

A formal investigation has commenced into uranium mill tailings that have been uncovered by erosion in the South Alligator River Valley. The mill processed uranium ores from small mines that operated in the area during the 1950s and 1960s. The mill was removed and the mine sites were partly rehabilitated during 1991. The investigation is examining the regulatory implications associated with any radiologiocal hazards or need for further remediation.

Safety of ANSTO Nuclear Plant

The *Australian Nuclear Science and Technology Organisation Amendment Act 1992* established the Nuclear Safety Bureau (NSB) with functions including the review and safety of ANSTO's nuclear plant. This part of the Act was repealed with the proclamation of the *ARPANS Act.* However, during the period prior to a decision being made on an application for licence for these facilities, the CEO of ARPANSA has functions and powers to enable the safety review formerly performed by the NSB to be continued by ARPANSA. By agreement with ANSTO, the scope of this role of the CEO was expanded to cover all of ANSTO's facilities.

Abnormal Occurrences - HIFAR

During the quarter there were no abnormal occurrences at HIFAR classified as Level 1 and above on the International Nuclear Event Scale. ARPANSA is notified of all abnormal occurrences at HIFAR however only incidents that have safety significance (those classified as INES Level 1 or above) are included in this report.

Abnormal Occurrences – Actinide Suite

During May, an incident occurred in the Actinide Suite while an ANSTO officer was preparing to load a radioactive 'leach sample' into a leaching vessel. The sample crumbled in the officer's hands and pieces fell onto tissue paper placed under it on the workbench. The officer recovered three large pieces and placed them into a plastic bag. The smaller fragments were left on the tissue that was then folded and placed in a bin for contaminated waste. The officer proceeded to leave the area.

Contamination was detected on one hand of the officer during personal monitoring. The officer then washed her hands thus contaminating both hands. Upon arrival, the supervisor contacted the safety personnel who attended and isolated the laboratory. The individual involved was also monitored for internal radioactive contamination using the whole body monitoring facility at ANSTO and again, at Yallambie, by ARPANSA personnel. The monitoring results indicate no internal contamination of the officer. These results and a final report have not yet been provided formally to ARPANSA.

ARPANSA officers conducted an initial investigation into the incident and are awaiting further information from ANSTO. ANSTO has implemented a number of measures to avoid any recurrence of the incident.

Audits of Operations

An audit of criticality arrangements at the Lucas Heights centre is being planned. ARPANSA is presently reviewing all of ANSTO's current criticality certificates and will create a criticality certificate data base.

As part of the process of monitoring and reviewing the operations of the HIFAR reactor, ARPANSA conducts a routine audit of the HIFAR Control Room Log Book covering one 28 day operating program each quarter. Recommendations for improving procedures, plant and reporting will be followed up through further audits and reviews.

HIFAR Major Shutdown

ARPANSA requires HIFAR to be shutdown for an extended period, nominally every four years, to allow inspections and modifications that cannot be undertaken during routine shutdowns. ARPANSA agreed to the schedule of work for the major shutdown that commenced on 7 February 2000 and monitored and inspected the maintenance and modification activities performed during the quarter.

Agreement of the CEO of ARPANSA was required before the reactor could be restarted after the shutdown. Following ARPANSA's review of reports documenting the inspections and modifications undertaken during the shutdown, the CEO agreed to low power operation on 1 May and full power operation on 2 May. ARPANSA's Reactor Physicist witnessed and reported on the HIFAR start up.

Audit of Engineering Division

An audit was conducted of Engineering Division's documentation and the performance of functional checks in the Engineering Radiography Laboratory. Key areas addressed were quality control, maintenance, training, dose records, calibration, and incidents and corrective action. All records sighted and functional checks observed were consistent with documented procedures.

Fuel Element Handling Incidents

ARPANSA is reviewing a plan and schedule for implementing the recommendations of the ANSTO report on the root cause analysis of the three spent fuel handling incidents, which occurred in 1998 and 1999.

Radioactive Discharges

The ANSTO reported radioactive airborne discharges from HIFAR were reviewed by ARPANSA and were found to comply with the airborne discharge authorisation issued by the Nuclear Safety Bureau.

As an independent check of ANSTO's measurement of radioactive airborne emissions, discharges from all stacks at Lucas Heights were analysed by ARPANSA's laboratory for a randomly nominated week during the quarter. The results obtained compare favourably with those reported by ANSTO for their analysis of the same samples.

ARPANSA is currently developing a site-wide airborne discharge authorisation to apply all facilities at the Lucas Heights Science and Technology Centre and the ANSTO National Medical Cyclotron. To assist in this process, ANSTO submitted information during the quarter and is currently preparing further information for the Cyclotron. The authorisation will include a requirement on ANSTO to report radiation doses arising from airborne discharges, calculated using a method approved by ARPANSA, compared with agreed dose constraints and objectives.

Liquid discharges from the Science and Technology Centre are required to comply with the Trade Waste Agreement between Sydney Water and ANSTO. This agreement was approved by ARPANSA and includes limits on the concentrations of radioactive materials permitted at the discharge point and at the Cronulla Sewerage Treatment Plant. The limits are based on World Health Organisation Guidelines for Drinking Water Quality (1993) and assume consumption of 700 litres of the water in a year. Liquid discharges were reported by ANSTO for the previous quarter and show compliance with the limits set in the Agreement.

HIFAR Plant and Procedure Modifications

ARPANSA reviewed, approved and monitored the implementation of a number of safety-related modifications carried out during the major shutdown. These included modifications to an active ventilation system, instrumentation of reactor coolant circuits and for monitoring accidents.

(g) INTERNATIONAL LIAISON

CEO's Overseas Visit

Between 13 - 22 June 2000, Dr John Loy attended the 5th meeting of the International Advisory Committee of the World Health Organisation on Electromagnetic Fieldsand visited the UK for discussions at National Radiological Protection Board and the UK Nuclear Safety Directorate.

Korean Peninsula Energy Development Organisation (KEDO)

Mr Don Macnab attended the Nuclear Safety Advisory Group of KEDO during June. The Advisory Group oversees the safety and regulation of the international project to finance and construct two nuclear power stations in the Democratic Peoples Republic of Korea and provides advice to the Executive Director of KEDO.

Committee on Radiation Protection and Public Health (CRPPH)

Mr Stuart Prosser attended the three-day annual meeting in Paris of the Nuclear Energy Agency CRPPH. Primarily concerned with nuclear energy issues, this committee is also influential in conceptual and policy issues with regard to broader radiation protection concerns. Three of the major topics discussed were developments in the current philosophy of radiation protection, stakeholder involvement and the radiological impact of spent fuel management options. The first two topics are to be the subject of international scientific meetings to be held later this year. Results of the third have been issued as a Nuclear Energy Agency report.

United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)

Mr Peter Burns attended the 49th Session of UNSCEAR in Vienna from 2 – 11 May. The Session finalised the year 2000 report, which summarises worldwide exposures from natural sources, man-made sources, medical exposure and occupational exposure. In addition there are chapters on epidemiological evaluations, biological effects at low doses and the effects of the Chernobyl accident.

Thailand Food and Drug Administration

Two representatives from the Thailand Food and Drug Administration, Ministry of Public Health visited ARPANSA for discussions about the development of a regulatory system for the licensing of manufacturers and importers of radiopharmaceuticals and a system for the evaluation and registration of radiopharmaceutical drugs and radioactive devices in medicine for Thailand. Other areas of discussion were the GMP audit of radiopharmaceutical manufacturers and the setting up of pre- and post-marketing surveillance programs.

European Intercomparison

ARPANSA has been invited by the Swiss Office of Metrology (OFMET) to participate in a primarily European intercomparison of beam quality measurements for standard accelerator X-ray beams. This intercomparison is of fundamental importance for the calibration of therapy dosemeters.

International Atomic Energy Agency (IAEA)

Mr Trevor Mountford-Smith attended the annual meeting of the Transport Safety Standards Advisory Committee in Vienna from 8-12 May. The committee overseas and advises on the IAEA publications relating to the safe transport of radioactive materials and various other aspects of the IAEA's transport safety program.

From 6-8 June, ARPANSA sponsored an IAEA seminar in Sydney to support the formal introduction of the International Nuclear Event Scale into Australia.

Dr John Baldas participated in the IAEA sponsored meeting in Buenos Aires on 26-30 June. The meeting reviewed the draft IAEA technical document *Regulatory Guidance: Radiation Safety in Nuclear Medicine.*

Dr Ches Mason attended a meeting of the Radiation Safety Standards Advisory Committee of the IAEA (RASSAC) in Vienna from 3-7 April. Part of the meeting was held jointly with the Waste Safety Standards Advisory Committee (WASSAC) (see below) to deal with matters of mutual interest. As Chair of RASSAC, Dr Mason also attended a meeting of the IAEA's Advisory Commission on Safety Standards in Vienna from 5-7 June.

Dr Malcolm Cooper attended a meeting of WASSAC in Vienna from 3-7 April. The committee reviews the IAEA Radioactive Waste Safety Standards program for the development for the development of safety standards and other guidance material relating to radioactive waste management.

From 5 - 30 June, IAEA sponsored visitors to ARPANSA:

- Ms Lynette Cayabo, Senior Scientific Officer Philippines Nuclear Research Institute and
- Mr Dinh Ngoc Quang, Legal Officer, Radiation Protection and Safety Authority,

were provided with guidance on regulatory issues.

Mr Mohd Yasin Sudin, Science Officer, Atomic Energy Licensing Board, Malaysia completed his three month IAEA training fellowship at ARPANSA on 15 June.

John Loy
CEO
4 August 2000