AUSTRALIAN RADIATION PROTECTION AND NUCLEAR SAFETY

QUARTERLY REPORT

OF THE

CHIEF EXECUTIVE OFFICER

OF ARPANSA

FOR THE PERIOD 1 OCTOBER TO 31 DECEMBER 2001

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FOREWORD

The *Australian Radiation Protection and Nuclear Safety Act* 1998 requires the Chief Executive Officer of the Australian Radiation Protection and Nuclear Safety Agency to submit to the Minister, at the end of each quarter, a report on the operations during the quarter of the CEO, ARPANSA and the Council and Committees constituted under the Act.

The quarterly report should also include details of any direction given by the Minister to the CEO under Section 16 of the Act; any breach of licence conditions by a licensee, of which the CEO is aware; all reports received by the CEO from the Radiation Health and Safety Advisory Council and the Nuclear Safety Council on radiation protection, nuclear safety and the safety of controlled facilities and details of facilities licensed under Part 5 of the Act.

Further details about matters contained in this report are available through the ARPANSA Information Officer who can be contacted by telephone on 03 9433 2211, by facsimile on 03 9432 1835 or by e-mail to arpansa@health.gov.au.

REPORT ON PERFORMANCE

1. Uniformity of Radiation Protection Frameworks

National Directory for Radiation Protection

1.1 The Radiation Health Committee's (RHC's) National Uniformity Implementation Panel (Radiation Control) met on 1 November 2001 and finalised amendments to the draft National Directory. Australian jurisdictions, as well as the New Zealand government, will be consulted on the draft. The Panel will consider comments received and a further draft will be forwarded to the RHC for a decision on whether to proceed to the public consultation phase, which will include a Regulatory Impact Statement. The RHC will then vote on the adoption of the Directory.

2. Advice on Radiation Protection and Nuclear Safety

National Competent Authority for Radiation Emergencies

2.1 In June 2001, the Department of Foreign Affairs and Trade designated ARPANSA as the National Competent Authority for Domestic Radiation Emergencies (NCA (D)) and the National Competent Authority for Radiation Emergencies Abroad (NCA (A)) to communicate with the Emergency Response Centre of the International Atomic Energy Agency (IAEA). This designation supports Australia's obligations under the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency.

2.2 The Environmental and Radiation Health Branch is responsible for the coordination and operation of the NCA (D) and NCA (A) within ARPANSA. The Branch has established a Radiation Emergency Coordination Centre (RECC) at its Yallambie office with 24-hour fax and telephone facilities to provide communications with the IAEA, and to State and Commonwealth emergency response organisations. Following September 11, the RECC was placed at a heightened state of preparedness, maintaining 24-hour access to ARPANSA radiation protection expertise and radiation emergency response teams.

Comprehensive Test Ban Treaty – air sampling monitoring systems

2.3 Radionuclide air sampling stations have been established and certified in Perth and Melbourne, and have been tested and evaluated over the year. ARPANSA has also been contracted to establish three additional air-sampling stations at Townsville, Darwin and Kavieng (PNG). Work is well advanced for Townsville and Darwin, and it is expected that Townsville will be certified in the very near future, which will then enter into a testing and evaluation phase. The infrastructure contractor is currently finalising the infrastructure works in Kavieng, and ARPANSA will shortly begin the station implementation phase of the project.

2.4 ARPANSA has responded to requests for proposal for the infrastructure and installation, then testing and evaluation, of a radionuclide particulate station at the Cocos Islands, Australia. ARPANSA has also responded to the request for proposal for the conducting of site surveys at Mawson, Antarctica, and Macquarie Island.

Draft RF Standard

2.5 Staff within the Non-Ionizing Radiation Branch continued their heavy involvement in the development of the RF Standard, its Regulatory Impact Statement and the analysis of public submissions. They also prepared briefing information and additional supporting material for ARPANSA's web site.

Nuclear powered warships

2.6 ARPANSA hosted a meeting of the Visiting Ships Panel (Nuclear) on 21 November at its Yallambie office.

Conferences, meetings and technical advice

Non-Ionizing Radiation Branch

2.7 Wayne Cornelius attended the Electromagnetic Energy (EME) Reference Group meeting at ARPANSA's Miranda office on 23 November and gave a briefing on the development of the RF Standard.

2.8 Peter Gies participated in the second meeting of the Australian Cancer Society National Skin Cancer Steering Committee on UVA and Sunscreens on 19 December.

2.9 Michael Bangay undertook RF surveys for the Australian Council for Educational

Research, Anzac Naval Training Williamstown and Lockheed Martin (satellite tracking station). Michael also did presentations for the Powerline Consultative Committee, the Sutherland Shire Council Workshop and the Property Council of Australia, and assisted a public consultation forum in Western Australia.

2.10 Ken Karipidis was ARPANSA's representative at the December 11 meeting of the Municipal Association of Victoria Telecommunications Working Group.

2.11 Branch staff provided input into factsheets on non-ionizing radiation to be released by the World Health Organisation and also continued their work on developing a proposal for a possible EMR health effects register.

Medical Radiation Branch

2.12 On 13 to 14 November Zlata Ivanov attended a measurement uncertainty course run by the National Analytical Reference Laboratory.

2.13 Keith Wise presented a paper entitled *"Estimates of Radiation Risks from Mammography Screening in Australia"* at the Engineering and the Physical Sciences in Medicine conference held in Fremantle. The current status of the development of national codes of practice for radiation protection in diagnostic radiology, radiation therapy and medicine were presented and discussed at a conference workshop.

2.14 A booth promoting ARPANSA's activities was shared by the Personal Radiation Monitoring Service and the Medical Physics Section at the annual scientific meeting of the Royal Australian and New Zealand College of Radiologists. The Medical Physics Section promoted its forthcoming survey on radiation doses from general radiology and received constructive and positive feedback.

2.15 David Webb assisted the accident analysis working group of the Nuclear Safety Committee, providing further advice to the CEO on the application by the Australian Nuclear Science and Technology Organisation (ANSTO) for the replacement research reactor construction licence.

2.16 Unreferred CT examination to measure calcium deposits in coronary arteries is controversial. At the request of the New South Wales regulatory agency (Environment Protection Authority), the Medical Physics Section estimated the radiation dose to a typical patient undergoing this procedure.

2.17 David Tingey conducted radiographic examinations to confirm the integrity of bullet proof vests supplied by an Australian company and also measured the shielding properties of locally manufactured lead-loaded fabrics in order to determine their lead equivalence.

Environmental and Radiation Health Branch

2.18 Stephen Solomon briefed Commonwelath agencies on ARPANSA's radiation emergency response at a special meeting of the National Chemical, Biological and Radiological Working Group at Emergency Management Australia on 15 October.

Regulatory Branch

2.19 Vince Diamond attended the Committee on Nuclear Regulatory Activities (CNRA) and Committee on the Safety of Nuclear Installations (CSNI) meetings of the OECD's Nuclear Energy Agency in December. The CNRA meeting reported on key isues associated with nuclear power plants including: regulatory effectiveness, management of change, working group on inspections, interfaces with the IAEA, safety back-ups, external threats and future projects. The CSNI meeting followed on from the CNRA and covered many of the above topics in more technical detail. Additional topics discussed were: fires, computer based safety, research projects in structures, thermal hydraulics and severe accident management, and fuel cycle safety.

Strontium 90 testing program

2.20 ARPANSA issued a public report in September that includes details of the strontium-90 testing program from 1957 to 1978 to monitor fallout from atmospheric tests and its effect on the Australian population. The report is available at http://www.arpansa.gov.au/strontium90.htm.

2.21 The CEO of ARPANSA briefed the Minister for Health on ARPANSA's findings. The Minister sought advice from the Australian Health Ethics Committee of the National Health and Medical Research Council on the ethical and practical considerations that ARPANSA must take into account when determining policy and procedures in relation to the information and samples that it has inherited. That advice is still pending.

Public communication activities

2.22 ARPANSA held a public forum in Sydney on 14 and 17 December to examine and test safety issues surrounding ANSTO's proposed replacement research reactor. The CEO acted as Chair and was assisted in the sometimes vigourous questioning by three independent panellists with complementary skills and experience – Dr Bob Budnitz (USA), Mr Garry Schwarz (Canada) and Dr Bill Williams (Australia). The Transcript of Proceedings, and reports to the CEO from each of the panellists, will be posted on the ARPANSA web site once they become available in January 2002.

The invited forum public participants were (in alphabetical order): Australian Conservation Foundation, Australian Nuclear Association, Friends of the Earth, Greenpeace, Sutherland Shire Council, Sutherland Shire Environment Centre and Mr Tony Wood. The licence applicant, ANSTO, also gave a presentation and faced questions, as did the Department of Industry, Tourism and Resources and the Australian Safeguards and Non-Proliferation Office. The CEO will take all the forum outputs into account when making his licence decision.

2.23 Graeme Elliott continued to respond to phone inquiries from the public. Most commonly, callers requested information about health issues concerning magnetic fields from such things as powerlines, transformers, substations, and meter boxes. Other topics of interest were the possible health effects of mobile phones and base

stations, and radiation leakage from microwave ovens.

2.24 Visitors to the ARPANSA web site who download a single file are logged as a single hit. ARPANSA's site received a total of 135,752 successful 'hits' in the quarter. Average daily 'hits' over the period were: *October* - 1,842; *November* – 1,481; and *December* – 1,103. The three most popular page views were: *October* – Home (503), Index of Publications (196) and Related Sites (194); *November* – Home (412), Resource Guide for UVR Protective Products: Product Type Index (158); Resource Guide for UVR Protective Products: Company Index (132); *December* – Home (285), Resource Guide for UVR Protective Products: Product Type Index (180) and Resource Guide for UVR Protective Products: Rays Tent City (122).

3. Research on Radiation Protection, Nuclear Safety and Medical Exposures to Radiation

Non-ionizing radiation

3.1 An occupational Ultraviolet Radiation (UVR) exposure study in collaboration with Queensland Health has commenced at numerous locations in Queensland, measuring the UVR doses received by a range of outdoor workers. The UVR Section is providing the 2000 UVR sensitive film badges used to measure doses as well as analysing the results of the study.

3.2 A study began in collaboration with the Skin and Cancer Foundation, Australia, to calibrate and standardise the UVR emissions from phototherapy cabinets used for medical exposures in hospitals. The results will help promote uniformity of phototherapy dosimetry and exposures.

3.3 The UVR Section provided UVR data to the University of Tasmania for a collaborative study on ground-based UVR measurement calibration procedures, which should lead to a scientific publication.

3.4 A paper on the design of a proposed Extremely Low Frequency (ELF) Survey was completed and sent out for external review. An ELF protocol paper was also completed, has been reviewed externally and will now be released for public comment.

Medical radiation

3.5 In late November the Ionizing Radiation Standards Section was visited by Ken Shortt, recently of the National Research Council, Canada, and now Director of Dosimetry and Medical Physics at the IAEA. Ken worked with Robert Huntley and Lew Kotler on papers reporting intercomparison of radiation air kerma standards undertaken at the Ottawa laboratory in 1997.

3.6 The radiation effective doses for a typical patient undergoing a particular type of CT spinal examination were determined in support of a submission to an ethics committee for a clinical trial. The study involves the comparison of CT and Dual X-

ray Absorptiometry techniques for determining bone mineral density.

4. Services Provided in Radiation Protection, Nuclear Safety and Medical Exposures to Radiation

Calibration services

4.1 There was continued strong demand for commercial service work, including the laboratory calibration of RF monitors and probes. A total of 76 jobs were completed, consisting ot 53 monitors, 75 probes, 22 badges/dosimeters and 13 other sensors. Further progress was made in the quality management of ARPANSA services, with the submission of EMR/RF quality assurance documentation to the National Association of Testing Authorities (NATA) on 2 November.

Fabric testing and labelling

4.2 Fabric UPF testing, licensing and labelling continued. 210 fabric samples were tested, ten UPF trademark licences completed and 506,000 UPF swing tags were issued. Other testing included the UVR protection afforded by sunglasses, the calibration of two UVR radiometers (one from New Zealand), provision of solar UVR data and dosimetry/calibrations for a Melbourne-based medical/phototherapy lamp manufacturer. Inter-comparison testing with two fabric manufacturers to verify the accuracy of their UPF testing facilities was carried-out on a commercial basis.

QA program for radiopharmaceutical products

4.3 The quality assurance program for radiopharmaceutical products used by hospital nuclear medicine departments found no non-compliance in the products tested.

5. Council and Committee Operations

Radiation Health and Safety Advisory Council

5.1 The Council met on 30 November at ARPANSA's Yallambie office. A summary of the meeting is at http://www.health.gov.au/arpansa/rhsac_m2.htm.

Radiation Health Committee

5.2 The RHC met from 31 October to 1 November at ARPANSA's Yallambie office. A summary of the meeting is at http://www.health.gov.au/arpansa/rhc_mt.htm.

5.3 The RHC finalised a new statement on the disposal of domestic smoke detectors. The statement will become available on the ARPANSA web site. Following approval by the RHC, and the subsequent recommendation by the Radiation Health and Safety Advisory Council to the CEO to adopt the revised Transport Code, the Code was published and is now available from Ausinfo bookshops. All jurisdictions are making the necessary changes to adopt the Code within their regulatory frameworks.

Nuclear Safety Committee

5.4 The Nuclear Safety Committee met from 5 to 6 July at ARPANSA's Miranda office. A summary of the meeting is at http://www.health.gov.au/arpansa/nsc_mt.htm.

Radiofrequency (RF) Exposure Standard Working Group

5.5 Following the working group's final meeting on 11 to 12 October, public comments on the Regulatory Impact Statement for the new Standard were invited from 26 October to 23 November. The RHC reviewed the Draft Standard on 1 November. The Committee advised that, subject to the outcome of the Regulatory Impact Consultation, the Standard should be forwarded to the Radiation Health and Safety Advisory Council for recommendation to the CEO of ARPANSA.

The Council requested that the completed report on the Regulatory Impact Statement for the Draft RF Exposure Standard and a plain language guide for the Standard be considered by the Council before a recommendation was made to the CEO.

6. Regulation

Standards

6.1 Revisions of the documents *Regulatory Assessment Principles for Controlled Facilities* and *Regulatory Assessment Criteria for the Design of New Controlled Facilities and Modifications to Existing Facilities* have been completed and are available on the ARPANSA web site at http://www.arpansa.gov.au/pub_sub.htm#rap_comm. These revisions take into account the results of a public submission process.

Licensing

Licence Applications

6.2 Two new source licence applications were received during the quarter.

Application Assessment and Licence Issuance

6.3 Reviews of licence applications resulted in the following decisions:

- the issue of a revised source licence to one division of the Australian Nuclear Science and Technology Organisation (ANSTO), that incorporated three

previously issued source licences, two new applications and the withdrawal of one application;

- the issue of a source licence to the Bureau of Meteorology;
- the issue of source licences to two divisions of the Commonwealth Science Industry and Resources Organisation (CSIRO), incorporating the assessment of three applications;
- the issue of a revised source licence to one division of CSIRO, which also incorporated one previously issued source licence; and
- the return by ARPANSA of a source licence application, as the applicant was deemed not to require a licence under the *ARPANS Act*.

Plan and schedule for meeting ANSTO Nuclear Installations Licence Conditions

6.4 A plan and schedule was received for completion of the Special Conditions attached to the Moata Facility Licence.

6.5 A plan and schedule was received for completion of the Special Conditions attached to the HIFAR Facility Licence.

6.6 A plan and schedule was received for completion of the Special Conditions attached to the Radiopharmaceuticals Operations Licence.

6.7 A plan and schedule was received for compliance with the Standard and Special Conditions attached to the Fuel Operations Facility Licence.

Import Permits

6.8 The Regulatory Branch processed 89 Customs Prohibited Release permits for the importation of non-medical radioisotopes. The Radiopharmaceutical Section issued 92 Customs Prohibited Release permits for the importation of medical radioisotopes.

Australian Nuclear Science and Technology Organisation (ANSTO) - Replacement Research Reactor

6.9 The Regulatory Branch review of ANSTO's application for a facility licence to construct the proposed replacement research reactor is proceeding. Three consultants were engaged to assist assessment officers. They were: Mr Fang Shim, a thermal hydraulic specialist; Mr Ricardo Waldman, who looked at how the Preliminary Safety Analysis Report complies with Argentine regulatory requirements; and Mr Jim Johnson from the IAEA, who considered the impact of external events (including aircraft crashes and earthquakes) on the proposed reactor.

6.10 Information on the many thousands of public submissions received on ANSTO's application for a facility licence to construct the proposed replacement research reactor is available at http://www.arpansa.gov.au/mr1_111001.htm.

ANSTO Waste Operations

6.11 The assessment of the ANSTO Waste Operations and Technology Division's licence application continued during the quarter and a draft Safety Evaluation Report was prepared for consideration by management. It is expected that a decision will be made on the application during the first quarter of 2002.

CSIRO

6.12 Source licences were issued to two Divisions. Two Regulatory Branch officers attended a CSIRO Safety Officers Symposium to present information and answer questions on the licences issued last quarter. They also took the opportunity to visit a number of laboratories.

Parks Australia North

6.13 Authorisation was provided for additional interim works to further stabilise one area preparatory to final remediation. It is proposed to undertake the remediation in two stages, beginning with non-radiological work. ARPANSA anticipates a formal notification to this effect. Approval of appropriate radiological clearance criteria will be required from ARPANSA.

Australian Customs Service

6.14 A Facility Licence was issued authorising the Customs Service to prepare a site for a Prescribed Radiation Facility. A review of the construction application has begun and further information has been requested. In addition, a replacement Source Licence was issued covering all Customs Service controlled material and controlled apparatus. The previous Combined Source Licence was surrendered.

Australian Defence Force and Department of Defence

6.15 As required by a condition attached to the Defence Source Licence issued by the CEO of ARPANSA in May, an updated inventory of controlled apparatus and controlled materials was provided to ARPANSA.

6.16 A 'Source Licence Compliance' meeting was held between Defence and ARPANSA. Topics discussed included Conditions of Licence, Surveillance programs, and Prescribed Radiation Facility Licence Applications.

6.17 ARPANSA officers visited the Physics Department at the Australian Defence Force Academy. Consequently, the Academy's Neutron Generator Facility Licence Application was withdrawn, as the neutron generator would be covered by the Defence Source Licence. Arrangements were made for the submission of a Facility Licence Application for a recently acquired particle accelerator.

Surveillance

Department of Defence

6.18 ARPANSA inspectors undertook seven audits and inspections at Defence sites in Albany and Rockingham in Western Australia. The inspection results have been discussed with Defence personnel and will be presented to the Defence Safety Conference postponed until mid-2002.

6.19 An ARPANSA officer visited RAAF Tindal at Katherine in the Northern Territory to assist in the investigation of a minor radiofrequency incident.

Maralinga Licence Conditions

6.20 An ARPANSA officer conducted an inspection of the Maralinga site. Emphasis was placed on the implementation of security plans and arrangements relating to access control and the drilling of ground water monitoring bores at Taranaki.

6.21 A meeting to discuss Maralinga Licence transfer issues was held between ARPANSA and SA Human Services, SA Department of Premier and Cabinet, and SA Crown Solicitor's Office – Native Titles Section. Topics discussed included the commencement of drilling on site as part of the licence condition requirement for water table monitoring, the Maralinga Rehabilitation Technical Advisory Committee report and ARPANSA's involvement in the final stages of the Maralinga Land and Environment Management Plan.

ANSTO Airborne Radioactive Discharges

6.22 All airborne radioactive discharges ANSTO reported for the period 23 September to 23 December remained less than the relevant notification levels under the Licence authorisation issued in June.

ANSTO Liquid Radioactive Discharges

6.23 The Regulatory Branch reviewed ANSTO's reports of liquid radioactive discharges from the Lucas Heights Science and Technology Centre from September to December and found that they complied with the Trade Waste Agreement of 31 May 2001 between Sydney Water and ANSTO.

ANSTO Replacement Research Reactor Site Licence

6.24 The eighth quarterly report by ANSTO on its compliance with the *"Replacement Research Reactor Facility Licence, Site Authorisation"*, was received. Some of these matters are currently under consideration by ARPANSA as part of the assessment of ANSTO's application for a licence to construct the replacement reactor.

Criticality

6.25 A report of the 2000 criticality safety review of ANSTO was issued. The report

makes a number of general and specific recommendations relating to criticality safety at ANSTO, which will be reinforced through the licensing process.

Radiopharmaceuticals

6.26 An Inspection Checklist for Radiopharmaceuticals Operation Facility was developed and applied to an inspection of ANSTO Radiopharmaceuticals Operation Facility. An inspection report was prepared.

HIFAR Plant Modifications and Engineering Projects

6.27 ARPANSA received a Quarterly Report on the status of the HIFAR Plant Modification and Engineering Projects, as required under the licence conditions (Facility Licence No. FO0044-4A). This listing consisted of five tables containing lists of twenty-three new projects that have not yet been given safety categorisation; two new projects with safety categorisation; fifty projects in progress; six projects that have reached the practical completion stage and sixty-seven projects that have reached final completion.

Abnormal Occurrences at ANSTO's Nuclear Installations

6.28 The Regulatory Branch is notified of all abnormal occurrences at ANSTO's nuclear installations but only includes in this report those classified as Level 1 and above on the International Nuclear Event Scale (INES) as all others are of no safety significance. There were no Abnormal Occurrences classified as INES Level 1 or above notified by ANSTO in this quarter.

6.29 An abnormal occurrence was recorded when unauthorised persons entered the HIFAR protected area on 17 December. Two Regulatory Branch staff arrived at the protected area that morning and held discussions with the key response agencies. They were subsequently briefed by ANSTO on its discussions with the Commonwealth agencies handling security at the Lucas Heights site.

Inspection

6.30 Two Regulatory Branch officers visited HMAS Perth in Albany in response to a notification of radiological concerns associated with the proposed sinking of the vessel as an attraction for recreational divers.

6.31 A Regulatory Branch officer visited the Perth offices of Telstra in response to a request from the WA State Radiation Health Branch concerning surplus smoke detectors.

6.32 A Regulatory Branch officer visited the Australian Customs Service in Fremantle to review their arrangements for dealing with baggage X-ray and ionscan equipment.

7. International Liaison

7.1 From 29 October to 1 November, Silvano Colmanet attended the Autumn Technical

Training Program conducted for the Comprehensive Nuclear Test Ban Treaty Organisation.

7.2 Geoff Williams of the Environmental and Radiation Health Branch represented Australia at a meeting of the IAEA's Waste Safety Standards Committee from 15 to 19 October. Ches Mason chaired a meeting of the IAEA's Radiation Standards Committee in the same week, and attended a meeting of the Commission on Safety Standards from 26 to 28 November.

7.3 Peter Burns participated in an IAEA Expert Group that visited Kuwait in October to provide advice on the remediation of land contaminated by depleted uranium from armour-piercing munitions during the Gulf War.

7.4 Peter Gies was appointed to Technical Committee 6-53 of the International Commission on Illumination, Personal Dosimetry for UV Radiation, and provided input to the review of a draft document.

7.5 Alan Melbourne participated in an IAEA Peer Review of Regulatory Infrastructure in the Phillipines from 3 to 7 December. The Review Team report on its findings will be forwarded to the Phillipine government by the IAEA after an opportunity for comment by the Phillipines regulatory authorities that were reviewed. Ches Mason participated in a similar Peer Review in Thailand from 5 to 9 November.

7.6 Between 5 and 10 November, David Webb was a delegate at the 17th General Assembly of the Asia Pacific Metrology Program and 2nd Workshop of the Technical Committee for Ionizing Radiation, at the Advanced Institute of Science and Technology/National Metrology Institute of Japan.

7.7 November also saw the Ionizing Radiation Standards Section perform irradiations of personal dosimeters for the third IAEA/Regional Cooperative Agreement Intercomparison for Individual Monitoring, coordinated by the Japan Atomic Energy Research Institute. The Section also took part in the APMP/TCRI Asian regional intercomparison of medium X-ray qualities using a pair of graphite ionisation chambers provided by the Taiwan Institute of Nuclear Energy Research Laboratory.

7.8 David Webb spent two days in December at the National Radiation Laboratory in Christchurch, New Zealand. He was part of the audit team from Bureau Veritas Quality International reviewing the management quality system that was the basis of the application by the National Radiation Laboratory for ISO 9001:2000 certification.

7.9 Regulatory Branch provided expert service to the IAEA by accomplishing the following assigned duties at the Phillipines Nuclear Research Institute:

- Advising and assisting regulatory staff in the identification and establishment of regulations, regulatory guides and other relevant documents in licensing of a medical cyclotron facility and other particle accelerator facility;

- Advising and assisting regulatory staff in the identification and establishment of programs and procedures for inspection and enforcement of a medical cyclotron

facility and other particle accelerator facility;

- Training the regulatory staff through seminar/workshops on the licensing and safety aspects of a medical cyclotron facility and other particle accelerator.

John Loy
CEO
8 February 2002