



Australian Government

**Australian Radiation Protection
and Nuclear Safety Agency**

**QUARTERLY REPORT
OF THE
CHIEF EXECUTIVE OFFICER
OF ARPANSA
FOR THE PERIOD 1 APRIL 2008 TO 30 JUNE 2008**



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and Nuclear Safety Agency**

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Further Information About This Publication

If you would like to know more about the content of this publication please contact ARPANSA's Manager Policy and Security of Sources on 1800 022 333 or e-mail at info@arpansa.gov.au. Further information about ARPANSA can be found on the Agency's website at www.arpansa.gov.au.

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Letter of Transmittal

13 August 2008

Senator the Hon Jan McLucas
Parliamentary Secretary to the Minister
for Health and Ageing
Parliament House
Canberra ACT 2600

Dear Parliamentary Secretary

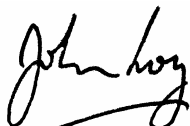
The *Australian Radiation Protection and Nuclear Safety Act 1998* (the Act) requires the Chief Executive Officer of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) to submit to the Minister, at the end of each quarter, a report on:

- the operations during the quarter of the CEO, ARPANSA, the Radiation Health and Safety Advisory Council (the Council), the Nuclear Safety Committee (the NSC) and the Radiation Health Committee (the RHC);
- 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 Council and the NSC under paragraph 20(f) or 26(1)(d) of the Act; and
- a list of facilities licensed under Part 5 of the Act.

I am pleased to provide you with a report, meeting the requirements of the Act, covering the period 1 April to 30 June 2008.

As you would be aware, Section 60(6) of the Act requires you to cause a copy of the report to be laid before each House of the Parliament within 15 sitting days of the day on which this report was given to you.

Yours sincerely



John Loy
CEO of ARPANSA

Report on the operations of the CEO and ARPANSA

The report on the operations of the CEO and ARPANSA is based on the agency's three output groups:

- knowledge, information and services;
- national leadership in radiation protection and nuclear safety; and
- regulation.

Knowledge, information and services

Non-ionizing radiation

ULTRAVIOLET RADIATION (UVR)

ARPANSA continues to work on proposed national regulation of solaria. In support of the proposed regulation, ARPANSA is developing web-based training for solarium operators. An advertisement seeking expressions of interest for a consultancy to develop the training was released and 13 responses were received. These are now being reviewed to select a consultant.

ARPANSA provided further input to Standards Australia Committee CS64 Solaria during a number of teleconferences in April and May, with sufficient progress to allow the new revised draft standard to go to public comment stage in June. Further visits by ARPANSA officers to measure outputs of solaria continued to provide valuable input into the CS64 deliberations, as well as for a collaborative publication with the Queensland Institute Medical Research on the impacts of solaria use in Australia. Both papers on the health impacts of solaria done by the Queensland Institute of Medical Research in collaboration with ARPANSA staff have been accepted for publication.

A collaborative study on the UVR occupational exposures of lifeguards with Emory University in the US has been completed. Analysis of the data has also progressed and a manuscript drafted for submission to a scientific journal. Another collaborative study with the Australian Antarctic Division on occupational UVR exposures of Antarctic expeditioners has also been completed. Preliminary analysis, which is currently underway, indicates that 90% of the subjects were exposed to very significant levels of solar UVR while working at the Antarctic stations.

A collaborative publication with University of Hawaii covering a pilot study of the ultraviolet radiation exposures and sun protection practices among lifeguards, parents and children has been published in the Journal of Photochemistry and Photobiology.

ARPANSA UVR data for Australia continues to be displayed live on the internet for Melbourne, Sydney, Darwin, Adelaide, Brisbane, Townsville, Newcastle, Kingston (outside Hobart) and Perth. It is planned to add Alice Springs and possibly Canberra before the summer of 2008/09.

ARPANSA continues to handle numerous requests for information on UVR from the public, industry, universities and state cancer councils. These requests relate to UV data for Australia, auto windscreen tinting and UV blocking, sunglasses and their labelling, artificial UV sources, UV photodegradation of polymers, UVR laboratory safety issues, UVR meters, compact fluorescent lights (CFLs) and intense pulsed light sources (IPLs).

ELECTROMAGNETIC RADIATION (EMR)

Although no formal meetings of the working group preparing the standard on exposure on extremely low frequency electric and magnetic fields were held, some Melbourne based members of the working group met on several occasions to incorporate part of previously agreed changes into the draft document and to prepare briefing notes for the consultant drafting the revised regulatory impact statement. The updated draft will be presented to the Radiation Health Committee at its July meeting.

ARPANSA provided information to state and Australian government agencies and to the public and media regarding EMR and health. The most common category of enquiries were in regard to possible health effects of magnetic fields from electricity distribution, particularly high-voltage transmission lines and sub-stations or transformers. Enquiries about measuring magnetic fields from electrical equipment and installations were also common. Other subjects of enquiries included microwave ovens, computers, computer servers and wireless technologies. Mobile phone base stations continue to be of concern to members of the public.

PUBLICATIONS

O’Riordan D.L., Glanz K., Gies P. and Elliott T. A Pilot Study of the Validity of Self-reported Ultraviolet Radiation Exposure and Sun Protection Practices Among Lifeguards, Parents and Children. *Photochem Photobiol* 84: 774-778, 2008.

L. Gordon, N. Hirst, P. Gies and A.Green. "What impact would effective solarium regulation have in Australia?" *Med J Aust* (in press) 2008.

Kathryn L. Hatch, Linda Block, and Peter Gies. Photoprotection by Fabric. In: *A Clinical guide to Sunscreens and Photoprotection* (Henry Lim and Zoe Draelos Eds.) Accepted for publication, due February 2009.

Hirst N., Gordon L.G., Gies P., Green A.C. Estimation of avoidable skin cancers and cost-savings to government associated with regulation of the solarium industry in Australia. *Health Policy* (in press) 2008.

Medical radiation

RADIATION IN HEALTH CARE – SAFER AND BETTER USE

Preparation for the delivery of the Elekta Synergy linac facility has commenced with re-alignment of the internal walls of the bunker. The CEO has exempted the medical linac from the need to apply for siting and construction licences, but the application for a licence to operate is still being considered. ARPANSA staff visited radiotherapy centres during the quarter to observe the installation and commissioning of new linacs.

ARPANSA staff attended the World Health Organization (WHO) *Global Initiative – Radiation Safety in Health Care Settings* inaugural meeting in Geneva on 26-27 June 2008. The purpose of the *Global Initiative* is to advocate the safe use of radiation in medicine and to promote radiation safety culture in health care settings in order to protect patients, health workers and the general public.

PERSONAL RADIATION MONITORING SERVICE (PRMS)

The ARPANSA PRMS has continued to offer a comprehensive radiation monitoring service for persons who may be exposed to ionizing radiation as a consequence of their occupation. A service is also provided for the measurement of radon and natural background radiation levels.

A number of enhancements to the PRMS database application of the new PRMS System were completed and implemented.

IONIZING RADIATION STANDARDS (IRS) – CALIBRATION SERVICES

In the therapy dosimetry audit program, audit reports have been completed and delivered to four radiotherapy providers - William Buckland Radiotherapy Centre, Wesley Radiation Oncology, WP Holman Clinic (Hobart) and Radiation Oncology Queensland. A total of 8 beam outputs and 4 beam qualities were audited for these centres. There are currently three more centres participating at various stages of completion.

A comparison of the ^{192}Ir calibration coefficients for an ionization chamber calibrated at ARPANSA and the National Physical Laboratory (NPL) in the UK was carried out in collaboration with the Peter MacCallum Cancer Centre. The results, which indicated good agreement between ARPANSA and NPL, were submitted for publication in June 2008.

Two international suppliers of a teletherapy cobalt source complete with housing were identified and quotes obtained for supply and installation. Removal of the existing source and transport to ANSTO is required. A satisfactory solution has been found based on a modified Theratronics Eldorado 78 therapy head and an order placed. Delivery will occur around October this year. The safe transfer of the old source will require a suitable overpack to be leased for temporary use.

The existing linac has been used intensively by the CSIRO Minerals Division for much of the quarter to conclude their feasibility studies of mineralisation of ore samples by photo-activation. X-ray beams between 12 and 15 MV were used employing a precise beam centering system developed by CSIRO. High dose rates up to 3 Gy/min were achieved. This activity on the linac was followed by a low dose (5-8 Gy) 10 MV irradiation for Swinburne University to study the mobility of radicals in leucocytes and astrocytes that might act as a reference for the effects of non-ionizing radiation.

RADIOPHARMACEUTICAL

The annual technical report *Results of the Quality Assurance Testing Program for Radiopharmaceuticals 2007* was published on the ARPANSA website in April 2008.

Environmental Radiation

HEALTH PHYSICS

Monitoring and Surveillance Group

The Health Physics Modelling and Surveillance Group maintains scientific expertise, modelling and analysis tools and measurement facilities to provide advice on the protection of members of the public, workers and the environment.

A brief review was undertaken for the Australian Broadcasting Corporation on the radiological surveys conducted by Queensland Health prior to and after the remediation of Lot 246 on Ross Street Precinct, Newstead.

ARPANSA staff gave a seminar and answered questions on the topic of radiation protection in the uranium mining industry at a Uranium Open Day held in Adelaide on 20 June aimed at informing the public about the mining, processing, use and disposal of uranium.

Advice was provided to the Victorian Department of Primary Industries on the health impact of radiation exposure for workers and members of the public to the long term application of fertilizers containing elevated levels of radioactivity. A review of international assessments indicated that the additional dose received is small in comparison to natural background levels found in soil and food.

The Radon Calibration Laboratory provided 14 radon-222 standard exposures for calibration of the ARPANSA radon dosimetry service maintained by the Personal Radiation Monitoring Service (PRMS). The radon calibration service was suspended in June to upgrade electronics to resolve equipment problems. It is anticipated that the service will be re-activated in the fourth quarter of 2008.

Emergency Preparedness

The software system, ARGOS (*Accident Reporting and Guidance Operational System*) is a Decision Support System for Chemical Biological Radiological and Nuclear (CBRN) Emergencies. ARPANSA is coordinating a national project to evaluate the suitability of ARGOS for Australian CBRN emergency planning. ARPANSA has successfully distributed, installed and provided training for ARGOS software to over 20 users from 11 state and federal government agencies. A two-tiered questionnaire including initial requirements and a formal evaluation has been distributed to users.

The project manager for ARGOS development from the ARGOS consortium based in Denmark spent a week at ARPANSA from 2 to 6 June. This visit enabled the installation of an ARGOS upgrade on a server-client setup at ARPANSA, along with the ability to export information to an internal web server. To support ARGOS, the Bureau of Meteorology now provides meteorological data coverage over Australia to ARPANSA (and ARGOS users) on a continuous basis.

ENVIRONMENTAL RADIOACTIVITY

ARPANSA performed an independent technical audit of the radioactive waste disposal activities at the Mt Walton East Intractable Waste Disposal Facility for the

Department of Housing and Works (WA). The audit entailed a visit to the Mt Walton East facility during the June 2008 burial campaign, discussions with the facility operator (Department of Housing and Works) and their contractors, and discussions with the regulator (Radiation Health - WA). The audit was performed in accordance with and against the requirements of the Code of Practice for the Near-Surface Disposal of Radioactive Waste in Australia (1992).

A draft Safety Guide for Predisposal Management of Radioactive Waste being developed through the Radiation Health Committee (RHC) was modified incorporating comments received during the public comment phase. The guide will be submitted to the July meeting of the RHC for approval.

The public comments on the Safety Guide for the Management of Naturally Occurring Radioactive Material were used to review the consultation draft and a final draft has been prepared for RHC approval at their July meeting.

New alpha spectrometers have been commissioned into operation, increasing ARPANSA's capacity to develop methods utilising alpha spectrometry.

As part of its quality assurance program, ARPANSA took part in two proficiency tests of its radioanalytical services during the quarter. The proficiency test results were all within acceptance limits.

Services

Following the occurrence of several cases of brain cancer among Queensland Fire and Rescue Service (QFRS) officers at the Atherton Fire Station, ARPANSA was asked by the Queensland Department of Emergency Services to undertake measurements of ionising and non-ionising radiation levels as part of an overall environmental assessment. Measurements were conducted 17-18 April and included levels of extremely low frequency (ELF) magnetic fields, radiofrequency signals from external sources, vehicle and personal radios, levels of radon gas and exposure rates from gamma-rays. Levels of radiofrequency EMR from vehicle and personal radios were measured to be lower than the limits in relevant standards. The report on the measurements concluded that levels of ionising radiation and extremely low frequency magnetic fields were low by residential standards.

As part of the on going requirements of accreditation by the National Association of Testing Authorities, the quality systems of the Radiofrequency Calibration Service, the Ultraviolet Protection Factor Testing and other services provided by ARPANSA, was assessed during a 3 day surveillance visit from 24 to 26 June 2008. Following the visit ARPANSA will be notified of any issues requiring attention.

Statistics on the outputs of ARPANSA's services are located in the Annex.

Public communications activities

ARPANSA convened a meeting of the Electromagnetic Energy Reference Group on 16 May in Sydney to discuss ARPANSA activities and community concerns regarding EMR in the environment. Of particular interest were the Australian standards on exposure to EMR and the regulatory framework for assuring compliance.

Information from the meeting is used to guide the preparation of public information on these issues and to help plan measurement programs.

In the reporting period, there were 276,689 visitors to the ARPANSA website. The most popular web pages were radiation and health information sheets, particularly those concerning mobile phones.

Visitors downloaded 53,788 documents predominantly from the ARPANSA Radiation Protection series which can be found at: <http://www.arpansa.gov.au/Publications/codes/rps.cfm> and the Radiation Health Series which can be found at: <http://www.arpansa.gov.au/Publications/codes/rhs.cfm>. The most frequently downloaded single page was our factsheet about measuring magnetic fields http://www.arpansa.gov.au/pubs/factsheets/mag_fields.pdf.

National leadership in radiation protection and nuclear safety

Comprehensive Test Ban Treaty – air sampling monitoring systems

As part of Australia's commitment to the Comprehensive Nuclear-Test-Ban Treaty, ARPANSA continued to operate and maintain radionuclide air monitoring stations at Melbourne, Perth, Townsville, Darwin, and the Cocos Islands, Australia. The two remaining stations to be installed are located at Macquarie Island and Mawson, Antarctica. Negotiations are continuing with the Comprehensive Nuclear-Test-Ban Treaty Organisation (CTBTO) on the timetable for the installation of the radionuclide air monitoring stations at Macquarie Island and Mawson.

In March 2008, a Request for Quotation (RFQ) was issued by CTBTO for the installation of a new HPGe detector and the replacement of various station equipment at the Kavieng station, PNG. ARPANSA submitted a response to this RFQ, and is currently waiting on a reply from CTBTO.

In June 2008, a one week CTBTO Technical Training Programme for Radionuclide Station Operators at AMETEK-ORTEC in Oak Ridge, Tennessee, USA was undertaken by ARPANSA staff.

National Uniformity

The main vehicle for the promotion of national uniformity of radiation protection throughout Australia is the National Directory for Radiation Protection which is an ARPANSA publication that is jointly developed by ARPANSA with the State and Territory jurisdictions through the Radiation Health Committee (RHC).

The RHC decision to progress the Directory through individual amendments rather than a consolidated edition 2 was implemented and the first amendment, to include eight Codes and Standards published since edition 1 of the Directory, was forwarded to AHMAC for endorsement out of session. A further amendment which covers exclusions and exemptions (Amendment 2) was released for public comment and four submissions were received. An amended draft of the exclusions and exemptions will be considered at the July 2008 RHC meeting. Additional amendments on user disposal of low level radioactive waste, use of lasers and intense pulsed light sources

on humans, and solaria have been prepared, and will be released for public comment when all relevant regulatory impact assessments have been completed.

International Activities

ARPANSA officers attended the following international events:

- several non ionising radiation meetings in Europe:
 - a workshop on childhood leukaemia, sponsored by World Health Organisation (WHO), International Commission on Non-Ionizing Radiation Protection (ICNIRP) and the Federal Office for Radiation Protection (BfS) in Berlin, Germany on 5-7 May. The Workshop on “Risk Factors for Childhood Leukemia” addressed the increased incidence of childhood leukaemia observed in epidemiological studies of exposure to low-level magnetic fields or near nuclear facilities. The epidemiological findings were considered in the light of possible risk factors and of new data on the origin of childhood leukaemia;
 - an ICNIRP ELF Task Group (TG ELF) meeting at Health Protection Agency, UK on 13-14 May. The Group undertook a further review of the TG ELF draft guidelines. The document will be presented at the next meeting of the ICNIRP Commission;
 - the Annual Meeting of the International Advisory Committee of the WHO International EMF Project on 19-20 June as chairperson. Delegates from more than 40 countries and international agencies discussed issues related to health and EMF exposure;
 - the Final Conference of the German Mobile Telecommunication Research Programme in Berlin on 17-18 May. The final results from the €17 million multiyear program were presented;
- Nuclear Reactor Severe Accident Analysis training course held from 7-11 April 2008 in Budapest, Hungary. The training course was organised by the EU-SARNET and Nuclear Energy Agency, and provided valuable learning opportunities in nuclear reactor design, accident analysis and accident management;
- the 25th Meeting of Waste Safety Standards Committee (WASSC) at the IAEA in Vienna, April 2008 to review several documents of relevance to Australia under preparation. and
- IAEA Nuclear Safety Standards Committee in Vienna from the 14 - 16 May. The purpose of this committee is the promotion of uniform international standards in nuclear safety;
- the 6th International Conference on Isotopes during 12-16 May 2008, Seoul, Korea. An ARPANSA officer presented a paper entitled “Safety Evaluation for Regulatory Management of Australian Radioisotope Production facilities’. The conference provided valuable information on radioisotope production and emerging issues to be considered in the regulatory process;
- an international conference on Radiation Protection in Military Operations, Ottawa, Canada, 3-5 June 2008. The main objectives of the conference were to promote information exchange among military and civilian department of defence radiation protection professionals and regulators of military ionizing radiation

activities and to identify emerging radiation protection techniques, technologies, trends, and management approaches of interest to militaries;

- Regional Workshop on Denial of Shipment of Radioactive Material for Asian Countries during 11-13 June, 2008, Beijing, China. An ARPANSA officer presented an 'Overview of Australian System for Considering Denial'. The ongoing issues related to denials, their impact and possible solutions were discussed at this workshop;
- the 5th Plenary Meeting of the IAEA Safety Assessment Driving Radioactive Waste Management Solutions (SADRWMS) project as the chairperson. The meeting was held in Croatia in the last week of June. The IAEA SAFRAN software tool for guiding safety assessment of radioactive waste management including long-term storage facilities was further developed based on test cases from around the world. This knowledge will be valuable for developing options for managing and storing Australia's radioactive waste, and for regulatory assessment of waste management facilities and processes in Australia.

In April, ARPANSA officers formed part of and led the Australian delegation to the fourth Review Meeting on the Convention on Nuclear Safety. The meeting provided an opportunity for peer review of participating countries' reports on their nuclear safety policy and practice, including regulatory, operational and emergency preparedness aspects. Participation in the meeting provided an opportunity to examine Australian nuclear safety policy and practice in the light of current and emerging trends in international best practice.

Australia's report was well received. ARPANSA's shift from prescriptive to a more outcomes-based approach to regulation and the development of a set of regulatory performance indicators were recognised as internationally good practices. Establishing and maintaining sufficient and adequate nuclear expertise in a global market where demand is high was identified as a challenge by many participating countries, including Australia.

The CEO attended a meeting of the IAEA Commission on Safety Standards from 21 - 23 May.

Regulation of the Commonwealth's uses of radioactive material, apparatus and facilities

Regulatory process and performance

LICENCE HOLDER FORUM

The 2008 ARPANSA Licence Holder Forum was held on 12 June 2008 at the Department of Defence's St Kilda Road Victoria Barracks. The Forum was well attended by representatives of Licence holder organisations. The Forum identified several changes and key areas of improvements to licensing requirements and the regulatory system.

The morning sessions of the forum focused on information sessions delivered by ARPANSA staff. These included presentations on changes to regulatory management systems, implementation timetable for the Code of Practice for Security of

Radioactive Sources and key lessons from the 2007-2008 inspection program. Key areas for improvement for licence holders identified by ARPANSA inspectors were:

- management of source inventories to ensure correct identification of location, categorisation of sources and awareness of the requirements of source disposal and source transfer;
- quality of licence holder quarterly reports need to be improved and submitted within the period required by the licence condition (28 days from the end of each quarter);
- need for focus on training records including those for external contractors;
- plans and arrangements must be reviewed annually and the outcome of the review reported to the CEO of ARPANSA; and
- licence holders should ensure conformance with Codes and Standards, included warning signs and labels inappropriately placed or not present, or use of non-standard warning signs.

The afternoon session included best practice regulatory initiatives from licence holder representatives. The session covered governance arrangements (Department of Defence), extension of recommended working life of a radiation source (CSIRO) and safety management systems (ANSTO). All presentations from the Forum are available on the ARPANSA web site.

QUALITY MANAGEMENT

ARPANSA is revising and improving the regulatory quality management system to ensure that the regulatory processes are managed according to a comprehensive quality management system (QMS) which meets the ISO 9000 standard.

A quality committee is in place and is meeting each month to ensure suitable progress for this review. Quality Committee meetings were held in April, May and June 2008 and significant progress was made on the Scope of Services, Management of Services documents and identification of policies and procedures that require updating.

REGULATORY KEY PERFORMANCE INDICATORS (KPI'S)

The techniques for collecting the performance data from the new Regulatory Management Information System are being progressively refined to ensure the accuracy and completeness of the data collected.

The progressive performance against the targets for each quarter of this year is reported in the following table as an indication of the comprehensiveness of the performance measurement process.

PROGRESS AGAINST KPI'S 2007/2008

Measure	Sept 2007	Dec 2007	March 2008	June 2008	Annual Target
<i>Effectiveness</i>					

Measure	Sept 2007	Dec 2007	March 2008	June 2008	Annual Target
1. Accidents/incidents that must be reported within 24 hours	0	0	0	0	< 5
2. Potential accidents/incidents	12	4	0	5	< 40
3. Percentage of actual accident/incidents reported by licence holders	100%	100%	100%	100%	> 80%
4. Non-compliances (breaches)	0	3	2	2	< 40
5. Percentage non-compliances reported by licence holders	NA	0%	100%	Note a	> 80%
6. Applications for Licence	3	3	4	5	-
7. Percentage licence applications accepted as valid	100%	100%	100%	100%	> 80%
8. Percentage assessment reports for applications for licence	100%	100%	100%	100%	100%
9. Percentage correct decisions for licence applications	100%	100%	100%	100%	100%
10. Requests for Approval (Regs 51, 53, 54, 55)	10	5	8	14	-
11. Assessment Reports	6	9	9	0	-
12. Percentage positive decisions for requests for approval	100%	100%	100%	100%	>80%
13. Inspection Reports	9	9	7	23	> 80
14. Licence Holder Compliance Reports	86	87	96	96	-
15. Percentage licence Holder Compliance Reports received on or before due date	Note a	Note a	Note a	79%	> 80%
Efficiency					
16. Percentage of ministerial responses meet target date set in agreement with Department	100%	100%	100%	95%	> 80%
17. Number of inspection and assessment reports per staff member (14 inspectors)	1	1.3	1.1	1	> 10
18. Expenditure/budget	<100%	<100%	<100%	<100%	< 100%
19. Revenue/budget	Note a	Note a	Note a	Note a	100%
20. Percentage staff training completed (%)	>80%	>80%	>80%	.80%	> 80%

Measure	Sept 2007	Dec 2007	March 2008	June 2008	Annual Target
21. Time to provide requested information to stakeholders	Note a	Note a	Note a	Note a	< 30 days
22. Average time to report inspections	38 days	81 days	76 days	43 days	< 30 days
23. Time to review Licence Holder Reports	Note a	Note a	Note a	Note a	< 30 days
24. Time to review Applications for Licence	Note a	133 days	93 days	Note a	< 60 days
25. Time to review requests for approval (Regs 53, 54, 55)	75 days	1 day	8 days	2 days	< 30 days
26. Time to review requests for approval (Reg 51)	75 days	26 days	110 days	73 days	< 60 days
27. Time to complete investigation of incidents/accidents	Note a	Note a	NA	Note a	< 60 days
28. Time to complete investigation of non-compliances	NA	Note a	Note a	Note a	< 60 days
Stakeholder Satisfaction					
29. Satisfaction Surveys – Overall Service	Note a	Note a	Note a	73%	> 80%
30. Complaints	0	3	0	0	< 20
31. Compliments/commendations	0	1	0	0	> 5
32. Reports to ARPANSA Executive as planned	100%	100%	100%	100%	100%
Enforcement					
33. Educational, awareness, information sessions and short presentations for licence holders	0	0	0	1	> 3
34. Corrective measures	Note a	Note a	Note a	Note a	> 40
35. Formal Directions	0	0	0	0	> 0
36. Percentage suspensions and cancellation of licences	0	0	0	0	> 0%

Notes

- a. Regulatory processes being further developed to capture these measures

The annual targets were derived based by estimation only. They will be progressively refined over time as actual data is collected and trends can be determined.

Regulatory Activities

The CEO of ARPANSA is responsible for regulating all radiation and nuclear activities undertaken by Australian Government entities and contractors who undertake such activities for or on behalf of Australian Government entities.

ARPANSA officers assist the CEO to implement the regulatory scheme set out in the ARPANS legislation in particular by providing assessments and advice in connection with applications for source and facility licences under the ARPANS Act, including whether or not a licence should be issued, authorising dealings with radiation sources and conduct undertaken in relation to facilities, both prescribed radiation facilities and nuclear installations.

Monitoring compliance with the ARPANS legislative scheme for regulation, including by undertaking inspections and providing advice to the CEO on findings of breach of the Act and any subsequent recommendation as to enforcement action, is a major output of ARPANSA. Compliance monitoring includes the review of compliance reports submitted by licence holders.

On 1 May 2008, the CEO of ARPANSA approved ANSTO's proposed modification of the design of the fuel used in the OPAL reactor. The request for approval follows an incident in July 2007 where a number of reactor fuel plates were dislodged from their original positions in the reactor core. A Section 61 report was attached to the Quarterly Report for the period ending 31 March 2008. The report is an assessment of an application from ANSTO seeking approval for a modified design of fuel. The submission underwent detailed and thorough assessment by ARPANSA staff with the assistance of local and overseas experts and advice from the independent Nuclear Safety Committee. The CEO's decision and statement of reasons under Section 61 of the ARPANS Act was tabled on 17 June 2008.

INSPECTIONS - UNANNOUNCED

Licensee	Licence Number	Location
ANSTO	FO044-4A	HIFAR Reactor, LHSTC, Sydney

INSPECTIONS - ANNOUNCED

Licensee	Licence Number	Location
ANSTO Institute of Environmental Research	F0134	2MV STAR Accelerator, LHSTC
ANSTO Institute of Environmental Research	F0044-6Ba	ANTARES Accelerator, LHSTC
ANSTO Institute of Environmental Research	F0044-6Bb	3MV Van de Graaff Accelerator, LHSTC

Licensee	Licence Number	Location
ANSTO Radiopharmaceutical Research Institute	F0044- 5A,5B,5C	Buildings 19 and 76 Research & Development Laboratories, LHSTC
ANSTO	F0157	OPAL Reactor, LHSTC, Sydney
ANSTO	FO044-6A	MOATA, LHSTC, Sydney
ANSTO	F0157	CERCA, France
Australian Customs Service	F0156	Pallet X-ray facility, Osborne, SA
Australian Customs Service	S0092	Pallet X-ray unit, Brisbane, QLD
Australian Customs Service	F0136	Container Examination Facility, Brisbane, QLD
Australian Federal Police	S0056	Adelaide airport and Currie Street office, Adelaide, SA
Australian National University	F0073	Rutherford Backscatter Accelerator, Canberra, ACT
Australian National University	F0074	Heavy Ion Accelerator, Canberra, ACT
Australian National University	F0075	High Energy Implanter, Canberra, ACT
CSIRO Exploration and Mining	S0061	QCAT, Brisbane, QLD
Defence	S0042	DSTO, Fisherman's Bend, Vic
Defence	S0042	Joint Proof and Experimental Unit, Graytown, Vic

INSPECTION REPORTS ISSUED

Licensee	Report number	Inspection
ANSTO	RB-INS- R08/05475	HIFAR Reactor Status and Maintenance
ANSTO	RB-INS- R08/03144	MOATA Annual Inspection of Facility

Licensee	Report number	Inspection
ANSTO-ARI	R08/02566	ARI Building 23, LHSTC
ANSTO-ARI	R08/02432	ARI Building 23A, LHSTC
ANSTO-ARI	R08/02775	National Medical Cyclotron, Camperdown
Australian Customs Service	R08/04107	Container Examination Facility, Fisherman's Bend, QLD
Australian Customs Service	R08/03261	Container Examination Facility, Fremantle, WA
Australian Customs Service	R08/03640	Pallet X-ray unit, Fremantle, WA
Australian Defence Force	R08/02843	Airflite Pearce, RAAF Pearce, WA
Australian Defence Force	R08/01957	Base Armament Unit, RAAF Pearce, WA
Australian Defence Force	R08/02653	79 Squadron, RAAF Pearce, WA
Australian Defence Force	R08/04098	Facilities Support Unit, HMAS Stirling, WA
Australian Federal Police	R08/03968	Perth airport, WA
Australian National University	R08/03765	John Curtin School of Medical Research, ACT
Australian National University	R08/03631	Research School of Biological Sciences, ACT
Australian National University	R08/03760	Research School of Physical Sciences and Engineering, ACT
CSIRO Entomology	R08/01323	Black Mountain, ACT
CSIRO Forest Biosciences	R08/02631	Clayton, Vic
CSIRO Industrial Physics	R08/04720	West Lindfield, NSW
CSIRO Materials Science and Engineering	R08/02630	Clayton, Vic
CSIRO Minerals	R08/04409	Lucas Heights, NSW
CSIRO Molecular and Health Technologies	R08/05406	North Ryde, NSW
CSIRO Molecular and Health Technologies	R08/02632	Clayton, Vic

LICENCE APPLICATIONS

Licensee	Licence Number	Type
ANSTO-Institute of Environmental Research	A0200	Facility- Decommissioning
PetNet Australia Pty Ltd	A0201	Facility-Construction
Australian Nuclear Science and Technology, Bragg Institute	S0171	Request to amend licence S0171 for WOMBAT and ECHIDNA instruments to cover operation without limitations
CSIRO Human Nutrition	S0038	Request to amend licence S0038 to deal with DEXA apparatus
Department of Infrastructure, Transport, Regional Development and Local Government	A0199	X-ray backscatter body scanners

REGULATION 51 REQUESTS FOR APPROVAL (RECEIVED)

Licensee	Number	Type	Comment
ANSTO	F0157	Facility	E0051 – OPAL Reactor - Modification of Containment Energy Removal System – System Logic
ANSTO	F0157	Facility	E0092 – OPAL Reactor - Modification of Containment Energy Removal System – System Logic
ANSTO	F0157	Facility	E0103 – OPAL Reactor – Change to Operating Limiting Condition – Emergency Control Centre Pressurisation
ANSTO-ARI	F0044-5A,5B,5C	Facility	Additional three hot commissioning runs as part of the hot commissioning of Mo-99 production plant
ANSTO-ARI	F0044-5A,5B,5C	Facility	Design & construction of radioactive liquid waste tank

Licensee	Number	Type	Comment
			external to Mo-99 facility
ANSTO-ARI	F0044-5A,5B,5C	Facility	Primary Exhaust HEPA filter upgrade for B54 Active Ventilation System
Australian Customs Service, Brisbane neutron scanner	F0187	Facility	Request received to dispose of low activity waste to landfill
Australian Defence Force, Port Wakefield linear accelerator, SA	F0166	Facility	Application to temporarily relocate linear accelerator received
Australian National University	S0027	Source	Change in area administration between the Faculty of Science and the Research Schools

REGULATION 51 APPROVALS

Licensee	Number	Type	Comment
ANSTO	F0157		E0083 – OPAL Displaced Fuel Plate Event and Fuel Design Modification
ANSTO	F0157		E0103 – OPAL Reactor – Change to Operating Limiting Condition – Emergency Control Centre Pressurisation
ANSTO-WOTD	FO0044-WOTD	Facility	Extension of rail of an overhead crane in Building 27
ANSTO-ARI	F0044-5A,5B,5C	Facility	Additional three hot commissioning runs as part of the hot commissioning of Mo-99 production plant
ANSTO-ARI	F0044-5A,5B,5C	Facility	Design, installation and commissioning of shielded pipe work in Building 54
ANSTO Fuel Operations	FO0044-4C	Facility	A change to operating limits and conditions-increase in the licensed activity level for the Building 23C Gamma Irradiation Pond

Licensee	Number	Type	Comment
ANSTO Institute of Environmental Research	F0134	Facility	A change to operating conditions-unattended operation of the 2MV STAR Accelerator
ANU, Research School of Physical Sciences and Engineering	S0027	Source	Approval to deal with fully enclosed X-ray analysis apparatus given

ISSUED OR AMENDED LICENCES

Licensee	Number	Type	Comment
Australian Communications and Media Authority	S0172	Source	Licence surrendered
Australian Customs Service	F0162	Facility	Brisbane neutron scanner facility operating licence surrendered
Australian Nuclear Science and Technology Organisation	S0045	Source	Schedule 1 amended
CSIRO Forest Biosciences	S0054	Source	Licence amended twice in quarter – organisational name change and amendment to Schedule 1
CSIRO Human Nutrition	S0038	Source	Schedules 1 and 2 amended to include DEXA apparatus
Department of Health and Ageing Mersey Hospital, Tasmania	S0191	Source	Licence to deal with medical X-ray apparatus
Note Printing Australia	S0033	Source	Schedule 1 amended

TRANSPORT OF RADIOACTIVE MATERIAL

The CEO of ARPANSA, is the competent authority for transport of radioactive material by road and rail under the Code of Practice for the Safe Transport of Radioactive Material. Decisions made during the quarter were:

- two approvals of transport of fresh nuclear fuel from Sydney Airport to ANSTO in three separate shipments; and
- approval of shipment of a Co-60 Gamma Irradiator from Sydney University to ANSTO under special arrangements.

Report on the operations of the Radiation Health and Safety Advisory Council, the Radiation Health Committee and the Nuclear Safety Committee

Radiation Health and Safety Advisory Council

The Council met at the Stamford Hotel, Adelaide on 11 April 2008. A summary of Council's meeting is available on the ARPANSA web site at <http://www.arpansa.gov.au/AboutUs/Committees/rhsacmt.cfm>. On 10 April 2008, Council members attended a meeting with BHP Billiton staff regarding the Olympic Dam Expansion Project.

The main issues discussed at the meeting were:

- the consultant's report on the review of the effectiveness and efficiency of the National Directory for Radiation Protection. It was agreed that all jurisdictions would be given a chance to confirm the factual material related to their jurisdiction, the final report would then be provided to the Chair and Secretariat, and Council's advice to the CEO would be prepared;
- the CEO's response to its advice on the assessment of safety and development of nuclear power plants. The CEO informed Council that its advice is very helpful in assisting the public to grasp the issues relating to the safety of nuclear power plants. Council's advice and the CEO's response are on the ARPANSA web site at http://www.arpansa.gov.au/Publications/RHSAC/rhsac_stat.cfm#nuc;
- the adoption of the *Code of Practice for Radiation Protection in the Medical Applications of Ionizing Radiation*. Council recommended adoption and discussed progress on the development of the accompanying Safety Guides;
- a project plan to respond to the CEO's request for advice as to how ARPANSA should proceed in preparing regulatory guidance and advice to Government about the longer-term management and disposal of Australia's long-lived intermediate level waste;
- a briefing on the implications for Australia of the publication of new International Commission on Radiological Protection (ICRP) Recommendations (ICRP publication 103, 2007). The review concentrated on the likely changes needed to update Australia's radiation protection publications, particularly Radiation Protection Series No. 1;
- a presentation from Mr Keith Baldry, Director, SA EPA Radiation Protection Division informing the Council of current radiation protection activities in South Australia. Mr Rob Gaggini, Assistant Chief Radiographer, Flinders Medical Centre, attended to give a presentation on CT dose reduction techniques implemented at the centre; and
- reports from the CEO on ARPANSA activities and from the RHC and NSC.

Radiation Health Committee

The Radiation Health Committee did not meet during the quarter. The next meeting is scheduled for 16-17 July 2008.

Nuclear Safety Committee

The Nuclear Safety Committee (NSC) met on 20 June 2008 at ARPANSA's Miranda office. A summary of the meeting is available at www.arpansa.gov.au/AboutUs/Committees/nscmt.cfm.

During the June meeting, the Committee received an update on the progress of the OPAL Reactor, including the outcomes of the CEO deliberation of the application to approve the redesign of the fuel assemblies following the displaced fuel event. NSC also discussed other ongoing regulatory issues relating to the OPAL Reactor.

Other matters considered at the June meeting included:

- the current status of the preparation of HIFAR for decommissioning;
- an update on the decommissioning of Moata;
- the involvement of the Committee in future deliberations in relation to any application for a licence to deal with Australian long-lived intermediate level waste; and
- reports on recent Convention on Nuclear Safety and Nuclear Safety Standards Committee meetings attended by ARPANSA staff.

Also, as this was the second last meeting of this triennium of the NSC, members discussed:

- possible future directions and deliberations for the Committee; and
- the preparation and content of a triennium report.

Once completed, the triennium report would be placed on the ARPANSA web site.

Reports required by subsections 60 (2)-(5) of the Act

Details of directions given by the Minister under Section 16

No directions were given by the Minister under Section 16 of the ARPANS Act during the quarter.

Details of any breach of licence conditions by a licensee during the quarter, of which the CEO is aware

Breaches determined by the CEO

BREACHES DETERMINED BY THE CEO

Licensee	Number	Nature of breach	Action
CSIRO Forest Biosciences	S0054	s31(2) of ARPANS Act – failure to comply with licence conditions	Submission made to rectify the breach. No enforcement action necessary
Attorney General's D Branch	S0188	Breach of Regulation 53(1) – unauthorised disposal of X-ray equipment	No enforcement action necessary

Reports to the CEO from the RHSAC and NSC (paragraphs 20(f) and 26(1)(d) of the Act)

In May 2008, a report from the NSC was provided to the CEO in connection with the decision to approve the modification of the design of the fuel assemblies intended for use in the OPAL reactor. Details of this report were included in the quarterly report for the quarter ending 31 March 2008.

During this quarter, no reports from the RHSAC were provided to the CEO of ARPANSA.

In the report for the quarter ending 31 March 2008, it was erroneously reported under this heading that no directions were given by the Minister under Section 16 of the ARPANS Act during the quarter. The statement should have read that no reports from the RHSAC and NSC were provided to the CEO of ARPANSA during that quarter.

A list of all facilities licensed under Part 5 of the ARPANS Act

There were no new facility licences issued during the quarter.

Annex – Service Operations

1 *The Radiofrequency Calibration Laboratory*

Calibration Requests	Jobs completed as NATA accredited reports	Job composition
109	91	67 monitors (with 41 probes) 31 personal monitors

2 *Ultraviolet Protection Factor Testing, Licensing and Labelling*

Job requests	Fabric samples tested	UPF trademark licenses completed	UPF swing tags issued	Pairs of sunglasses tested
133	576	36	2 265 500	5

3 *Radioanalytical Service*

Water	Food	Soil/Sediment	Filter	Wipe test
172	25	15	84	65

Maypacks	Biota	Other
0	0	16

4 *Dosimetry Calibration Services*

Therapy reference dosimeters	Electrometers	Standard ionization chambers	Gamma survey meters	Neutron survey meters	Personal dosimeters	Reference beams from sources or generators	Jobs in progress
1	3	4	1	4	4	1	3

5 Import Permits issued under Customs (Prohibited Import) Regulations 1956 – Medical Radioisotopes

Total permits issued	Single-shipment permits issued	12-monthly permits issued	Permits issued urgently
137	125	9	3

6 Import Permits issued under Customs (Prohibited Import) Regulations 1956 – Non- Medical Radioisotopes

Total permits issued	Single-shipment permits issued	12-monthly permits issued	Permits issued urgently
175	53	7	115

7 Export Permits under Customs (Prohibited Export) Regulations 1958

Total Permits Issued	2
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