Safety Arrangements and Environmental Performance

ANSTO’s performance was efficient and effective in producing its principal outputs and outcomes.

Environmental Protection

ANSTO is committed to operating in a manner that protects the environment and is consistent with Australian and international standards. Environmental awareness is promoted throughout the organisation and ANSTO strives for continual improvement in environmental performance.¹

Environmental management system

To provide assurance that ANSTO is maintaining sound environmental protection practices, we maintain an environmental management system (EMS) that is certified to the International Standard ISO 14001. This standard requires that environmental risks and legal requirements are understood and managed, an appropriate measurement and review system is in operation, and that there is an organisational commitment to continual improvement. In addition all parts of our environmental monitoring program operate within a quality system certified to the ISO 9001:2000 standard for Quality Management Systems.

Environmental performance

Accurate measurements with independent verification

ANSTO’s environmental monitoring program includes measurements of radioactivity and some key non-radioactive materials in air and liquid emissions and in samples of air, surface- and ground-waters, sediment and biota from the local environment. General environmental radiation is also monitored and local weather patterns reported. Many monitoring capabilities are checked and independently verified.

¹ This section constitutes ANSTO’s report on its performance in relation to ecologically sustainable development and environmental matters as required under Section 516A of the Environment Protection and Biodiversity Conservation Act 1999.
Environmental monitoring in 2006-07 has confirmed that ANSTO’s releases of radioactive material into the environment continue to be at very low levels.

**Airborne doses low**

The levels of radioactivity released in air are too low to be directly measured away from the site. Computer modelling is therefore used to translate measurements into theoretical radiation doses to people at various distances from the site. The outcome of this modelling estimated that the maximum potential public dose derived from ANSTO in 2006-07 was 0.0020 mSv. This corresponds to less than 0.2 per cent of the 1.0 mSv annual limit for members of the public established by ARPANSA.

For the closest neighbours, ANSTO’s activities added less than 0.15 per cent to the average 1.5 mSv dose received by Australians from natural background radiation. During the year, the modern OPAL research reactor was opened and the nearly 50 year-old HIFAR research reactor was closed. These historic events have significantly reduced the contribution made by ANSTO’s nuclear reactor to the already tiny potential public dose of radioactivity from airborne emissions.

**Liquid effluent discharges within limits**

Effluent discharged from ANSTO into the sewer complied with all limits for radioactive discharges, in accordance with the Trade Waste Agreement with Sydney Water. Compliance with these limits ensures that water at the Cronulla sewage treatment plant meets World Health Organisation drinking water standards for radioactivity. During the year a review was initiated with Sydney Water of the Trade Waste Agreement limiting concentrations for non-radioactive materials, such as ammonia, zinc and total dissolved solids. The aim of the review is to provide assurance that ANSTO’s discharges remain within authorised limits and pose no threat to the environment.

**Good water quality**

ANSTO regularly monitors stormwater leaving the site, as well as sampling the nearby Woronora River. Results show that tritium concentrations remained below a level considered acceptable in Australian drinking water. Gross alpha and beta measurements were also below the levels required for stormwater/surface waters, following the NSW Protection of the Environment Operations Act 1997. In fact, more than 95 per cent of measurements were below the stricter screening levels from the Australian Drinking Water Guidelines (ADWG). ANSTO’s stormwater does not contribute to public water supply, but referring to the ADWG provides a useful context for understanding our data. Monitoring of groundwater at the Lucas Heights site showed no detectable ANSTO-produced radionuclides apart from very low levels of tritium.

**Detailed reporting**

The results and findings from our environmental monitoring program are available to the public in the annual report series *Environmental and Effluent Monitoring at ANSTO Sites*, and summarised in ANSTO’s Corporate and Social Responsibility report available through the website.

ANSTO also reports annually to the Department of Environment and Water Resources about any activities that fall under...
the National Environmental Protection Measures. Overall, ANSTO commits significant resources to effectively monitor, manage and report on its environmental impacts and responsibilities.

**Ecologically sustainable development (ESD)**

ANSTO’s commitment to environmental protection and sustainability principles is embedded at the highest level. The organisation has defined strategic directions which inform its social, economic and environmental core values. These priorities are integral to ANSTO’s Business Management System – the framework that defines how business is conducted to deliver outcomes to our customers and stakeholders in a safe, consistent and environmentally responsible manner. Specific local arrangements and objectives for protecting human health, safeguarding our operations and minimising our environmental footprint derive from these overarching documents. The measures adopted to achieve our environmental commitments are documented in environmental management plans that underpin ANSTO’s Environmental Management System.

ANSTO activities that contribute to ESD include our research into the significant environmental issues of dryland salinity, water management, climate variability and purification of waste water. This research enhances scientific knowledge and improves environmental outcomes. Our active support of nuclear non-proliferation and the development of nuclear safeguards also accords with ESD principles.

Finally, ANSTO’s commitment to ecologically sustainable development means that special emphasis is placed on reducing the Organisation’s environmental footprint by minimising waste production, and the consumption of resources such as paper,

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**John Geldeard** joined ANSTO’s Safety and Radiation Services in 2001 as an Active Handler working on loading and unloading radioactive targets from HIFAR to be processed for use in industry and medical fields. Four months later he joined the Fuel Management Team and has since completed three highly complex spent fuel shipments: two to France and one to the USA. He also assists the Waste Operations Team in reducing waste from the ANSTO site.
electricity and water. It also ensures that we manage our past and current waste in a manner that protects human health and the environment, now and in the future.

**Safety arrangements**

ANSTO is committed to ensuring a safe and healthy environment for employees, visitors, contractors and the external community. All ANSTO activities are governed by a ‘safety first’ philosophy that means work is planned and will only be performed if it is judged to be safe.

Safety and environmental principles, values and commitments are set out in the ANSTO Health, Safety and Environment Policy which is supported by a framework of documents that constitutes our safety management system. Key elements of the safety system are:

- documented requirements and guidance,
- formal review and approval of potentially hazardous work,
- auditing and evaluation of safety performance
- communication of safety issues and performance to workers and the community.

During the reporting period, the ANSTO safety documentation was completely updated and preliminary steps were taken to integrate with ANSTO’s environmental protection system.

**Accidents and incidents**

An important part of ANSTO’s safety management system is the capturing of information on all safety-related events including accidents and ‘near misses’. This ensures the proper investigation of all such events and the implementation of safety improvements. It also gives us data to drive improvements in ANSTO’s safety performance. One key indicator of safety performance is the number of incidents that are reported to regulators (Comcare and ARPANSA). In 2006-07 ANSTO informed Comcare of 14 notifiable incidents. Four of these were serious personal injury (or possible serious injury), nine were dangerous occurrences and one was an incapacity (notified when the staff member is absent for 30 days or more). Comcare investigated one reported incident and their report concluded that ANSTO did not breach duty of care under section16 (1) of the Occupational Health and Safety (Commonwealth Employment) Act 1991. All but one of these incidents were conventional health and safety issues (i.e. muscle strains and sprains).

All incidents were investigated and improvements made to work practices as a result.

**Measuring radiation by the dose**

Everyone is exposed to ionising radiation from natural sources. People may also be exposed to radiation from non-natural sources, including medical procedures such as X rays. The effect of radiation on our body is called dose and is measured in sieverts (Sv). Typical doses of radiation are so small that they are usually expressed in units of one thousandth of a sievert, known as a millisievert (mSv).

According to the most recent data from ARPANSA, the average dose an Australian receives from natural background radiation
Safety Arrangements and Environmental Performance

(excluding medical sources) is 1.5 mSv per year. Federal and State regulations require that a member of the public should receive no more than 1 mSv per year from radiation sources other than background radiation and medical procedures. The regulatory limit for radiation workers is 20 mSv per year, averaged over five years, with no more than 50 mSv in any one year.

ANSTO’s workers are routinely monitored for exposure to radiation. Monitoring results for 2006-07 show that the radiation doses received by ANSTO workers remain significantly below regulatory limits.

Table 1 shows the maximum, average and collective effective doses for the past five years. Table 2 shows the distribution of individual effective doses over the same period. The graph in Figure 1 compares maximum and average effective doses. Regulations give annual dose limits for radiation workers for the whole body (effective dose), for the skin (shallow dose) and for extremities such as hands or feet. The dose limits are:

- whole body 20 mSv, averaged over five years
- shallow (skin) 500 mSv
- extremities 500 mSv.

**Emergency preparedness and responses**

ANSTO and emergency services organisations jointly maintain a 24-hour emergency response capability to deal with incidents at Lucas Heights. The Response Plan for Accidents and Incidents describes how an emergency

### Table 1: Effective dose

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum effective dose mSv</td>
<td>9.7</td>
<td>9.8</td>
<td>10.2</td>
<td>10.2</td>
<td>9.4</td>
</tr>
<tr>
<td>Average effective dose mSv</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.6</td>
</tr>
<tr>
<td>Collective effective dose man-mSv</td>
<td>684</td>
<td>692</td>
<td>697</td>
<td>690</td>
<td>545</td>
</tr>
</tbody>
</table>

*The 2005-06 values do not include an outlier dose value of 65.9 mSv

### Table 2: Distribution of individual effective dose

<table>
<thead>
<tr>
<th>dose ranges (mSv)</th>
<th>2002-03</th>
<th>2003-04</th>
<th>2004-05</th>
<th>2005-06</th>
<th>2006-07</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 2</td>
<td>756</td>
<td>824</td>
<td>807</td>
<td>751</td>
<td>926</td>
</tr>
<tr>
<td>2 to 5</td>
<td>80</td>
<td>82</td>
<td>66</td>
<td>61</td>
<td>41</td>
</tr>
<tr>
<td>5 to 10</td>
<td>23</td>
<td>18</td>
<td>20</td>
<td>28</td>
<td>13</td>
</tr>
<tr>
<td>10 to 15</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>&gt; 15</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
response will be coordinated and identifies who is responsible for which actions. Each organisation has standing procedures detailing each individual response. NSW emergency services manage responses to emergencies with potential significant offsite radiological consequences at state-level according to the Lucas Heights Emergency Sub Plan. There is also a district-level Lucas Heights Emergency Evacuation Sub Plan supporting these arrangements. In the event of an emergency, ANSTO staff would give technical assistance and practical support to emergency service organisations.

ANSTO maintains a close working relationship with emergency service organisations through the Local Liaison Working Party. The working party includes ANSTO specialists and representatives of emergency service organisations, local government, and support organisations, including NSW Health. ARPANSA is an observer. As a result of a memorandum of understanding established between ANSTO and the NSW Fire Brigade during the year, there are improved descriptions of all major fire hazards on the ANSTO site.

An ongoing program of emergency training and evacuation drills is in place for all of site. Staff in each work area undergo training in the local emergency response protocols and are familiarised with the appropriate muster points. This training is supplemented with evacuation drills that are run with the respective Building Wardens.

ANSTO staff continued to run the Radiological Awareness Program for local emergency service organisations and functional groups in cooperation with ARPANSA. Specific radiological training is also provided to the NSW Fire Brigade members as part of their HAZMAT training.
The Australian Government funds ANSTO in three separate tranches, or outcomes, to:

1. acquire new nuclear based infrastructure, that is, the construction and commissioning of OPAL
2. arrange for the reprocessing or disposition of spent HIFAR fuel
3. deliver valued, nuclear-related scientific services and products.

The first two outcomes are funded in accordance with specific Government decisions. The third outcome is subject to a Quadrennium Funding Agreement (QFA) between the Minister for Finance and Administration, the Minister for Education, Science and Training, and ANSTO. Funding on a quadrennial basis provides a more stable financial environment and a realistic timeframe in which to plan for and deliver outputs and outcomes.

The following performance report covers all three outcomes and reports against outputs identified in ANSTO’s section of the 2006-07 Department of Education, Science and Training Portfolio Budget Statement.

**Outcome 1 – Nuclear based infrastructure**

**Objective**

The replacement research reactor is operational and providing improved core nuclear facilities for medical, industrial and R&D (Research and Development) applications during 2006.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of compliance with project plan and achievement of specific milestones:</td>
<td></td>
</tr>
<tr>
<td>• On time</td>
<td>The replacement research reactor, OPAL, finished commissioning in 2006-7</td>
</tr>
<tr>
<td>• On budget</td>
<td>Replacement research reactor project milestones have been achieved within budget</td>
</tr>
</tbody>
</table>

**Contributions of Outputs to Outcome**

ANSTO’s specific output relates directly to client supervision of the design, construction and performance testing of the outcome in the form of an operational replacement research reactor together with neutron beam instrumentation.
Outcome 2 – Disposition of Spent Fuel

Objective

Removal of spent fuel from the ANSTO site in line with stringent safety arrangements and community expectations.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Licence achievement (June 2006)</td>
<td>• Achieved 14 July 2006</td>
</tr>
<tr>
<td>First criticality achieved</td>
<td>• Achieved 12 August 2006</td>
</tr>
<tr>
<td>Full Power</td>
<td>• 3 November 2006</td>
</tr>
<tr>
<td>First radioisotope delivery</td>
<td>• 19 April 2007</td>
</tr>
<tr>
<td>Cold neutron source commissioned</td>
<td>• April 2007</td>
</tr>
</tbody>
</table>

Output 2.1

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety procedures adhered to fully and shipment is:</td>
<td>• 8th Shipment has been completed to schedule and within budget parameters</td>
</tr>
<tr>
<td>• On time</td>
<td></td>
</tr>
<tr>
<td>• On budget</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule for ninth shipment is completed</td>
<td>• Planning for the ninth shipment scheduled for 2009 is on track and meeting budget and time parameters.</td>
</tr>
</tbody>
</table>
## Outcome 3 – Science and Technology Solutions

### Output 3.1
Management of core nuclear facilities providing Australia with nuclear capability and credibility from which socio-economic benefits flow to Australia, the R&D community and industry.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2005-06</td>
</tr>
<tr>
<td>Research beamline usage – percentage of all available days, across all instruments</td>
<td>71%</td>
</tr>
<tr>
<td>Research reactor availability – percentage of actual hours at power as a proportion of total hours planned to be at power</td>
<td>99%</td>
</tr>
<tr>
<td>Accelerator usage – percentage of all available days, excluding maintenance, for tandem accelerators</td>
<td>91%</td>
</tr>
</tbody>
</table>

### Output 3.2
Expert scientific and technical services for and on behalf of Government, in support of Australia’s national and international strategic and nuclear policy objectives.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2005-06</td>
</tr>
<tr>
<td>Leadership role in national and international forums and networked organisations – number of such roles</td>
<td>35</td>
</tr>
<tr>
<td>Person-years by staff on projects that have as a primary objective providing advice to Government</td>
<td>14</td>
</tr>
</tbody>
</table>
Output 3.3
The acquisition of knowledge, through research and its utilisation, through innovation, to advance the beneficial applications of nuclear science and technology to problems of environmental, medical, social and industrial importance.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2005-06</td>
</tr>
<tr>
<td>• Publication and conference papers</td>
<td></td>
</tr>
<tr>
<td>- Books, chapters &amp; monographs</td>
<td>2</td>
</tr>
<tr>
<td>- Journal articles</td>
<td>172</td>
</tr>
<tr>
<td>- Conference papers/abstracts</td>
<td>269</td>
</tr>
<tr>
<td>Total</td>
<td>443</td>
</tr>
<tr>
<td>• Number of research collaborations</td>
<td>251</td>
</tr>
<tr>
<td>• New inventions per year</td>
<td></td>
</tr>
<tr>
<td>- Invention disclosures</td>
<td>16</td>
</tr>
<tr>
<td>- Provisional patent filing</td>
<td>4</td>
</tr>
</tbody>
</table>

Output 3.4
Science and technology services to industry and the Australian research and development community, including training of students in nuclear science and technology and its applications.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2005-06</td>
</tr>
<tr>
<td>• Number of postgraduates and undergraduates supervised</td>
<td>195</td>
</tr>
<tr>
<td>• External earnings from services and contract research</td>
<td>$10 435 044</td>
</tr>
<tr>
<td>• External earnings from training courses*</td>
<td>$251 000</td>
</tr>
</tbody>
</table>
Output 3.5
Regular production and sale of radiopharmaceuticals and radioisotopes for medical and industrial applications and other services through designated business units.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2005-06</td>
</tr>
<tr>
<td>• Radioisotope sales (total)</td>
<td>$20 951 576</td>
</tr>
<tr>
<td>• Export sales</td>
<td>$5 042 638</td>
</tr>
<tr>
<td>• Radiopharmaceutical doses to patients – potential doses*ii</td>
<td>$2 201 145</td>
</tr>
</tbody>
</table>

Output 3.6
The exploitation of ANSTO’s intellectual property and physical assets.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2005-06</td>
</tr>
<tr>
<td>• Intellectual property being commercialised – inventions and designs with active commercialisation plans</td>
<td>36</td>
</tr>
<tr>
<td>• External earnings from land management and CSIRO site support</td>
<td>$3 809 136</td>
</tr>
</tbody>
</table>

i Reduction in beamline usage is due to a gradual decrease in research using the HIFAR instruments, which were shut down at the end of 2006. Staff effort was transferred to the installation of the new instruments at OPAL

ii Results for reactor availability reflects HIFAR availability to the end of 2006.

iii The indicator is for usage of Small Tandem for Applied Research (STAR) and ANTARES, with 13% allowed for maintenance. Difference in usage reflects the increased maintenance cycle for ANTARES and a 251 work day cycle

iv Leadership constitutes a level of responsibility above general membership and participation. Organisations include IAEA, Forum for Nuclear Cooperation in Asia (FNCA), Regional Cooperative Agreement (RCA), Organisation for Economic Cooperation and Development (OECD) and Nuclear Energy Agency (NEA). Committees including International Scientific Societies and International conference organising bodies, CRCs, ARC centres and networks, industry bodies

v* Note: The method of calculating this figure has change from last year (ANSTO Annual Report 2005-6). The change in the method for determining the data has resulted in an increase from 11 reported in 2005-6 to 14.6 and a comparable figure of 13.5 in 2006-7. The increase is due to the inclusion of 30% of our Counter Terrorism Research work; 25% of our Chief of Operations and CEO; and inclusion of work related to Nuclear Powered Warships

vi This figure includes Safety Training. The figure is low compared to previous years due to an increase in Safety Consultancy and the movement of resources to cater for the consultancy demand. The training income in other areas such as IAEA work is fairly consistent, and the variation in income appears to be due to the increase in consultancy work in Safety.

vii Potential doses to patients based on radioactivity of the five main ARI products, as measured at the point of despatch to nuclear medicine centres in Australia. These five main products are a Technetium-99m Generator, thallium-201, gallium-67 and the medical iodine products iodine-131 and iodine-123. The estimate takes account of transport times, rates of radioactive decay and average dose quantities per patient but not the centres’ hours of operation and usages, patient characteristics or the organs imaged. The indicator only covers distribution in Australia, not exports.
Report of Governance and Performance
Corporate Governance

Compliance
ANSTO is subject to the provisions of various Commonwealth Acts, Regulations made under these various Acts and Commonwealth Awards.

The principal Acts are:
- Australian Nuclear Science and Technology Organisation Act 1987
- Australian Radiation Protection and Nuclear Safety Act 1998
- Commonwealth Authorities and Companies Act 1997
- Nuclear Non-proliferation (Safeguards) Act 1987

Other relevant Acts include:
- A New Tax System (Goods and Services Tax) Act 1999
- Archives Act 1983
- Auditor-General Act 1997
- Australian Radiation Protection and Nuclear Safety (Licence Charges) Act 1998
- Environment Protection and Biodiversity Conservation Act 1999
- Freedom of Information Act 1982
- Lands Acquisition Act 1989
- Legislative Instruments Act 2003
- Long Service Leave (Commonwealth Employees) Act 1976
- Maternity Leave (Commonwealth Employees) Act 1987
- Privacy Act 1988
- Racial Discrimination Act 1975

Barry Munns commenced as ANSTO’s Chief Internal Auditor in May 2006. The scope of the Internal Audit team encompasses all areas of ANSTO, with an emphasis on providing independent assurance to both the Board and Chief Executive Officer on the efficiency, effectiveness and security of ANSTO’s business operations, corporate governance, risk management, corruption prevention, and compliance processes.
• Safety, Rehabilitation and Compensation Act 1988
• Sex Discrimination Act 1984
• Superannuation Act 1976
• Superannuation Act 1990
• Superannuation Guarantee (Administration) Act 1992
• Superannuation (Productivity Benefit) Act 1988
• Therapeutic Goods Act 1989
• Workplace Relations Act 1996

The principal Award is the Australian Nuclear Science and Technology Organisation (General) Award 1990.

ANSTO has put in place policies and procedures to deliver compliance with the above Acts and Regulations made thereunder, and with the above Award.

**ANSTO Act –amendments**

1. **Amendments to section 5 of the Act**

During the financial year, Section 5 of the ANSTO Act was amended to allow ANSTO to condition, manage and store some radioactive material and radioactive waste other than that which may arise directly from ANSTO’s activities. As the pre-eminent expert body on radioactive materials and radioactive waste technology in Australia, with the facilities and trained personnel for managing radioactive material and waste, it is the Government’s intention that ANSTO be able to fully participate in the management of radioactive material and waste in the possession or under the control of any Commonwealth entity.

The amendment also ensures that ANSTO is able to provide effective assistance to State and Territory jurisdictions, if asked, in ensuring public health and safety in the event of an incident, including a terrorist or criminal incident, involving radiological material. Authority to accept and manage radioactive material arising from a terrorist incident is an important component of Australia’s counter-terrorism response.

Thirdly, spent nuclear fuel from ANSTO’s reactors is sent overseas under contractual arrangements for reprocessing to convert it into an intermediate level waste form suitable for long-term storage and eventual disposal in Australia. Australian spent fuel may be combined with spent nuclear fuel from many sources and processed in bulk campaigns. Accordingly, the amendment clarifies ANSTO’s authority to condition, manage and store the material returned to Australia as a result of the contractual arrangements entered into for this purpose.


2. **Amendments to governance parts of the Act**

The Governance Review Implementation (Science Research Agencies) Bill 2007 (the Bill) was introduced into Parliament on 28 March 2007 and received Royal Assent on 21 June 2007. It seeks to improve the corporate governance of three statutory authorities in the Education, Science and Training portfolio - the
Australian Institute of Marine Science (AIMS), the Australian Nuclear Science and Technology Organisation (ANSTO) and the Commonwealth Scientific and Industrial Research Organisation (CSIRO). The Bill is part of a broader exercise within the Australian Government to improve transparency and consistency in relation to governance arrangements for statutory authorities and office holders in response to the Government’s endorsement of the recommendations of the Review of the Corporate Governance of Statutory Authorities and Office Holders (the Uhrig Review). The amendments to the ANSTO Act contained in the Bill will take effect on Proclamation.

Currently Section 9 of the Australian Nuclear Science and Technology Organisation Act 1987 (the ANSTO Act) provides for a Board consisting of the Executive Director and “not fewer than 2 nor more than 6 other members”. The ANSTO Act will be amended to reflect Uhrig Review recommendations for best practice regarding governance by a board by specifying that the Board will consist of 6-9 members including the Executive Director. Consistent with the amendments to be made to the governance of AIMS and CSIRO, the legislative requirement for Ministerial approval of contracts above a prescribed value (currently $5 million) will be removed by repealing section 31 of the ANSTO Act. This will be replaced by a requirement, set out in the Minister’s Statement of Expectations, that the Minister is notified in advance of ANSTO entering into significant contracts. This is consistent with the provisions in section 15 of the CAC Act.

For consistency with commercial practice, the title of the chief executive of ANSTO will be changed to “Chief Executive Officer” rather than the current ‘Executive Director’, wherever occurring in the ANSTO Act.

More detail about these amendments can be found in the Explanatory Memorandum for the Bill, at http://parlinfoweb.aph.gov.au/piweb/Repository/Legis/ems/Linked/28030700.pdf.

The functions of the Board

A Board established under Section 8 of the Australian Nuclear Science and Technology Organisation Act 1987 governs ANSTO.

The general functions of the Board, as set out in Section 10 of the ANSTO Act, are to ensure the proper and efficient performance of the functions of the organisation and to determine the policy of the organisation with respect to any matter, having regard to the current policies of the Commonwealth Government.

In particular, it has responsibility for:

- approval of organisational strategy and the annual business plan and budget
- monitoring financial performance
- monitoring managerial performance
- ensuring that the significant risks facing the organisation have been identified, and that appropriate control, monitoring and reporting mechanisms are in place.

The Commonwealth Authorities and Companies Act requires the Board to comply with certain accountability and corporate governance principles, including:

- the maintenance of an Audit Committee
- specific financial and reporting provisions
• disclosure of all Board members’ personal interests

• provision of indemnities and indemnity insurance in certain circumstances.

All CAC Act requirements are currently being met.

Processes are in place for performance assessment of both the Board and its Audit Committee and individual members thereof.

The Board has established an Audit Committee and a Remuneration Committee. All matters considered by those Committees are submitted to the Board for information and, where appropriate, ratification. Details of the Audit Committee and the Remuneration Committee are provided below. The Board is also supported in its role by other committees or mechanisms relating to safety and environmental management and to management of the research portfolio. These are also described below.

**Board Charter**

ANSTO has an established Board Charter, setting out the respective rights and responsibilities, functions and powers of Board members and ANSTO executives. It is made available internally on the ANSTO internet site.

**Board membership**

During the 2006-07 financial year, the Board comprised five non-executive members, drawn from the broader community, who are not involved in the day-to-day running of the organisation, and an Executive Director. The Executive Director, who is appointed by the Board, cannot be the Chair. The non-executive members are appointed by the Governor-General for specified periods. The dates of appointment and tenure of Board members are set out in the financial statements. Other positions held, including other directorships, are disclosed in the Board information section of this Annual Report.

Section 19 of the ANSTO Act provides that the Executive Director shall manage the affairs of the organisation, subject to the directions of, and in accordance with, policies determined by the Board. Senior management attend Board meetings as required to report on matters relevant to their individual areas of responsibility.

Each member brings complementary skills and experience to the Board. Its members during the 2006-07 financial year had experience in areas that included industry, information and communication technology, mining, scientific research, medicine and the commercialisation of research.

The Board meets regularly in accordance with a formally approved timetable and agenda. Board members receive regular papers from management on financial and business performance and specific papers on a range of issues relevant to the organisation.

Seven Board meetings were held during the 2006-07 financial year. Details of the number of Board meetings attended by each member during the period in which each member held office during the financial year are shown over.

**Board remuneration and allowances**

The remuneration and allowances of members of the Board, including the Executive Director, are determined by the Remuneration Tribunal.
Remuneration of Board members is disclosed in the Financial Statements.

Disclosure of interests of Board Members

Sections 27F-27K of the CAC Act provides for the disclosure of material personal interests in a matter that is being considered by the Board, and prohibits participation, deliberation and decision making by any member on such matters. All these requirements were met during the year.

Board member access to independent professional advice

The Board has established procedures by which members, in the interests of their duties, may seek independent professional advice at ANSTO’s expense. In brief, members must first seek permission from the ANSTO Chairman.

Report of operations

Section 9, Schedule 1 of the CAC Act requires that the Organisation’s Annual Report include a report of operations. The Commonwealth Authorities and Companies (Report of Operations) Orders 2005 set out the requirements for such a report. In this Annual Report this is called a Report of Research and Operations. The format and content of the 2006-07 Annual Report, including the financial statements, addresses these requirements in general, and Appendix 6 sets out details of compliance with the particular requirements of these Orders.

The Board reports that:

- ANSTO’s mission and strategic directions are being actioned
- Actual performance is reported against approved performance indicators
- Pursuant to Section 15 of the CAC Act, ANSTO notified the Minister:
  - in December 2006 that the ANSTO Board has decided on the incorporation of two subsidiary companies, Australian
Membrane Technologies Pty Limited and CeramiSphere Pty Limited; and
• in June 2007 that the ANSTO Board has decided on the incorporation of a further subsidiary company PETNET Australia Pty Ltd.

• There have been no other significant changes in ANSTO’s state of affairs or principal activities during the year
• ANSTO has continued to manage both the risks and opportunities it faces.

The Board reports that, in the opinion of senior management and the Board, at the time of making this report, adequate cash resources are, and will continue to be, available to cover ANSTO’s requirement for working capital, to pay existing debts, and meet obligations during the next financial year.

The Board states that a risk oversight and management policy and supporting processes are in place and that adequate systems are in place to ensure compliance with this policy.

Health, safety and environmental protection

The Board places primary importance on the safe performance of all ANSTO activities. The monitoring of health, safety and environmental protection in general, and compliance with relevant legislation in particular, is designated as a responsibility of the whole Board. ANSTO’s Health, Safety and Environment Policy clearly sets out the organisation’s commitment to verifiable implementation of best practices in safety and environmental protection.

The Board attaches priority to the directions and recommendations on safety made by external regulators such as the Australian Radiation Protection and Nuclear Safety Agency and Comcare. All operation of nuclear facilities and work involving radioactive materials at ANSTO is conducted in compliance with licences issued under the ARPANS Act 1998.

The ANSTO Health, Safety and Environment Committee advises the Executive Director on the effectiveness and compliance of ANSTO’s performance in the areas of health, safety and environmental management. During 2006-07, the ANSTO safety system was updated to emphasise the integration of focus on health, safety and environmental protection. The new ANSTO Occupational Health, Safety and Environment (OHSE) protection system includes documented procedures and guidance; reviews of higher risk activities by the Safety Assessment Committee and audits of system implementation and OHSE regulatory compliance. The Board receives regular reports on these issues, and in 2006-07 has encouraged strengthened management focus in these areas.

Audit Committee

The Audit Committee, a formal sub-committee of the Board, comprised during the year Mr M A Eager (Chair), Dr K Schindhelm and a member external to ANSTO, Mr W Wilton. Mr Wilton is a Chartered Accountant. The ANSTO Chairman is an ex officio member of the Committee. The Executive Director, the Board Secretary, the Chief Financial Officer, representatives of the Australian National Audit
Corporate Governance

Office and the Chief Internal Auditor attend all meetings or relevant parts of all meetings by invitation. Others attend meetings, as appropriate, at the invitation of the Committee.

In accordance with good practice, all Board members receive copies of Audit Committee papers and meeting minutes, and can attend Committee meetings as a right. This Committee was established by the Board under a formal written Charter to oversee the organisation’s risk management policies, practices and controls in relation to financial and commercial activities, including the financial reporting process, legislative and regulatory conformance, corporate governance and asset protection. Its Charter extends to the review of safety and environmental systems and performance. The Charter is made available internally on the ANSTO intranet site. The Committee also reviews summaries of the internal and external audit work schedules and reports. Additionally, in accordance with the provisions of the CAC Act, the Committee is responsible for assisting Board members to fulfil their specific responsibilities under that Act.

The Committee has unlimited access to both the internal and external auditors and to senior management.

The Committee scrutinises the annual financial statements of ANSTO and considers the appropriateness of accounting practices reflected therein. It receives a signed recommendation from the Chief Financial Officer, and the Executive Director, as to the veracity of the financial statements signed by the Board.

Five Audit Committee meetings were held during the financial year. Details of the number of Committee meetings held and attended during the period in which each member held office during the financial year are provided in the table below.

The Committee generally meets quarterly. It is the first of two formal sub-committees of the Board.

Remuneration Committee

The Remuneration Committee, a formal subcommittee of the Board, comprised during the year Dr Z Switkowski (Chair), and Mr M A Eager. The Executive Director, the Board Secretary and the Chief Financial Officer attend all meetings or relevant parts of all meetings by invitation. Others attend meetings, as appropriate, at the invitation of the Committee. In accordance with better practice, all Board members receive meeting minutes, and can attend Committee meetings as a right.

This Committee was established by the Board under a formal written Charter to oversee:

Meetings – Audit Committee

<table>
<thead>
<tr>
<th>Member</th>
<th>Eligible to attend</th>
<th>Attended</th>
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<tbody>
<tr>
<td>Mr Michael A Eager (Chair)</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Dr Klaus Schindhelm (Member)</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Mr Warren Wilton (External Member)</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Dr Klaus Schindhelm acted as the Chairman of the Audit Committee for the February 2007 meeting.
The overall remuneration policy and strategy for the organisation

The remuneration policies for the Executive Director

The compliance of remuneration policies and practices with statutory and regulatory requirements.

The Charter is made available internally on the ANSTO intranet site.

One Remuneration Committee meeting was held during the financial year. Details of the number of Committee meetings held and attended during the financial year are provided in the table above. It is the second of two formal sub-committees of the Board.

Technical Advisory Committee

The Technical Advisory Committee (TAC), formally established in accordance with a Board decision, comprises four members, all of whom are external to ANSTO. Members are chosen on the basis of internationally recognised scientific expertise and experience. The current members (as at 30 June 2007) of the Committee are Dr Roy Green, Emeritus Professor Peter Robinson, Dr Dan Shochat, and Professor William Stirling. Dr Shochat’s term concluded on 30 June 2007.

This Committee operates under written terms of reference and was established by the ANSTO Board to advise it on the quality and relevance of the portfolio of research projects being undertaken at ANSTO. The terms of reference are made available internally on the ANSTO internet site.

Specifically the TAC provides an expert overview of research and addresses the following matters:

- To provide strategic advice to the Board concerning the research project portfolio
- To provide the Board with an overview of the quality of research within ANSTO’s portfolio
- To advise on any matters affecting the quality of research outputs

The Committee was formally constituted in October 1996 and is required to meet at least once per year. It met once during the 2006-07 financial year and presented a formal report to the Board.

Induction and continuing professional development of ANSTO executives

Processes are in place for induction and ongoing education to inform executives of their responsibilities and rights. New executives have access to appropriate induction documents and processes (including those relating to safety and security) and to ANSTO officers. Development needs are identified

Meetings – Remuneration Committee

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<tr>
<th>Member</th>
<th>Eligible to attend</th>
<th>Attended</th>
</tr>
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<tbody>
<tr>
<td>Dr Ziggy Switkowski (Member)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mr Michael A Eager (Member)</td>
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</table>
through an annual multi-rater feedback process (360 Degree Assessment) against the Executive Capability Framework. Individual Development Plans are implemented on the basis of this process to provide continuing professional development for ANSTO Executives to meet their professional and career development needs. Development opportunities include Executive Coaching and Mentoring, Executive Development Programmes (DSTO); Australian Public Service (APS) Executive Development Programmes; Business School Programmes; and Targeted Capability Programmes to meet specific needs.

Performance review for ANSTO executives

During the 2006-07 financial year performance reviews were conducted of the Executive Director, the Chief of Operations, the Chief of Research and the Chief Financial Officer and those reporting directly to them. Information on the performance review system is made available internally on the ANSTO internet site. This review included the conducting of a 360 degree feedback process on all members of the senior Management Team and the implementation of development plans.

Risk management

The Board recognises that developing and implementing ANSTO’s strategies requires careful assessment and balancing of both risk and opportunity.

The Board is charged with the responsibility of ensuring that appropriate policies are in place to cover identified risks, and management is required to develop appropriate procedures to manage these risks.

The Board has endorsed a risk management framework introduced by management in 1997 and continually refined. As part of this framework, ANSTO’s Internal Audit function undertakes a systematic program of risk assessments designed to identify, evaluate and prioritise high and significant risks, utilising a methodology consistent with the Australian Risk Management Standard AS/NZS - 4360/2004. The Audit Committee and the Australian National Audit Office (ANAO) receive summaries of all risk assessment reports.

ANSTO’s risk management policy provides that it is the responsibility of the operational management of ANSTO to develop and implement risk mitigation strategies. The overall risk framework is actively applied in ANSTO’s operations and to new initiatives in particular. Project risk management remains a significant area of focus in particular capital works projects.

In appropriate circumstances, insurance is used as a method to transfer the financial impact of risk.

The Board, supported by the Audit Committee, oversees the development and operation of business continuity planning and other emerging risk issues.

The ANSTO risk management policy is made available internally on the ANSTO internet site.

Ethical standards

ANSTO’s ethics policy is set out in a document entitled Code of Ethics – A Code for ANSTO Staff. The Code provides a reference point for ethical behaviour and applies to members of the Board, management and all staff. The Code sets out the standards for ethical behaviour.
and conduct and provides guidance by defining the expected values and standards of workplace behaviour and performance.

**Fraud control**

The organisation has an established fraud control policy and plan, in line with the *Fraud Control Policy of the Commonwealth* and guidelines set out by the Attorney General’s Department, Criminal Justice Division.

**External audit**

Under Section 8 of the *CAC Act* the Commonwealth Auditor-General, through the ANAO, is the external auditor for ANSTO.

The ANAO, as a matter of policy, provides only audit services to ANSTO.

The Audit Committee reviews the ANAO audit plan and reports and meets with ANAO representatives prior to recommending to the Board that the annual financial statements be accepted and the Statement by Directors signed.

**Internal audit**

The ANSTO Internal Audit function has a dual reporting line to the Audit Committee and the Executive Director. Its responsibility is to provide an independent, risk-based review function, as set out in a formal Charter periodically reviewed by the Audit Committee and endorsed by the Board. The Audit Committee approves the annual Internal Audit plan and receives regular reports on progress against that plan.

**Internal control**

The Board is responsible for ensuring that appropriate policies and internal controls are in place and operating.

Compliance and review are monitored through the Audit Committee and the Internal Audit function.

**Service Charter**

ANSTO’s Service Charter sets out a statement of what ANSTO does and the standards of product and service that customers, stakeholders and the community can expect from the organisation.

**Judicial decisions and reviews by outside bodies**

There were no judicial decisions or decisions of administrative tribunals that had a significant impact on the operations of ANSTO during the reporting year.

There were no specific reports issued by the Commonwealth Auditor-General, other than that issued in relation to the 2006-07 financial statements.

There were no reports on the operations of ANSTO by a Parliamentary Committee or the Commonwealth Ombudsman during the reporting year.

**Ministerial directions**

There were no ministerial directions to ANSTO made under either the *ANSTO Act* or the *CAC Act* during the reporting year.

**Indemnities and insurance premiums for officers**

ANSTO’s insurance coverage includes professional indemnity and directors’ and officers’ liability. Certain sections of the *CAC Act* contain prohibitions against ANSTO giving indemnities and paying insurance premiums relating to liabilities arising from conduct.
involving a lack of good faith by officers. There have been no exceptions to these provisions and no claims were made against ANSTO in respect of such liability that required a claim on ANSTO’s insurer, Comcover.

**Nuclear safeguards**

ANSTO undertakes continuing observation of and compliance with strict national and international safeguards guidelines and requirements established by the International Atomic Energy Agency and the national safeguards regulator, the Australian Safeguards and Non-Proliferation Office.

IAEA and ASNO inspectors carried out inspections of ANSTO’s nuclear material and a full Physical Inventory Verification in June 2006. During each of the inspections the IAEA inspectors requested short notice inspection and were granted complementary access. The results of inspections were satisfactory. The IAEA inspections were supplemented by ASNO’s regular audits of ANSTO’s nuclear material accounting and physical protection systems.

ANSTO is strengthening its nuclear safeguards further by putting greater emphasis on each individual nuclear material Authorised Officer’s responsibility and accountability for the nuclear material in the division or institute’s custody.

During 2006-07, ANSTO demonstrated, through ongoing implementation of safeguards, its commitment to the fulfilment of its obligations under both the Nuclear Non-Proliferation (Safeguards) Act and Australia’s Agreement with the IAEA.

**Business continuity planning**

Continuity of ANSTO business is a critical issue that has been considered and planned for by the Board, the Executive Director and senior management. Many services delivered by ANSTO are critical to the economic and social well-being of our society. A failure to deliver these could have significant consequences for those concerned. As a result, ANSTO regularly reviews all aspects of its business continuity management to ensure a constant state of readiness. In 2006-07 ANSTO’s crisis management plan was updated.

**Corporate social responsibility (CSR)**

In 2006-07, ANSTO continued to demonstrate its commitment to corporate social responsibility by publishing its fourth CSR report. This annual report focuses on the ways ANSTO responds to environmental, safety and social issues that affect staff, customers, the Australian community and key stakeholders. Highlights of this year’s report included research that will deliver significant benefits to Australians by providing a simple technique for cleaning waste water, a discussion of some safety challenges that ANSTO is addressing, and steps that have been taken to reduce ANSTO’s environmental footprint.