Australian Government

Ansto

Nuclear-based science benefiting all Australians

CORPORATE SOCIAL RESPONSIBILITY REPORT

ansto

2004-05

Take a look inside our world...

Australian Government

ansto

CORPORATE SOCIAL RESPONSIBILITY REPORT 2004-05

Welcome to ANSTO's second corporate social responsibility (CSR) report. We are firmly committed to reporting on our activities in environmental and social terms, as well as financially. In doing so we aim to be open about issues as well as help the Australian community better understand the benefits of our work.

I would like to thank those of you who contributed to this report and those who provided feedback on last year's report. Your comments help us to further improve our CSR reporting.

executive director's introduction

The essence of this report is showing how we constantly examine all aspects of our multi-faceted operation: to foster successful innovation, identify emerging problems and pursue opportunities for improvement. We learn from those who know us best – our employees, customers, suppliers, research collaborators, business partners and community groups.

In addition, we participate in extensive and exhaustive external reviews of our activities. These are conducted by a number of expert regulatory organisations and environmental, quality and financial auditors, as well as in our reporting to the Australian Government. The preparation for commissioning of our new OPAL (Open Pool Australian Light-water) reactor has brought particular public and regulator attention to our work over the last year, and this is set to continue.

We also engaged in extensive consultation in the development of our Strategic Directions for the coming five years. As well as setting four Strategic Directions – focusing on research excellence, issues of national importance, our expertise and facilities and our external relationships – we set a new vision, mission and core values.

CSR principles are woven throughout our Strategic Directions: in what we do, where we aim to be, and how we will get there.

For example, our Strategic Directions give particular emphasis to nuclear medicine. Our mission includes a new element devoted to this core aspect of our work, which benefits hundreds of thousands of patients each year.

In our first Strategic Direction we identify excellence as a crucial element of success. We are using our expertise, facilities and intellectual property to help solve critical social, environmental and economic problems in areas such as climate change, water management and cancer. To maximise the reach of our work and minimise duplication, we collaborate with other leading public and private sector organisations in the quest to develop new knowledge, products and services.

An example of this is collaboration we have undertaken with government and international agencies, that is key to our counter-terrorism research and services, which are part of the issues of national importance on which we focus in our second Strategic Direction.

As Australia's centre of nuclear expertise and one of this country's premier scientific facilities, we know expectations of us are high. This report aims to show how we are meeting our stakeholders' expectations (and where we are not yet up to the mark, what we are doing to change). This effort does not just involve everyone within the organisation – it also requires that we and our key stakeholders work together in a spirit of openness and commitment for the benefit of the entire Australian community.

Ian Smith
Executive Director

vision

To be recognised as an international centre of excellence in nuclear science and technology for the benefit of Australia

ansto's mission, vi

strategic directions

1. Deliver Excellence in Nuclear Science and Technology
2. Focus our Capabilities to Support Issues of National Importance
3. Maximise Return on Investment in Expertise and Specialised Facilities
4. Promote Understanding of the Benefits of Nuclear Science and Technology

core values

Safety, Security and Environmental Sustainability: protecting human health, safeguarding our operations and minimising our environmental footprint

Honesty, Openness and Integrity: building trust within our organisation and with stakeholders

Innovation, Collaboration and Responsiveness: creating and embracing new ideas, promoting learning and development, recognising trends, understanding stakeholder needs and fostering cooperation and teamwork

Competence and Professionalism: maintaining high standards of expertise and delivery to internal and external customers

sion & core values

mission

- To support the development and implementation of government policies and initiatives in nuclear and related areas, domestically and internationally
- To operate nuclear science and technology based facilities, for the benefit of industry and the Australian and international research community
- To undertake research that will advance the application of nuclear science and technology
- To apply nuclear science, techniques and expertise to address Australia's environmental challenges and increase the competitiveness of Australian industry
- To manufacture and advance the use of radiopharmaceuticals which will improve the health of Australians

corporate governance

Corporate governance of Australian Government agencies has been under the spotlight over the past year, as the Government began to implement the findings of the *Review of the Corporate Governance of Statutory Authorities and Office Holders*, prepared by John Uhrig AC.

The Uhrig Report found several ways that public-sector governance arrangements could be improved.

The Minister for Education, Science and Training, Dr Brendan Nelson, and his department are assessing each agency in the Education, Science and Training portfolio against governance best-practice templates contained in the report. The result of this review will be released in 2005-06.

ANSTO's Board members bring expertise on governance structures and processes from outside the organisation.

The Chairman, Dr Ian Blackburne, sits on a number of private-sector boards, with each Board member – for example Deputy Chairman, Mr Michael Eager, who has a long career in the mining sector, and Dr Carrie Hillyard, a venture capitalist and biotechnologist – bringing a range of experience and expertise.

ANSTO's Chairman, Dr Ian Blackburne, is well aware of the need for public entities to strike a balance between its own research, providing access to our facilities for other Australian researchers, and gaining commercial returns on products and services.

since 2001

Chairman Profile

"Because much of our funding comes from taxpayers, we must operate in the interests of as many Australians as possible," said Ian, who has been ANSTO's Chairman since 2001.

"We do this most notably through the impact we have on millions of Australians – patients and their family and friends – through the provision of nuclear medicine. We also conduct research utilising our expertise in nuclear science that lends insight into complex environmental issues such as air and water pollution and climate change, as well as assisting numerous industry sectors," he explained.

"Our knowledge and international relationships means we can make a unique contribution to the public debate about the value of nuclear energy and nuclear science in society. Further, Australia is a major supplier of uranium and ANSTO has a key role in ensuring that people understand what this means for future energy generation options and for the country's long-term commercial interest," he said.

Ian began his career as a research scientist before moving into the petroleum industry for 25 years in a variety of top management positions. He is Chairman of CSR Ltd and his other Board memberships include Mayne Group Ltd, the New York Stock Exchange listed Teekay Shipping Corporation and Suncorp-Metway Ltd. He has been a member of the Business Council of Australia and in 1997, received an Award for Excellence from the Institution of Engineers Australia in chemical engineering for 'exceptional achievement in management and leadership.'

"There is a fundamental link between our economic, environmental and social performance, and our future success depends on our ability to manage all three as transparently and responsibly as possible," he concluded.

ANSTO's Audit Committee, which for more than a decade has reviewed the organisation's risk management policies, practices and controls in relation to financial and commercial activities, further boosts the organisation's corporate governance standards.

ANSTO is reviewed on a regular basis by the Australian Government and a number of external agencies. The table below summarises the areas covered by these reviews and the outcomes.

Organisation	Review Scope	ANSTO Outcome
Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)	• Source & facility licences • OPAL construction licence	• Compliance with stringent licence conditions relating to radiation safety • Compliance with licence conditions
Australian Safeguards and Non-Proliferation Office	• Nuclear inventory control	• Compliance with national and international obligations regarding handling of fresh and spent nuclear fuels
Australian Security Intelligence Organisation	• Protective security	• Compliance with security requirements
Comcare	• Comcare Occupational Health & Safety Self Audit Review • Occupational Health & Safety Audits	• Compliance with audit program
Parliamentary Public Works Committee	• Major works	• Safe, efficient and value for money capital projects

Several other federal agencies are also charged with monitoring a range of ANSTO activities. These include the Attorney General's Department, which reviews fraud control procedures; the Australian National Audit Office, which monitors financial statements, audits, performance audits and cross-agency reviews; the Therapeutic Goods Administration, which reviews handling of nuclear medicine procedures; the International Atomic Energy Agency, which checks nuclear inventory controls; and Comcover, which maintains risk-management benchmarking practices. (A full description of these and other external agencies' monitoring of ANSTO's procedures and processes are explored in ANSTO's 2004-05 annual report).

In addition, ANSTO reports on its performance management framework and its commercialisation activities to the Minister for Education, Science and Training, and the Minister for Finance and Administration. ANSTO welcomes such scrutiny and incorporates the findings and recommendations into our business management system.

ANAO
comments on ANSTO's Corporate Governance

The Australian National Audit Office (ANAO), in its role as the external auditor of ANSTO, audits ANSTO's financial statements annually to provide an opinion on the truth and fairness of those statements.

These external audits are conducted in accordance with Australian National Audit Office Auditing Standards, which incorporate Australian Auditing and Assurance Standards, to provide reasonable assurance as to whether the financial statements are a true and accurate reflection of the organisation's financial performance.

"The nature of the audit is influenced by factors such as the use of professional judgement, selective testing, the inherent limitations of internal control and the availability of persuasive rather than conclusive evidence," said Paul Hinchey, Senior Director, Assurance Audit Services for the ANAO.

He said that while the audit cannot guarantee that all errors are detected, the most recent audit of ANSTO's financial statements did not disclose any material control weaknesses or observations.

ARPANSA
comments on ANSTO's Corporate Governance

"The Australian Radiation Protection and Nuclear Safety Agency regulates the Commonwealth's use of radioactive material and nuclear installations. Compliance monitoring with licence conditions for the 2004-05 financial years indicates that the very great majority of ANSTO's activities were undertaken in a manner that complied with the ARPANS legislation.

"However, ARPANSA's Quarterly Report to the Australian Parliament for the March 2005 quarter notes a finding by the CEO that ANSTO had breached the ARPANS legislation by installing an additional hoist on the reactor hall crane which amounted to making a change with significant implications for safety without the prior approval of the CEO.

"The CEO considered the issue of penalties for the breach and decided in this instance, mindful of the fact that ANSTO had volunteered to: (a) take action which would remedy the breaches; and (b) refrain from using the additional hoist, not to pursue available penalties."

safety at ANSTO

Every effort is made to ensure our products are developed and delivered to our diverse communities as safely as possible. This same duty of care regarding safety is extended to our staff and contractors.

zero-harm

In order to deliver the goal of a zero-harm workplace, we endeavour to enlist the support and commitment of every employee to identify 'near-misses', as well as hazards that can be corrected.

This employee ownership of safety is supported by an organisational emphasis on risk-based safety. All major facilities undergo a safety analysis that is reviewed and endorsed and then, as appropriate, by the independent regulator. A risk-based approach to safety is applied to all hazards, so that the hazard is analysed and treated according to its risk level.

safety **commitments**

- Make certain that all activities are safe and in line with international best-practice environmental management standards.
- Conduct regular and open discussions with staff, the local community and other interested parties on our nuclear safety policies.
- Constantly seek ways to improve our nuclear safety record.
- Ensure compliance with relevant state and Federal laws and regulations related to health, safety and the environment.
- Make sure that radiation doses are as low as reasonably achievable.
- Provide clear and concise evidence of the fulfilment of our safety commitments through monitoring and regular public reporting.

ANSTO Wins National Safety Award

ANSTO's contractor safety program was recognised by an award from the prestigious Safety, Rehabilitation and Compensation Commission in 2004.

The award, which was part of the Workplace Safety Innovative Solutions category, recognised the efficiency gains that flowed from the organisation's contractor safety procedures.

ANSTO has always had a system for supervising the safety of contractors on site. However, a review of incident data highlighted gaps in the system.

Karen Wolfe, Leader, Occupational Safety Services at ANSTO, said a typical example occurred when a contractor carrying out excavation work accidentally cut electrical cables. Closer examination of the incident revealed that proper excavation permits had not been processed.

Karen said that once shortfalls in the system had been identified, the existing documentation underwent a comprehensive review. To come up with improvements, best-practice solutions were researched and similar organisations were asked how they dealt with comparable hazards. All employees were included in the consultative process during this review period.

"From these inputs, we developed a systems framework that looked at all facets of contractor safety, including safety arrangements, supervising contractors, safe work permits and excavation procedures," Karen said.

Induction videos were made and contractors now undergo mandatory induction before coming onto the site. Contractor supervisors were nominated from across the site and fully trained. In addition, training for all staff on relevant parts of the system is given through a series of talks at their work sites.

More than 150 contractor supervisors are now trained, qualified and helping to implement contractor safety across ANSTO.

"Contractor supervisors now regularly suggest ways to improve the system," Karen said.

ANSTO's Contractor Supervisor program is now so highly regarded that Comcare asked team members to talk about it to other Commonwealth agencies across Australia so that they, too, might implement similar continuous improvement safety systems.

"The process can help other organisations to improve their management of contractors as well as their safety culture," Karen said.

Reducing Strain from RSI

An acknowledged occupational health & safety issue (OH&S) for the organisation has been the development of soft tissue repetitive strain injuries (RSI) by a number of ANSTO Radiopharmaceuticals and Industrials (ARI) production employees.

These injuries are mainly due to the manual nature of manufacturing radiopharmaceuticals. This work involves remote handling of materials and a less-than-ideal interface with the mechanical manipulators that carry out the remote work in shielded hot cells.

By August 2004, there were 14 people within ARI with recorded workplace injuries that had accumulated over several years. The worst incidence rate was in Medical Production, where eight of 22 staff (36 per cent) working at the hot cells registered injuries.

The injuries related to the hands, wrists, elbows and shoulders, with all eight restricted to varying degrees in their work duties. This shifted work to other staff, heightening the risk of further injuries.

A year later, the number of staff on restricted duties was reduced to four, thanks in large part to close consultation between production staff and ANSTO OH&S team leaders.

"We still have some way to go to reduce our injury rates," admitted David Beech, ANSTO's Production Manager. "Nonetheless, progress is encouraging and it's been great to experience the level of commitment of our people, as well as the support and assistance we have been given by all parties."

In September 2004, a working group was set up to address these issues. The group was led by the General Manager, Safety and Radiation Services. The group consulted widely and reported formally to the Executive Director.

The group consulted all ARI staff through meetings and 'brainstorming' sessions. All issues were rated according to how much they contributed to RSI, and posted on the ARI website. As a result, several initiatives were put in place, including:

- fast-tracking a number of OH&S projects, prioritised according to effect on injury
- committing additional resources to cell maintenance
- the development of posture and conditioning training.

Processes and communication with staff have also been greatly improved. ARI's General Manager conducts a quarterly meeting with all ARI staff where OH&S progress is discussed. This is complemented by regular meetings of the OH&S committee.

"Our objective this coming year is to continue to reduce the risk of injury in the workplace through the initiatives developed through the working group," explained David. "We are also focusing on using the established event report process to establish root cause, and effect improvements that will continually reduce the risk of injury."

safety scorecard

	Unit of Measure	2004-05	Target Max
Lost time injury frequency rate (LTIFR)	LTIFR (per million hours worked)	13.6	9.0
Maximum annual effective radiation dose to ANSTO radiation workers	mSv	10.2	15.0 mSv standard dose constraint

Trend Data	2000-01	2001-02	2002-03	2003-04	2004-05
LTIFR (per million hours worked)	19	11.4	12.1	12.1	13.6
Maximum effective dose (mSv)	8.6	8.7	9.7	9.8	10.2
Average effective dose (mSv)	0.8	0.9	0.8	0.8	0.8

The LTIFR result for 2004-05 shows that ANSTO has further work to do to achieve the target. Several significant initiatives have been implemented to address this issue. These include the use of external safety auditors to review operation of the ANSTO safety management system against international best-practice, and implementation of a suite of safety performance measures to help determine appropriate interventions to improve safety outcomes.

One pleasing trend in these indicators is that whole body (effective dose) for ANSTO employees has remained stable over recent years, despite increasing radiopharmaceuticals production.

In 2004-05, the ANSTO dosimetry service monitored 894 workers, 84 per cent of whom received less than 1.0 mSv whole body effective dose. Fifteen of the 21 workers with doses between five and 10.2 mSv were radiation workers involved in the production of radiopharmaceuticals either at our Lucas Heights or National Medical Cyclotron sites. To ensure employees receive as little radiation exposure as possible, we review work practices whenever staff receive an annual reading above 2.0 mSv. This is part of our policy of assuring safety at work for all personnel.

NB. The 2003-04 CSR report included a scorecard measuring 'Compliance with ARPANSA Commonwealth Licence' performance'. This scorecard has not been included this year as the approach was not sufficiently comprehensive in regard to safety performance. ANSTO is investigating whether to initiate a new benchmark for 2005-06 in regard to this area.

1.5 mSv

Millisieverts (mSv) are used to measure the effect of ionising radiation on living cells. On average, we are exposed to about 1.5 mSv a year in background radiation from all natural sources.

our environment

ANSTO's scientists work in areas that play a **key role** in delivering leading medical, industrial and environmental solutions.

1.6km

ANSTO's Environmental Management System guidelines include managing the 1.6 kilometre buffer zone around the facility.

ISO 14001

ANSTO's commitment to responsible stewardship of its environmental resources reached a new level last year, when it received ISO 14001 approval - the prestigious international environmental certification standard.

There are two aspects to ANSTO's relationship with the environment. The first is that we use our nuclear science capabilities to undertake environmental research. This research utilises both naturally occurring isotopes and radioisotopes manufactured in our nuclear research reactor to study environmental processes, issues and phenomena. We also apply non-nuclear science techniques in this area as well.

The second is the concerns some people have with organisations involved in using nuclear and radiological material. Even though our research reactor is small compared to many overseas facilities, and as such produces relatively small amounts of radioactive waste, we are nonetheless committed to minimising any negative impacts on the environment.

At the heart of this commitment is our Environmental Management System (EMS), which we constantly review and enhance. EMS activities include the study of airborne emissions from the site's stacks, treating wastewater, collecting meteorological data, monitoring ground and surface water, tracking resource consumption and managing the 1.6 kilometre buffer zone around the facility.

ANSTO's responsible stewardship of its environmental resources reached a new level last year, when it enhanced its previous part-site ISO 14001 certification to achieve full-site ISO 14001 certification – the prestigious international environmental management standard. Under this demanding standard, environmental management is not only about identifying environmental impacts but also about determining the most effective means of addressing issues. This standard also seeks to ensure proper planning and management of activities, so adverse impacts are minimised and continuous improvement is encouraged. ANSTO's EMS achieves these aims by maintaining detailed environmental management plans that address environmental aspects of ANSTO's operations and by setting performance targets.

As part of this holistic environmental management program, ANSTO is open to scrutiny from independent experts who conduct regular surveillance audits. One minor issue identified during a recent audit, for instance, was that the EMS was not centrally managed. ANSTO is appointing an environmental management committee to address this issue. At the same time, recent independent audits recognised that major efforts have been made to reduce the volume of printed material used to document the facility's EMS.

Perhaps the most significant benefit of ISO 14001 certification has been the realisation that environmental responsibilities do not involve only a few members of staff. Rather, it is a shared task that includes every operational area and team member throughout the organisation.

Going Bush at ANSTO

For numerous community members, the best thing about ANSTO is not the nuclear medicine we produce or scientific research we undertake, but our 1.6 kilometre buffer zone – largely natural bushland – which is home to amazing flora, fauna and even works of art that pre-date European settlement.

"ANSTO's buffer zone not only lessens concerns about public safety but also provides a sanctuary for wildlife, enhances the scenic amenity of the area, provides passive recreational opportunities for the local communities, protects rare and endangered flora and fauna, and retains an important record of the environment that existed prior to urban development," explained Jim Bannister, ANSTO Facilities Manager (pictured below with Les Bursill).

It wasn't always in such good condition. Jim said that when clean-up work on the buffer zone started some years ago, more than 1 500 tonnes of rubbish and 150 abandoned cars were removed from the zone. Jim said the bushland now, "pretty much takes care of itself," although the Australian Federal Police help out by maintaining perimeter fencing and signage.

"There are about six kilometres of bush tracks in the zone that cross a number of different plant communities containing several hundred different species, so there's always something in bloom," said Lloyd Hedges, a long-time member of the Menai Wildflower Group.

150

...when clean-up work on the buffer zone started some years ago, more than 1 500 tonnes of rubbish and 150 abandoned cars were removed...

Lloyd's group, in conjunction with ANSTO, published a bushwalker's guide to the area in 2003.

Some locals, and even ANSTO employees, would be surprised to learn of the diversity of wildlife that traverses the area. While eastern grey kangaroos are fairly noticeable, less obvious species include echidnas, long-nose bandicoots, grey-headed fruit bats and several species of possums. The region is also rich in reptiles such as skinks, geckos, lace monitors and snakes.

Perhaps the area's most stunning wonders, however, are the rock artworks. Local anthropologist and a descendant of the Tharawal tribe, Les Bursill, said the region contains many large rock carvings, including one depicting a kangaroo and another portraying an Aboriginal hunter.

"These images, along with so many others in the region, give us a record of the area's earliest settlers," Les said. "Some people believe that several Aboriginal communities lived in this area, but from what we've found so far, the images are all in pretty much the same style, which is that of the Tharawal community."

Les said that some of these artworks have been adversely affected by the weather, as well as by bushwalkers and bike riders.

"ANSTO has done a good job managing this area and we hope we can work together to perhaps come up with some funding to help preserve these Aboriginal carvings," Les said.

Jim concurs with Les's assessment, saying that while much of the area now looks after itself, additional funds are used to help control weeds, foxes, feral cats, rabbits and other pests.

Internally, a group of outdoor enthusiasts have formed a bush care group to help keep weeds from spreading and to regenerate other sections of bushland within the facility's immediate surroundings, before eventually moving into the buffer zone.

"Many of us at ANSTO appreciate the wonderful environment surrounding us and, when possible, like to go for a bushwalk or even do some bird-spotting during the lunch break," said Emmy Hoffmann, an Environmental Officer at ANSTO.

Taking Control of Radioactive Emissions to a New Level

Background radiation is naturally present in our environment. It comes from minerals in rock and soil, the air we breathe, and even the food we eat and the water we drink. Our bodies also contain naturally occurring radioactive trace elements. We also receive small doses of man-made radiation from smoke detectors, X-rays and radioactive materials used in medicine, industry and agriculture.

Background radiation rarely draws much attention, yet the same cannot be said for the relatively low levels of radiation emitted by nuclear facilities such as ANSTO, which are closely scrutinised to ensure public safety.

ANSTO technicians have developed sophisticated measuring systems that produce detailed analyses on a daily, weekly and monthly basis to ensure that all emissions – whether it is from the HIFAR stack, the molybdenum (isotopes used in nuclear medicine imaging) production facility, the main radiopharmaceutical manufacturing building or at the National Medical Cyclotron – are within guidelines set by ARPANSA.

ANSTO scientists and engineers have even implemented far stricter emission guidelines than the regulator guidelines, and have developed their own sophisticated software that provides 24/7, real-time data covering the facility's major emission stacks.

Ned Blagojevic, Senior Professional Officer at ANSTO (pictured above), said the organisation undertook a major review of the stack monitoring program several years ago to, "ensure the protection of human health and safety and the environment as our highest priority."

While earlier monitoring systems provided accurate and regular data, Ned said that ANSTO sought to, "implement a system that gave us even more detailed analysis or a fingerprint on each part of the nuclear medicine process."

Ned said the benefits from the new system created by ANSTO staff include:

- a method of automating monitoring
- upgrading of older systems
- an immediate alert if problems occur
- data storage for review
- user-friendly access to data by ANSTO personnel.

Additionally, Ned said that when ANSTO started investigating off-the-shelf computer solutions, the options were far too complex, expensive or unable to meet ANSTO's needs. The system developed internally cost less than $20 000, much less than any other available option.

"We have the expertise in all aspects required for this project – from the radiation detection capability to the computer networking – so once we developed a system for one area, we simply cloned it and are now commissioning it at other relevant locations," Ned said.

environment **commitments**

- Ensure that there is no significant impact on the environment as a consequence of ANSTO's operations.
- Seek and adopt ways to continually improve the environmental management system.
- Promote environmental awareness throughout the organisation.

24/7

ANSTO scientists and engineers have developed their own sophisticated software that provides 24/7, real-time data covering the facility's major emission stacks.

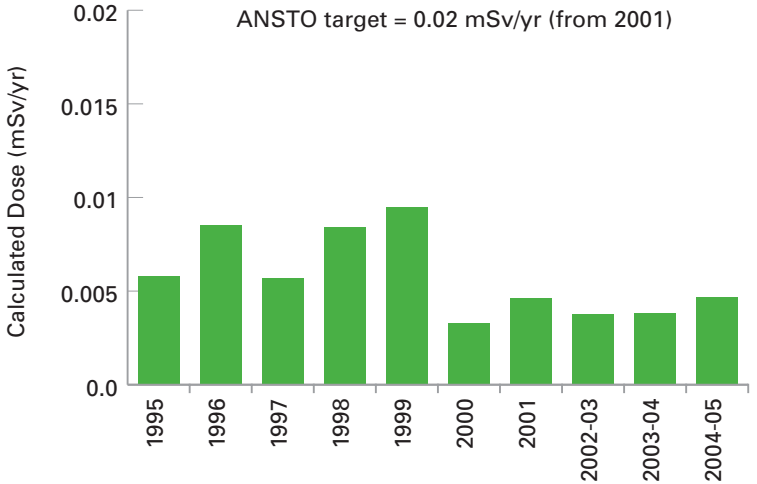
environment scorecard

The calculated airborne dose at the edge of ANSTO's buffer zone provides an upper limit to the amount of radiation added to natural background radiation for those people living closest to the nuclear research reactor.

Credible exposure scenarios for people who could receive a radiation dose from ANSTO's liquid effluent releases, including through fishing at Potter Point (near Cronulla) or using bio-solids or treated water from the Cronulla sewage treatment plant, were calculated to be less than 0.0005 mSv/yr.

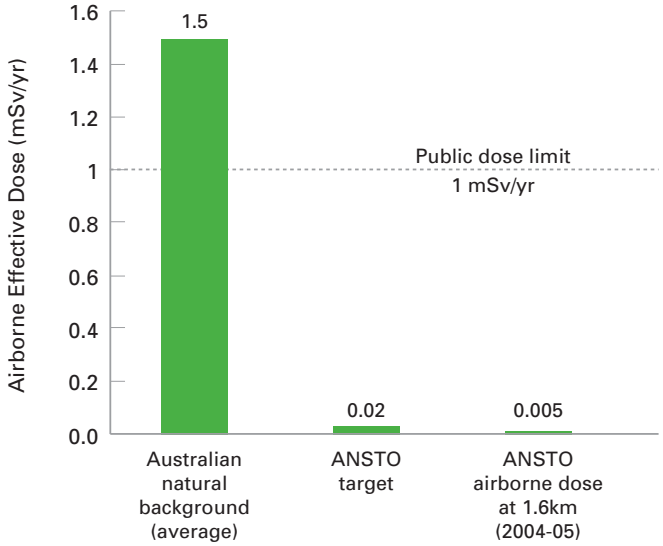
All liquid discharges to sewer in 2004-05 met the water quality requirements for trade wastewater. For the past decade, the monthly average radioactivity in liquid effluent also remained well below the limit specified by successive trade wastewater agreements, ensuring that drinking water guidelines for radioactivity are met at the Cronulla sewage treatment plant. Since 2002, monthly radioactivity levels have been consistently below 25% of the limit.

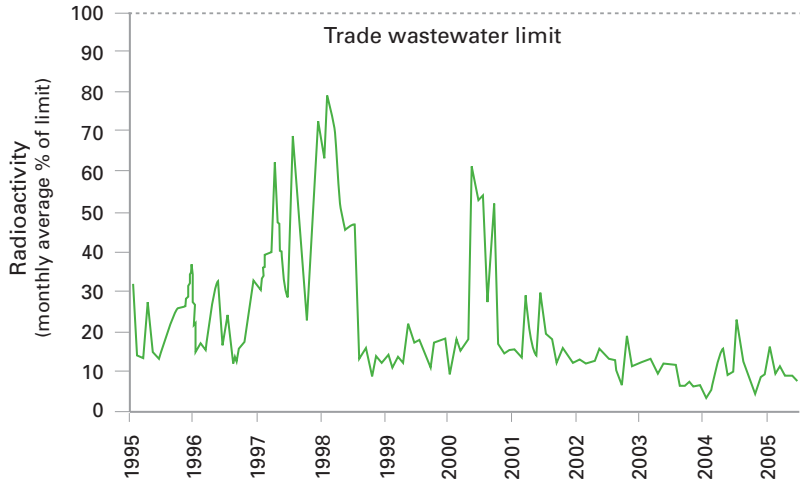
The past decade's calculated airborne dose at the buffer zone edge is based on radiation measurements at source and meteorological information. The maximum dose, usually in a northerly direction from ANSTO, has consistently been below the ANSTO target of 0.02 mSv/yr and has tended to decrease in recent years.



At a maximum of 0.005 mSv/yr in 2004-05, this is well within ANSTO's target of 0.02 mSv/yr and is less than 0.4% of the average dose of 1.5 mSv/yr that people in Australia receive from natural background radiation.

0.02 mSv/yr (from 2001)


Airborne Effective Dose (mSv/yr)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0.0
1.5
0.02
0.005
Public dose limit
1 mSv/yr
Australian natural background (average)
ANSTO target
ANSTO airborne dose at 1.6km (2004-05)


Radioactivity
(monthly average % of limit)
Trade wastewater limit
100
90
80
70
60
50
40
30
20
10
0
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005

our employees

The way an organisation treats its employees is a crucial indicator of commitment to corporate social responsibility.

ANSTO's efforts in this area have evolved significantly to keep pace with the needs of a workforce that is multi-skilled and work in different areas that range from industrial workshops to nuclear medicine production, and from scientific laboratories to desk-bound administration.

building a better workplace

ANSTO employee relations management is based on clear policies. The organisation respects the rights of every employee and encourages them to maximise their capabilities.

To this end, ANSTO offers programs designed to help staff at all levels of their professional development. We constantly seek to improve these programs, as demonstrated in the recent revision of our coaching program, *Working Successfully at ANSTO*, and a new online health and safety program.

Rowena Fraser, ANSTO's Learning Development Manager, said participants appreciated the opportunity to take part in individual development activities incorporated into the *Working Successfully at ANSTO* program. "We are pleased to report that 95 per cent of current course participants rated the new-look program as 'good to very good'," she said.

Demonstrating its commitment to a safe and healthy work environment, ANSTO is trialling an online program called *Building a Better Workplace*. This program aims to provide insight into areas such as workplace rights and wrongs, privacy matters, harassment and equal employment opportunities (EEO), with future modules to include OH&S, bullying and ethics. The program was trialled in the organisation's Human Resources (HR) unit during the past reporting period, and will be refined and rolled out through ANSTO in the new financial year.

ANSTO is developing a series of new management and coaching programs designed to, "open the channels of interaction and communication between colleagues at all levels of ANSTO," Rowena said.

Recent statistics compiled in the Employee Relations Scorecard reflect favourably on ANSTO's aim to have a zero-harm workplace that provides equal opportunities for both personal growth and professional advancement.

"We're extremely proud of the steps we have taken towards supporting an environment of personal responsibility and career development, and developing the skills our staff require to be successful, but we have a number of future opportunities that we can also address," Rowena said.

95%

95 per cent of current course participants rated the new-look *Working Successfully at ANSTO* program as 'good to very good'.

Leading from the 'Frontline'

ANSTO is seeking new and innovative ways to deliver training programs that result in win-win situations for both individuals and the organisation. One example is the overhauling in the past year of our *Diploma in Frontline Management,* which has turned around staff participation in this program.

The *Diploma in Frontline Management* was piloted in 2002. Designed to deliver management and leadership learning and development for ANSTO personnel, many participants either dropped out or fell behind in coursework over the three-year period. Clearly changes were required for the course to meet staff needs.

One of the original participants was Paul Argall (pictured below left), General Foreman of the Engineering Services Development Workshop at ANSTO.

"There was a need to introduce a management development program to provide managers and supervisors with leading management skills, and to also provide development opportunities for future supervisors," said Paul. "We have lots of people who are very gifted technically but not necessarily experienced when it comes to helping and leading others. Despite the original program's best intentions, many had trouble keeping up with the course demands."

The program was dramatically revamped, offering improvements such as online learning and submission of assignments, with a greater emphasis on actual workplace applications, including managing change and innovation, promoting a safety culture, time management issues, greater focus on customer service and continuous improvement.

"I'm certainly glad I stuck with the course, because it has given me a much greater

sense of time management as well as a concern for other team members and the ability to motivate both myself and others," Paul said.

Paul has now completed Bachelor and Masters degrees in Adult Education from the University of Technology, Sydney as a result of his training experience.

Paul said the change in other *Frontline Management* graduates has been equally positive. "Like so many others, one recent graduate is a senior tradesperson who had limited experience in managing or leading others," Paul said.

"He's now the first one to put up his hand when a problem arises and is willing to take charge when something goes wrong to find a solution."

Rowena Fraser echoed Paul's reaction. She said all 20 participants in the new-look course were keeping up with the workload and were on target to graduate as scheduled. In the original program, only 28 out of 65 participants completed the course.

"The feedback is that the course is now far more flexible, up to date, and provides useful, practical exercises relevant to our staff's day-to-day activities," she said.

Participants have online access to resources such as the Harvard University Management Resource and ongoing support from their Swinburne University tutor.

Paul said that customer relations had improved since the training program was established. The program also offers people help with general life skills, giving them the confidence to go out and manage a local sporting club, for instance, or some other social organisation.

Dr George Collins, Chief of Research, also believes the course is vital, benefiting both the individuals and the organisation as a whole. "Programs like *Frontline Management* offer a marvellous opportunity for researchers and engineers who've previously concentrated their efforts on their technical capabilities," he said.

"There are many benefits that come out of this program, but among the most valuable are the emphasis on leadership, the need for working collaboratively and that the knowledge that sound management practices are important, even in a research environment."

employee **commitments**

- To provide equitable employment opportunities for all.
- To create an environment where everyone is encouraged to reach their full potential through learning and development opportunities.
- To foster a workplace environment where everyone can speak freely about both the good and bad points without fear of recrimination.
- To develop online programs that deal with EEO, sexual harassment, learning and development, and privacy issues.

Enterprising Solution To Workplace Disputes

Workplace problems that lead to formal grievances or long-running industrial relations disputes rarely benefit either party. ANSTO's HR team is attempting to resolve disputes early by encouraging informal discussion of industrial relations issues before moving along the formal dispute resolution process contained in the Enterprise Agreement (EA).

"No one wants workplace unrest – particularly over fairly minor or inconsequential matters," said Patrick Blades, ANSTO's Human Resources Manager. "It seemed that we could informally discuss many problems with employees and their union representatives before referring the matter to the Executive Director and then to a three-member reference panel.

"The results have been positive, with the number of reference panels falling from 15 in 2004 to just two in 2005," Patrick explained. The number of grievances filed remained about the same over the past two reporting periods.

Feedback about changes in grievance handling from ANSTO's two largest unions – the Australian Manufacturing Workers Union (AMWU) and the Commonwealth Public Sector Union (CPSU) – has not been quite so positive.

David Hill, Acting President of the CPSU, said that he was still concerned about the number of grievances being filed and about moves by management to alter the wording for dispute resolution contained in the EA.

"Many grievances dealt with issues such as objective setting and salary reviews, which were almost always awarded in favour of our union members," David said. "There's some concern that changes to these procedures have more to do with making it more difficult for our members to raise grievances than towards improving handling of industrial relations issues."

Warren Hart, the local AMWU committee Secretary, agreed with this assessment. "There have been some positive moves in this area but there are still way too many cases in which management does not follow prescribed assessment procedures," he said.

Both union representatives said most cases involved disagreements over objectives involving an employee's job and wage assessment. Invariably these cases end up in favour of the staff member simply because managers do not follow the steps laid out in the EA grievance dispute process.

"A significant number of workplace disputes at ANSTO occur as a result of inadequate management/supervisory training of middle managers," David said. "It's difficult for scientists, who spend much of their career working in small teams, to suddenly find themselves in charge of much larger groups and be able to do so successfully. But this is the area that we believe requires the most attention at present."

Patrick says: "We realise that the system isn't perfect. We are continually seeking ways to improve training for managers and supervisors. It's also fair to say that we have made progress over the past 12 to 18 months regarding industrial relations issues, and if we all seek to enhance our reputation as an employer of choice, we need to keep improving the ways in which both sides strive to work together more closely."

employee scorecard

Total Separation Rate

Years	2001	2002	2003	2004
ANSTO	9.5%	11.0%	20.7%	8.23%
AHRI*	16.01%	13.59%	15.06%	13.24%

** Median as reported by Australian Human Resource Institute*

This table represents the proportion of employees who left ANSTO for any reason during the calendar year (data for 2005 calendar year was not available at time of publication). The figure for 2003 was higher than previous years or the following year due to a large number of voluntary redundancies and retirements. ANSTO's separation rate when compared with the median reported by the Australian Human Resource Institute (AHRI) is notably lower.

ANSTO Training Investment per Employee 2004

Years	2003	2004
ANSTO	$1 937	$1 177
AHRI*	$1 021	$1 100

** Median as reported by Australian Human Resource Institute*

The above figure represents the average training cost per employee (excluding trainee time costs). The investment per employee has reduced since 2003, but still aligns with the Australian median as reported by AHRI.

ANSTO Workforce Age Profile 2004

Age Group	15-24	25-34	35-44	45-54	55+
ANSTO 2004	6.2%	18.4%	27.1%	30.1%	18.2%
Australian Workforce Age Profile**	19.5%	22.9%	23.7%	21.5%	12.4%
Australian Population Age Profile**	19.4%	20.5%	21.3%	19.3%	19.5%

*** Business Work & Ageing Centre for Research, Swinburne University of Technology as at June 2005*

The above figures show that ANSTO has an 'ageing' workforce (this data was included for the first time in this year's CSR report). A contributing factor to ANSTO's ageing profile is our low separation rate (noted above). This is because many employees spend their entire careers working at ANSTO. While such organisational loyalty is admirable, ANSTO's ageing profile will pose succession management challenges over the next five to 10 years, with an anticipated increase in the number of retirements. We are looking closely at how we retain and capture our corporate knowledge and ensure that our staff have the necessary skills and knowledge when key individuals retire.

Number of ANSTO staff from a Non-English-Speaking Background June 2005

Male: 127

Female: 33

Total workforce: 859

our community

ANSTO is a crucial part of Australia's science and technology infrastructure. Australian industry, for instance, uses radioisotopes and neutron beams to improve productivity and gain information that cannot be obtained via other means.

With the Federal Government providing much of ANSTO's funding, we are aware of the need to operate in the interests of all Australians. To this end, we seek to engage with communities around the country to enhance their understanding of how nuclear science impacts on their lives.

national gold award

ANSTO also produces publications ranging from its regular 'fact sheets' through to the new ***Velocity* e-magazine**, which in 2005 took out a Public Relations Institute of Australia national gold award.

For example, ANSTO works closely with the Sutherland Shire Economic Development Committee to attract new industry to the area. This includes contributing to discussions and the development of a business incubator, which could become part of ANSTO's established technology park.

"We're very keen to support growth of new businesses in the region, and to add value to these companies by giving them access to the vast array of human and technological expertise available at ANSTO," said Rick Dowd, ANSTO's representative on the committee.

At the same time, ANSTO welcomes school and civic groups for tours of our site. ANSTO staff also 'hit the road' to provide outreach presentations to these groups.

"There are many important messages in our presentations," explained Martha Halliday, ANSTO's Community Liaison Officer. "These relate to our research and the services we provide, as well as the organisation's willingness to engage in a dialogue with our stakeholders, and the safety and security of our operations."

ANSTO is a strong supporter of community science fairs and expos, and staged or held special events including *Materials Science Day @ ANSTO* and *Science in the City* at the Australian Museum in Sydney. ANSTO also sponsored many local science awards, as well as NSW's *Young Scientist of the Year* competition.

In conjunction with other leading research agencies, ANSTO launched *Careers in Science*, a program to encourage more students in Years 9-10 to pursue careers in science, technology and engineering.

"Science affects everything we do," said Craig Pearce, Manager, Corporate Communications at ANSTO. "It's also the best way of gaining greater understanding and appreciation of the world we live in.

"Research indicates that most young people seek jobs that are interesting, satisfying, provide travel opportunities and offer a fast-paced work environment. Science careers not only offer this but also give people a great chance to make a difference to the world we live in."

ANSTO also produces publications ranging from its regular 'fact sheets' through to the new Velocity e-magazine, which in 2005 took out a Public Relations Institute of Australia national gold award.

"I find Velocity very interesting but I get more out of it by sharing it with my two boys aged 12 and 15," said one subscriber. Another said: "In one issue, Velocity lets me know accurately more about what Australians are doing in science than the mass media do in a year."

Community Reaction to Nuclear Science

The first controlled atomic chain reaction in the southern hemisphere occurred more than 50 years ago and community opinion still ranges widely between ardent supporters and those who remain unconvinced of nuclear science's benefits.

According to independent research conducted in 2003, most Australians support the need for continuing development of our nuclear science and technology capabilities. However apprehension from some parts of the community related to the perception that ANSTO did not act as openly and honestly as it could in responding to questions regarding safety, health and environmental issues.

Mr Derril Greenway, Director of Property for the Sutherland Shire, said much of the concern from local community members relates to the view that ANSTO is still too secretive in its operations. "We recognise that it's difficult to disclose details on everything they do, but it's easy to see why people have the perception that ANSTO is hiding something whenever they fail to provide full disclosure for incidents involving their operation," he said.

"At the same time, we recognise the great value ANSTO brings to the local community, not only as a resource for unparalleled scientific expertise, but for the opportunity to fast-track development of other new commercial enterprises through the growth of their business and technology park."

As part of its regular out-reach program, ANSTO regularly convenes Community Discussion forums where people come together with ANSTO representatives to express their own views on nuclear-related topics – both for and against – as well as to learn more about the organisation's activities.

Cathie Johanson of Sylvania attended a Community Discussion to learn more about ANSTO. While she appreciated the effort by ANSTO representatives to ensure the meeting was kept informal and open, she did not believe the community members were given equal time to have their questions answered.

"While their presentations were informative, a good deal of the science material was a bit hard to follow with technical jargon that might have intimidated some people," Cathie said.

"I also felt my questions relating to nuclear safety, the cost of the new reactor and just what the worst case scenario for a leak would be – went unanswered," she said. "While it's good to have some background and information on new

developments at ANSTO provided at the beginning of the meeting, there should be more time devoted to our questions."

Another Community Discussion attendee, Margaret Bradford of Engadine, agreed, saying she'd hoped that there would have been more time devoted to answering the questions posed by the 30 community members.

"While I gained some new insight into the work performed at Lucas Heights, I'm still not clear why we need such a large reactor to produce the radioisotopes used in nuclear medicines," Margaret said, before adding that there is, "too much emphasis in the media on the use of medical isotopes to 'save lives' when 99% of these are used for diagnostic purposes only."

Two other attendees, Bruce and Jean Peters of Peakhurst, are fully supportive of ANSTO's activities. "We fully endorse the work they undertake, both as a manufacturer of radioisotopes for use in human health as well as other applications," said Bruce.

"If anything, we'd like to see them promote their activities even more because of how much these developments benefit not only Australians but overseas communities as well," he added.

50

The first controlled atomic chain reaction in the southern hemisphere occurred more than 50 years ago...

ANSTO Offers Nuclear Science Teaching Resource

A new program developed by ANSTO provides Australian students and teachers with user-friendly information about nuclear science and technology.

The key reason for developing this resource – *Nuclear Science in Society* – was to help Year 7-10 students better understand the basic elements of nuclear science, according to Dr Ian Smith, ANSTO's Executive Director.

"Nuclear science has wide-ranging applications and is a complex technology," said Ian. "This resource, however, is easy to understand, topical and user-friendly, and we hope it will enhance science's attractiveness as a subject.

"We also believe that as Australia's only nuclear facility and one of the country's leading science organisations, we have a responsibility to give young Australians the opportunity to gain a clear understanding of nuclear science as part of their education."

The resource, available online at www.ansto.gov.au/edu and on CD-ROM, gives students an insight into key issues involving nuclear science, such as radioactivity, life in the nuclear age, applications of nuclear energy, and past and future roles of nuclear science in society.

Craig Pearce said the resource had been well-received by schools across Australia. The program was developed in close consultation with Australian science teachers associations and state science education departments.

"Nuclear science and technology figures in many people's lives on a near-daily basis," pointed out Craig. "From life-saving nuclear medicine treatments and therapy to smoke detectors in homes, the applications of nuclear science are all around us.

"Life in the nuclear age presents many exciting but complex opportunities that require information and understanding – particularly among young people. This includes problematic issues such as preventing the spread of nuclear weapons, radioactive waste storage, and security and safety," Craig said.

Feedback from teachers and students in many states has been extremely positive. A teachers group in NSW said, "This resource encourages students to find a meaningful learning context…Nuclear Science in Society is easy to read, and to navigate. Teachers are provided with options so they can use it in a variety of ways. It suits a variety of teaching and classroom management styles."

Ian said, "Research undertaken by ANSTO in late 2003 identified that more than 90% of those surveyed believed we should be educating young people in schools on nuclear science. We hope that by doing this we can encourage more young people to consider a career in science as well as enhance their scientific literacy."

community scorecard

In real terms, website visitation rates mean that during every hour of the year, at least 40 people visited the ANSTO site. (A unique visit is when a new visit to the actual website occurs – one person may make more than a single visit, but the visits need to be separated by more than 30 minutes to be counted as two visits).

In 2004-05, 4 225 members of the community toured ANSTO. Martha Halliday said many people become ANSTO supporters long before they even complete their site tour. "People are often amazed at what happens here," she said.

"This is one reason we encourage people to come to ANSTO and take a look at the range of research and activities we undertake. Another is to be transparent and accessible.

"We also answer many enquiries about ANSTO, which range from schoolchildren seeking assistance with science projects, through to diverse requests for our expertise, services and products. "

What's new?

- We have included a formalised community scorecard, making good our promise from the 2003-04 CSR report.

What's next?

- We hope to be even more proactive in reaching out to community members – both in the local region and across Australia.
- We plan to customise tours for school students to meet particular areas of interest, study or focus.
- We are enhancing resources we offer to support teachers.

	2003-04	2004-05
Number of ANSTO site tours	#	150
Total tour attendance	2 420	4 225
Off-site community presentations	#	14
General enquiries	320	95
Unique website visits	434 693	505 944*

* *Our web technology does not currently allow us to provide accurate web stats. We do believe, however, these are relatively accurate estimates.*

\# *Figures were not compiled for this period.*

our community **commitments**

- To actively engage with the Australian community openly and frankly.
- To respond to media and other inquiries quickly.
- To foster greater awareness of the benefits that nuclear science brings to Australia.

our science

ANSTO has an important role in Australian science through management of its major facilities. It is also committed to excellence in its own research. To help achieve this goal, it focuses on key areas where nuclear science and technology can make a real impact and pursues appropriate and genuine collaborations.

"We're engaging other public and private-sector organisations in our research in such areas as environmental sustainability, food safety, climate change, ageing disorders and national security," said Dr George Collins, ANSTO's Chief of Research.

2004-05

Other leading research collaborations undertaken during 2004-05 include the development of new radiopharmaceuticals that could be used to fight cancer and respiratory diseases, and the development of better ways to deal with radioactive waste.

The past financial year reflected this growing sense of collaboration with other leading research organisations. For example, a major project that involves future water supply options for Australia made major progress last year.

"ANSTO and University of Technology, Sydney researchers established the relationship between loss of forests and changes in rainfall patterns," George said. The project used stable water isotopes to identify the cycling of water through transpiration, evaporation and run-off.

Another exciting development is the work undertaken with Food Science Australia, the CSIRO Food Futures Flagship and the Australian Food Safety Centre of Excellence on improving food safety.

"In this project, we're using neutron and X-ray scattering to seek ways to not only improve food safety but enhance our understanding of how bacterial and fungal spores respond to new food processing methods," George said. This project will also look at food processing procedures, to ensure they do not adversely affect nutritional value.

As highlighted elsewhere, ANSTO's science expertise is playing a key role in Australia's counter-terrorism research and national security programs. As well, ANSTO, the Defence Science and Technology Organisation, CSIRO and Geoscience Australia have formed the publicly funded Agencies' Collaborative Counter-Terrorism program to enhance science, engineering and technology support for the country's counter-terrorism requirements.

Other leading research collaborations undertaken during 2004-05 include the development of new radiopharmaceuticals that could be used to fight cancer and respiratory diseases, and the development of better ways to deal with radioactive waste.

Plants That Iron Out Soil Heavy Metal Contamination

A little-known group of plants that thrive on high levels of potentially toxic metals such as arsenic, cadmium, lead, nickel, zinc, manganese, cobalt and copper could provide an eco-friendly way to clean contaminated soil.

These plants, known as hyper-accumulators, figure prominently in the research work of ANSTO's Dr Naveen Bhatia (pictured right), an Australian Synchrotron Research Program Fellow. He said these plants could provide a cheap, 'green' method of cleaning contaminated agricultural and industrial sites. Indeed, some species of metal hyper-accumulators are already being used in the United States and Europe to remove toxic waste from polluted soil in mine dumps and from around smelters and other mining activities.

It's an exciting discovery for scientists worldwide, because the plants offer a low-cost alternative to the conventional treatment of metal-contaminated soils.

"It's a win-win situation because not only do these plants offer a relatively less expensive way to clean up polluted soils, but they also can reinvigorate once-contaminated soils for traditional crops and potentially provide a profit centre from the harvesting of their own metal content," Naveen said.

He said these plants developed their peculiar taste for metallic elements over hundreds of thousands of years, perhaps preferring to put down roots in contaminated soils where there was less competition from other species.

While most plants wilt from contact with such metals as arsenic, mercury or lead, hyper-accumulators have developed a highly complex system in which the metals that are pumped inside the roots are converted into less harmful compounds. These compounds are transported above ground and stored in stem and leaves.

One of the hurdles for scientists, however, is the fact that most of these plants grow slowly.

However, Naveen said that the genes that enable these plants to absorb metals could be inserted into faster-growing species.

"Seeds from these robust plants could then be scattered in fields contaminated with heavy metals from fertilisers or industrial pollution," Naveen said. "The plants could then be left to clean up the soil and then we could harvest and incinerate them and cement the ash in waste disposal sites, or harvest metals from low-grade mineral ores."

Helping this work is the synchrotron – a powerful micro-analytical tool that allows matter to be observed at the atomic-scale level. It accelerates electrons at the speed of light and focuses the resultant bright light towards a tiny area in a sample. Complex computer analysis provides the sample's molecular structure based on the image and information gathered by the machine's detector.

Naveen also applies complementary X-ray and gamma-ray nuclear techniques using ANSTO's high-energy, heavy-ion microprobe to produce two-dimensional fluorescent maps of metals in different plant tissues.

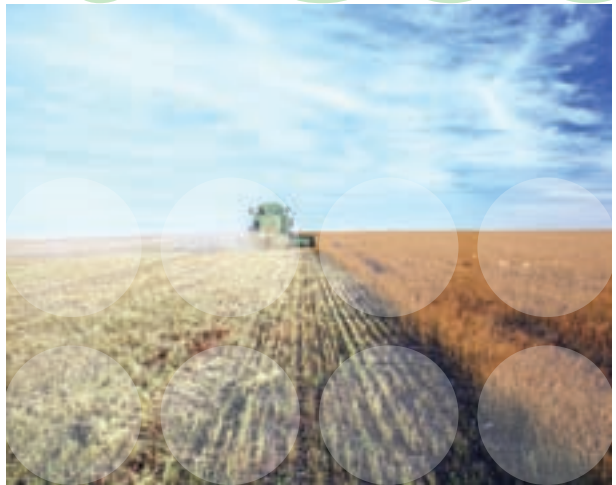
Naveen is one of many Australian scientists who access international synchrotron facilities in the United States and Japan through the Australian Synchrotron Research Program, which is managed by ANSTO with funding from the Department of Education, Science and Training. This access allows him to continue his work on metal-extracting plants.

"Since the industrial revolution, pollution levels in Australia have increased dramatically and several of the heavy metals have started to enter our food products," Naveen said. "This is because agricultural fields often receive large amounts of fertilisers to increase productivity of agricultural crops. These fertilisers are also the source of a variety of heavy metals that are absorbed by the plants and make their way into our food chain.

"The majority of these metals have carcinogenic properties and, since Australia already has one of the highest cancer rates in the world, the removal of such nasty metals from the soil in which agricultural crops are grown is of paramount importance."

It's an exciting discovery for scientists worldwide, because the plants offer a low-cost alternative to the conventional treatment of metal-contaminated soils.

discovery



ANSTO Lends Expertise to Regional Security

ANSTO is playing a key role in an Australian Government counter-terrorism initiative to help neighbouring countries safely and securely manage their radioactive materials.

"The Government has provided ANSTO with $4.5 million for a three-year outreach program that is assisting countries in our region to improve the control of radioactive sources and prevent their illegal or malevolent use," said Allan Murray (pictured below left), Project Leader for the Regional Security Radioactive Sources Project.

The multi-level program, which is operating in collaboration with related programs of the International Atomic Energy Agency (IAEA) and the US National Nuclear Security Administration, identifies and manages the risks associated with the safety and security of radioactive materials widely used in medicine, industry, engineering, agriculture, oil exploration and food processing.

Allan said that some isotopes, such as caesium-137 and cobalt-60, used in the irradiation sterilisation of medical products and, in the past, for the treatment of cancer, are highly radioactive. Another isotope, iridium-192, is widely used in the radiographic examination of pipes and other metallic parts used, for example, by the oil and gas industry. Many industrial gauges also contain radioactive sources.

While the radioactive component of a device or gauge can be as small as a headache tablet, if it is placed with conventional explosives and detonated in what is commonly known as a 'dirty' bomb, it could contaminate an area the size of a few city blocks, leading to considerable business and social disruption, public anxiety and clean-up costs.

"As well as urging countries to update their regulations and standards, and adopt the IAEA Code of Conduct on the Safety and Security of Radioactive Sources, we are providing the strategic advice, expert knowledge and hands-on technical experience to assist the users and regulators in these countries to better control and manage their radioactive sources," Allan said. "This also improves and sustains the network of regional technical cooperation."

During the program's first year, Allan and fellow ANSTO team members undertook more than 1 200 hours' work on the ground in Indonesia, the Philippines, Papua New Guinea, Brunei, Singapore, Laos, Cambodia and Vietnam. The team have also conducted technical workshops and information seminars in Sydney for more than 70 participants from 18 South-East Asian and South Pacific countries. They have also conducted training and professional development programs that cover the latest methods and techniques for planning, searching and securing vulnerable radioactive sources.

"We are also providing assistance to help nations control radioactive sources, and the way in which they track and detect these sources," Alan said. "These activities will improve regional capabilities to detect, and thus deter, unauthorised movements within a country or across regional borders."

science **commitments**

- To continually improve our delivery of nuclear-based scientific tools and techniques in conjunction with other world leaders from industry and the public sector both in Australia and overseas.
- To foster active networks within the scientific community both nationally and internationally.
- To improve awareness of our regional and international roles in nuclear-related scientific activity.

The Australian Nuclear Science and Technology Organisation (ANSTO) is this country's nuclear research and development agency. We deliver market-leading products and services to public and private sector organisations in medicine, mining, aerospace, minerals, agriculture, manufacturing and the environment.

Our 850+ staff primarily conduct these activities at the ANSTO headquarters located on the outskirts of southern Sydney. This site contains the nuclear research reactor, the High Flux Australian Reactor (HIFAR), to be retired in 2007 and replaced by OPAL, the Open Pool Australian Light-water reactor. We also operate the National Medical Cyclotron, an accelerator facility at the Royal Prince Alfred Hospital in Camperdown, near central Sydney.

For more information, go to www.ansto.com.au or call (02) 9717 3111.

Australian Government

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Corporate Social Responsibility report on the web: www.ansto.gov.au/info/csr

Public information
ANSTO produces regular updates on its science and technology, has available a range of publications and we conduct free tours of our site. For bookings, information or to be listed on our database, call (02) 9717 3111 or email enquiries@ansto.gov.au

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