



Australian Government

Department of Foreign Affairs and Trade



AUSTRALIAN SAFEGUARDS AND NON-PROLIFERATION OFFICE REGULATORY PERFORMANCE FRAMEWORK SELF-ASSESSMENT REPORT 2017 - 2018

December 2018

STATEMENT

This performance report is prepared for the Government's Regulatory Performance Framework (RPF) and covers financial year 2017-18. The report presents the Australian Safeguards and Non-Proliferation Office's (ASNO) performance during the reporting period and complies with the RPF requirements against the new self-assessment metrics approved by the Foreign Minister in November 2017.

OVERVIEW OF ASNO'S REGULATORY FUNCTIONS

The principal focus of Australian Safeguards and Non-Proliferation Office (ASNO) is to enhance Australian and international security through activities which contribute to effective regimes against the proliferation of nuclear and chemical weapons. ASNO is a federal regulatory authority covering all States and Territories. ASNO's legislation affects organisations or individuals holding nuclear material, associated material, equipment and technology, or those producing, using or importing Chemical Weapons Convention (CWC)-Scheduled chemicals and those producing discrete organic chemicals. Australia's permit and reporting systems ensure that ASNO is able to track relevant materials and activities, gather information, and report to the International Atomic Energy Agency (IAEA) and the Organisation for the Prohibition of Chemical Weapons (OPCW).

ASNO's domestic regulatory functions ensure that Australia complies with treaty commitments related to nuclear safeguards and security, chemicals that have the potential to be used as precursors to, or used as, chemical weapons, and that the public is protected through the application of high standards of control on relevant materials. ASNO also works to strengthen the operation and effectiveness of relevant treaty regimes through the application of specialist knowledge to complex policy problems and proposals in technical areas, including treaty verification and compliance.

The *Nuclear Non-Proliferation (Safeguards) Act 1987* (Safeguards Act) forms the legislative basis for ASNO's nuclear safeguards and security activities across Australia. The Safeguards Act also establishes a system for control over nuclear material and associated items in Australia through requirements for permits for their possession and transport. The Safeguards Act is augmented by the *Nuclear Non-Proliferation (Safeguards) Regulations 1987* (Safeguards Regulations), the *Nuclear Safeguards (Producers of Uranium Ore Concentrates) Charge Act 1993* and the *Civil Nuclear Transfers to India Act 2016*.

The Safeguards Act gives effect to Australia's obligations under:

- the Treaty on the Non-Proliferation of Nuclear Weapons (NPT);
- Australia's Comprehensive Safeguards Agreement and Additional Protocol with the IAEA;

- 25 nuclear cooperation agreements in force covering 43 countries (the agreement with Euratom currently covering 28 countries) concerning exports of uranium and cooperation in peaceful uses of nuclear energy;
- the Amended Convention on the Physical Protection of Nuclear Material (CPPNM); and
- the International Convention for the Suppression of Acts of Nuclear Terrorism.

The *Chemical Weapons (Prohibition) Act 1994* (CWP Act) and Regulation 5J of the Customs (Prohibited Imports) Regulations 1956 form the basis for ASNO's chemical regulatory activities across Australia to fulfill Australia's obligations under the Chemical Weapon Convention (CWC). The CWC prohibits the development, production, acquisition, stockpiling, retention, transfer and use of chemical weapons. Its verification regime is based on declaration by States Parties of facilities and activities dealing with particular chemicals, and on confirmation of compliance through on-site inspections. ASNO, as Australia's national authority for the CWC, is the focal point in Australia for liaison between domestic CWC stakeholders such as declared chemical facilities, the OPCW, and the national authorities of other States Parties.

ASNO gathers information from the chemical industry, traders, universities and research institutions through a system of permits and notifications to compile declarations that Australia must submit to the OPCW. Under the CWP Act, ASNO has the right to conduct compliance inspections of relevant facilities in Australia, but only exercises such powers in exceptional circumstances. However, ASNO conducts outreach activities, including site visits, to promote compliance, prepare industry for OPCW inspections and check the accuracy of information provided by industry.

ASNO works closely with organisations holding items (which could include material, equipment or technologies) with proliferation risk. Examples include Australian Nuclear Science and Technology Organisation (ANSTO), Defence, CSIRO, uranium mines, universities, hospitals, research and development and the chemical industry. Along with colleagues from the Department of Foreign Affairs and Trade (DFAT) and other Government agencies, ASNO proactively engages with international organisations and other nations to shape the frameworks that ultimately affect Australian businesses.

ASNO also administers the *Comprehensive Nuclear-Test Ban Treaty Act 1998* (CTBT Act) and the *South Pacific Nuclear Free Zone Treaty Act 1986* to implement Australia's treaty commitments. Neither Act establishes any system of routine regulation. Substantial elements of the CTBT Act will come into effect only when the CTBT enters into force.

This report provides summary and analysis of the information ASNO collected during 2017-18 reporting period and describes its ongoing reform effort.

PERFORMANCE UNDER THE COMMONWEALTH KEY PERFORMANCE INDICATORS AND ASNO METRICS

KPI 1: Regulators do not unnecessarily impede the efficient operation of regulated entities.

Metric 1: Timely processing of permit applications and approvals.

ASNO issues new nuclear permits under s13, s16, s16A, s16B and s18 of the Safeguards Act. ASNO is also responsible for fulfilling Australia's obligations under the prescribed international agreements (s43 of the Safeguards Act and the Safeguards Regulations). In addition, ASNO issues new CWC Schedule 1, Schedule 2 and Schedule 3 facility permits under s16, s17, s18 and s19 of the CWP Act, and new CWC-Scheduled chemical import permits under Regulation 5J of the Customs (Prohibited Imports) Regulations 1956.

During the reporting period, ASNO approved **28** nuclear permits (**four** new permits, **18** permit renewals initiated by ASNO, and **six** permits renewals requested by the permit holder). The average time to approve/renew a permit was **12.8** days, and **86 per cent** were completed within 21 days of obtaining the final application. ASNO initiated 18 permit renewals for permits scheduled to expire and pre-emptively provided each permit holder with an ASNO form containing pre-populated information. ASNO allowed sufficient time for correspondence and updates, to ensure the new permit was in place before the old permit expired. The four new permits required additional consideration, requiring an average time of 33.8 calendar days to complete with **50 per cent** being completed within the 21 calendar days ASNO has set itself.

During the same period, ASNO processed **10** new permits to import CWC-scheduled chemicals (this does not include approximately 50 import permits that are renewed each year) taking an average **5.6** days to complete, with **70 per cent** completed within 7 calendar days. ASNO also completed **seven** chemical facility permits. Once the complete applications were received, the average number of days to provide a permit was **11.9** days, with **86 per cent** processed within the 21 calendar day standard ASNO has set itself.

The number of permits processed is too low for a useful statistical comparison with 2016-17, particularly given the diverse nature of the businesses and organisations that hold or use nuclear material or scheduled chemicals. However, ASNO's timelines in processing permit applications and approvals are comparable to the previous year with slightly more permits being processed during 2017-18.

This is ASNO's first Regulatory Performance Framework self-assessment report to include metrics for approvals for requests to transfer Uranium Ore Concentrates (UOC) internationally made under the relevant Permits to Possess Nuclear Material. Australia's uranium export policy¹ requires that Australian uranium can

¹ <http://dfat.gov.au/international-relations/security/non-proliferation-disarmament-arms-control/policies-agreements-treaties/Pages/australias-uranium-export-policy.aspx>

only be exported for peaceful non-explosive purposes under Australia's network of bilateral nuclear cooperation agreements. Nuclear cooperation agreements are Prescribed International Agreements listed in the Safeguards Regulations (made under the Safeguards Act). Approvals of transfers to export UOC internationally also provides a mechanism for ASNO to obtain the information necessary to meet its reporting requirements under Australia's Comprehensive Safeguards Agreement with the IAEA, as well as enable Australian uranium and its derivatives to be tracked through the international nuclear fuel cycle, as required by the Safeguards Act.

During the reporting period, ASNO approved **54** UOC shipments, **98 per cent** of which were approved within seven calendar days from ASNO receiving all required information from the exporter and bilateral counterpart. ASNO has previously streamlined the UOC approval process for export to Canada, the USA, Europe (**93 per cent** of all UOC shipments during the reporting period), by seeking an annual prior approval (instead of shipment-by-shipment approval) from each overseas regulator. ASNO will continue to assess the viability of further expanding the UOC prior approval process to other countries receiving UOC, in consultation with the Australian mines and ASNO's bilateral nuclear cooperation agreement partners.

Processing of permits and approvals July 2017 – June 2018

Number of nuclear permit applications processed:	28
Average number of calendar days	12.8 days
Per cent of permits issued within 21 days of final application	86%
Number of chemical import permit applications processed (1)	10
Average number of calendar days	5.6 days
Per cent of import permits issued within 7 days of final application	70%
Number of chemical facility permit applications processed (2)	7
Average number of calendar days	11.9 days
Per cent of facility permits issued within 21 days of final application	86%
Number of approved applications to transport UOC internationally	54
Average number of days	1.2
Per cent of approvals issued within 7 days of final application	98%

(1) This excludes ~50 import permits which were renewed during the reporting period

(2) This includes two new permits and five 5-yearly renewed permits

KPI 2: Communication with regulated entities is clear, targeted and effective.

Metric 2: Regulations and permit conditions are reviewed for clarity and suitability.

ASNO communicated with regulated entities in many ways during the reporting period, including taking advantage of the development and rollout of its new nuclear database to clarify the regulations and refine the permit conditions for each regulated entity (also see KPI-3 and 4). ASNO has also actively engaged with permit holders as they transitioned from using the ASNO forms² to fulfil their regulatory reporting obligations, to using the new online portal that empowers them to manage their regulated inventory and simplify how they report to ASNO. In addition, ASNO has worked collaboratively with industry groups, such as the South Australian Uranium Transport Working Group, to improve regulatory practices for the industry (see case study). Finally, communication is a very important part of ASNO inspections and outreach visits to ensure that permit holders have a clear understanding of their regulatory and permit conditions (see KPI-4).

The redevelopment of ASNO's nuclear database and associated permit holder portal has enabled ASNO to clarify the reporting requirements of each permit holder and eliminate any unnecessary regulatory administration (see KPI 4). Installation of phase 1 of ASNO's nuclear database was completed by the end of the reporting period, although a period of in-field testing and adjustment is expected. More advanced features are planned for future development stages of the database.

The new secure web-based portal allows nuclear permit holders to enter their data into the database. The portal has been designed to be a simple and user-friendly method for permit holders to update inventory changes and complete their annual reporting requirements to ASNO online. During development of the portal, two beta-testing exercises were conducted with a range of different permit holders (ANSTO, universities, industry and uranium mines) to ensure the portal is suitable for a range of different permit holders and inventories. Currently, the portal is being rolled out in stages to different categories of permit holders in order to provide each group with tailored instructions to most effectively assist their transition to the portal. ASNO staff will remain available to support permit holders via emails, phone calls.

The new database and portal, once completed, will provide nuclear permit holders a wider range of options and improvements, including:

- access to their complete and up to date inventory of material covered by Australian or IAEA safeguards
- ability to complete applications, notifications and reports under ASNO Permits, replacing many of the ASO series of forms
- ability to undertake some low-risk activities (such as domestic transfers of low risk materials) without prior ASNO approval
- make it easier for the permit holder to request prior approval to undertake higher risk activity (such as exporting certain material overseas)
- streamlined processes and improved data matching between information supplied by permit holders and international counterparts means less information needs to be routinely provided by permit holders.

The chemical database and portal were the first online platforms that ASNO redeveloped in 2014. Unfortunately, the platform later became unstable and its function continues to degrade. While DFAT's current resources are directed towards the development of the nuclear database and portal, the chemical database continues to be maintained by DFAT's Information Management and Technology Division (IMD) and ASNO staff to support chemical permit holders in interacting with the system. A strategy for replacing the current chemical database and portal is being investigated. ASNO and the IMD will use all lessons learnt from

² <https://dfat.gov.au/international-relations/security/asno/Pages/asno-forms.aspx>

the current chemical database, and the recent development of the nuclear database, in order to produce a more effective chemical database in the near future.

Case Study – South Australia Uranium Transport Working Group

ASNO continues to be part of the working group of the South Australian Uranium Transport Working Group, which formed in May 2016 at the inaugural workshop on the transport of Uranium Ore Concentrates (UOC) in South Australia.

The working group includes members from industry (including uranium producers and UOC transporters) as well as state and federal government representatives (such as the South Australian Environment Protection Authority and first responders). The group aims to establish best practices for the transport of UOC and better streamline regulatory practices across all states and federal agencies.

In addition, the working group meetings are an effective avenue for ASNO to consult with industry and other relevant parties on ASNO's permit conditions for the uranium industry. The feedback received during the consultations has helped remove unviable requirements, made implementation of requirements more flexible and enabled greater use of industry focussed terminology. This means that permit conditions and categories are determined based on realistic requirements of the permit holders and the reporting obligations are then tailored to the associated risk accordingly.

KPI 3: Actions undertaken by regulators are proportionate to the regulatory risk being managed.

Metric 3: *Implement risk informed regulatory program.*

ASNO has completed more than 90 per cent of the major permit reform project that began in 2015. The project involved reconfiguration of different nuclear permit categories (as summarised in the table below), using a risk-informed approach. The permit categories determine the reporting and security requirements of the permit holder based on the types and quantities of material allowed in that permit category. The permit categories that hold the higher risk material have the greater security and reporting obligation. The permit types also provide a basis for determining the frequency of inspection that could be required.

During the reporting period, ASNO reviewed and updated the permits issued to uranium mines and associated support industries. The advancement of the permit reform system has resulted in the reduction of the number and frequency of reports the permit holders are required to provide to ASNO in order for them to meet regulatory obligations. The system establishes the foundation of ASNO's risk-informed compliance regime and is more efficient as each permit is fit-for purpose and more closely structured to match real-world business processes.

The chemical regulatory system works in a similar manner. The CWC has identified three categories of chemicals, Scheduled 1, Schedule 2 and Schedule 3. Schedule 1 chemicals are of the highest concern as they can either be used as chemical weapons themselves, or used in the production of chemical weapons, and they have no, or very limited use outside chemical warfare. Facilities that hold Schedule 1 chemicals are termed Schedule 1 Facilities and have the highest reporting requirements and are inspected more frequently due to the higher risk associated with the chemicals they hold. Schedule 2 chemicals can also be used as chemical weapons, or manufactured into chemical weapons, but they also have some legitimate application outside chemical warfare in small quantities. Schedule 3 chemicals can be used as toxic chemical weapons, or used in the manufacture of chemical weapons, but have legitimate large scale industrial use. Schedule 3 Facilities have the lowest reporting requirements and likelihood of inspection.

In November 2017, ASNO invited the IAEA to conduct a voluntary peer review mission, referred to as an International Physical Protection Advisory Service (IPPAS), of Australia's nuclear security framework and operations at ANSTO (see case study). This was a follow-up to an earlier IPPAS mission conducted at ANSTO in 2013. While the IPPAS mission focussed on activities at ANSTO, ASNO and ASPANSA were key stakeholders in reviewing Australia's national legislation, the operation of nuclear security regulators, licensing and inspection processes, and interaction and integration with other security related organisations. IPPAS missions provide independent verification that the nuclear security regulatory requirements follow international best practice, including with regard to risk informed practices.

The IPPAS team observed that the nuclear security regime in Australia is well established and incorporates the fundamental principles of the amended CPPNM. The team provided a four recommendations and 15 suggestions to support Australia in enhancing and sustaining nuclear security. Five good practices were also identified that can serve as examples to other IAEA Member States to help strengthen their nuclear security activities.

Nuclear Permit Categories

CLASS	Description	Permit Reform Status
Permit Classes - Possess Nuclear Material		
L1	Small University permit	completed 2015
L2	Medium University permit	completed 2015
L3	Significant University Permit	completed 2015
R1	Small Radiographer Permit	completed 2016
R2	Large Radiographer Permit	completed 2016
S1	ANSTO (Special)	completed 2016
S2	SILEX (Special)	completed 2017
S3	CSIRO	completed 2018
U1	Uranium Mines (Mills)	completed 2018
U4	Stevedores / Ports	completed 2016
U5	UOC Agents	completed 2016
U6	Laboratories and Testing (mining)	completed 2016
Permit Classes – Transport		
T1	Transport NM -Surface, Air and Sea	completed 2016
T2	Transport NM – Air	completed 2016
T3	Transport NM - Road	completed 2016
U2	Transport UOC by Road / Rail	completed 2016
U3	Transport UOC by Sea	completed 2016
Permit Classes - Establish a Facility		
U7	Establish / construct UOC Mine	under consideration
Decommission a Facility		
U8	Decommission UOC Mine	under consideration
Possess Associated Items/Technology		
P1	Patent Office PA + (CI)	completed 2017
P2	Archives - Storage	completed 2017
Authority to Communicate Information		
P3	Communication AT	completed 2017
Transport Associated Items		
T4	Transport All	completed 2016

Case Study – Follow up IPPAS mission at ANSTO

International Physical Protection Advisory Service (IPPAS) was created by the IAEA in 1995 and provides peer advice on implementing international instruments and IAEA guidance on the protection of nuclear and other radioactive material, associated facilities and associated activities.

An IPPAS mission is comprised of a team of international experts who assess a state's system of physical protection (nuclear security), compare it with international best practices, make recommendations for improvements and identify good practices. In recent years, IPPAS missions have been increasingly recognised globally as a valuable tool in improving national nuclear security regimes.

Australia hosted its first IPPAS mission in November 2013 at ANSTO with considerable support from Australia's two nuclear regulators, ASNO and ARPANSA. ANSTO's research activities are expansive and include the irradiation of nuclear material in the OPAL nuclear reactor for the production of medical isotopes, industrial applications and scientific research. ANSTO's activities can entail proliferation risk and, subsequently, ASNO engages closely with its research, operations, safeguards and security staff, as well as senior management. The 2013 IPPAS report³ made nine recommendations and 24 suggestions.

In November 2017, a follow-up IPPAS mission was conducted at ANSTO, with ANSTO, ARPANSA and ASNO working in coordination in preparation for the mission. The scope of the two-week mission included responses to the recommendations of the initial mission in 2013 and changes in the Commonwealth legislative and regulatory framework for nuclear computer security. Australia's implementation of the 2005 Amendment to the Convention on the Physical Protection of Nuclear Material (CPPNM) was also reviewed.

The follow-up mission report set out four recommendations, fifteen suggestions and identified five good practices. IPPAS team concluded that Australia has a mature and well-established nuclear security regime, which has been enhanced significantly in the recent decade and further on the basis of the 2013 IPPAS mission report. A redacted version of the report has been published on ASNO's website⁴.

³ <http://dfat.gov.au/international-relations/security/asno/Documents/international-physical-protection-advisory-service-ippas-mission-report.pdf>

⁴ <https://dfat.gov.au/international-relations/security/asno/Pages/2017-iaea-ippas-follow-up-mission-to-australia.aspx>

KPI 4: Compliance and monitoring approaches are streamlined and coordinated.

Metric 4: *Establish streamlined compliance assessment and inspection processes.*

There are three elements to ASNO's streamlining of its compliance assessment and inspection processes:

- The first is that the permit conditions are based on a risk informed assessment of the material, or equipment held by the permit holder, and in a real-world situation the permit holder can meet these obligations without any unreasonable burden placed upon them (as discussed in Metric 3).
- The second is that the permit holder fully understands the requirements for them to meet their regulatory obligations. In addition to ASNO's communication and outreach with our permit holders (as discussed in KPI-2), ASNO has developed the nuclear portal designed to make the boundaries of the permit conditions transparent to the permit holder (see examples below).
- The third is that the nuclear database provides a reliable measure for ASNO to monitor compliance to the permit conditions. Inspections, outreach visits and desktop reviews are employed in a targeted way by ASNO (and the IAEA and OPCW) to confirm the permit holders are indeed fulfilling their regulatory requirements, with a focus on the permit holders assessed to hold higher risk material or equipment, or deemed to require assistance to meet their reporting obligations.

The coordination of the permit classes with the nuclear portal has removed unnecessary regulatory burden on the permit holder, improved transparency for both ASNO and permit holders and streamlined ASNO's ability to monitor the compliance of the permit holders. Examples of how this would effect different categories of permit holders can be seen below.

- The model permit developed for a uranium mine (U1) enables the permit holder to possess large quantities of UOC, but not other nuclear material such as enriched uranium or plutonium, which would require different security considerations and reporting requirements. The reporting obligation to ASNO would be tailored to the production and export of UOC (as there is no domestic demand for UOC, except for the occasional application in glass making). The security requirements would take into consideration the proliferation risk of the material, its physical properties, and the requirement to transport the UOC (see KPI-2). Therefore, the portal for a uranium mine permit holder will not display categories for enriched uranium and plutonium, but they will display fields that enable the mine to meet its reporting requirements for the transport and international export of UOC, which will not be displayed to non-uranium mine permit holders.
- An industrial radiographer company may have a permit (R1 or R2) that allows them to hold a certain amount of depleted uranium (used for shielding). Their portal would display depleted uranium as the only category, with a limit based on the size and requirements of the company. Their permit conditions and reporting requirements would be less burdensome than if the permit holder possessed a more diverse range, or larger quantities, of nuclear material.
- A university might hold a range of nuclear material in very small quantities for research purposes (L1). The limits to each material category would be visible on their portal. The required security and reporting conditions for that permit category would be informed by the small quantities of the material they possess. Should the research at the university change so that it requires larger or more diverse quantities of nuclear material, its nuclear permit could be revised accordingly to Medium University permit (L2), or a significant university permit (L3). The revised permit would include more stringent security requirements and reporting obligations to ASNO.

Permit compliance, including security arrangements and maintaining accurate inventories, are assessed by on-site inspections, outreach visits, desktop reviews and analysis of the permit holders annual reporting to ASNO.

During the reporting period, ASNO participated in **eight** IAEA inspections and **three** OPCW inspections (see the table below). For most IAEA or OPCW inspections (some are called without notice), ASNO sends the permit holder a notification outlining information required and the anticipated inspection process to assist their preparation for the inspection.

During the reporting period, ASNO also participated in a joint ASNO and Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) inspection of security at the Australian Nuclear Medicine facility at ANSTO, and an Australian/US bilateral security visit. ASNO independently conducted **13** visits/inspections, and **13** desktop reviews of nuclear permit holders. On-site visits represent an excellent opportunity to discuss current and emerging regulatory requirements directly with a business as it can be put in context to their working environment enabling both ASNO and the permit holder to more effectively understand best practises in a real-world situation.

ASNO Inspections, Visits and Desktop Reviews, July 2017– June 2018

ASNO nuclear inspections	8	8 days
IAEA nuclear inspections (ASNO facilitator)	8	15 days
Nuclear desktop reviews*	13	
ASNO chemical outreach visits	5	5 days
OPCW chemical inspections (ASNO facilitator)	3	10 days

*Reviews done at ASNO offices - examples include review of security plans and permit holder reports

KPI 5: Regulators are open and transparent in their dealings with regulated entities.

Metric 5: Outreach activities conducted to communicate regulatory requirements to stakeholders and receive feedback.

ASNO employs a range of approaches and techniques to effectively communicate regulatory requirements to permit holders, stakeholders and receive feedback, participating in over 30 activities in addition to on-site inspections (KPI-4) during the reporting period, which can be grouped together in the following ways:

Industry events and conferences are an effective way of reaching a number of regulated entities, or to educate industry groups that may require regulating in the future. During this reporting period, ASNO presented at:

- Australasian Radiation Protection Society conference
- Materials Research Society Symposium
- 5th Asian and Oceanic IRPA Congress on Radiation Protection

Permit holder outreach by gathering closely located regulated entities to a central location has been an effective options for targeted communication with a community of stakeholders, such as:

- CSIRO
- Australian National University

Targeted permit holder outreach missions focusing on the nuclear database and portal:

- Face to face demonstration in Melbourne – a range of permit holders
- Face to face demonstration in Canberra – a range of permit holders
- Face to face demonstration in Adelaide – uranium mines
- Various email and telephone interactions with permit holders, including uranium mines

Three-way discussions with other regulators and permit holders are an efficient means of holding a detailed exchange with well-established stakeholders. During the reporting period, this has included teleconferences and face-to-face engagements:

- Discussion with the uranium mines, ASNO and Department of Industry Innovation and Science (DIIS) regarding developments on processing uranium exports
- Discussions with ASNO and ASPANSA with ANSTO, on various issues, including:
 - IPPAS
 - Spent fuel management
 - Periodic Safety and Security Review (PSSR)

ASNO also employs several other avenues to communicate and provide information to current or potential regulated entities, as well as the general public, including:

- ASNO's annual report, which is produced in hard copy and posted to major permit holders, and is also publicly available on ASNO's website⁵
- ASNO website⁶
- ASNO produces an annual newsletter for its permit holders to keep them up to date in developments in the OPCW space

⁵ <http://dfat.gov.au/international-relations/security/asno/Pages/annual-reports.aspx>

⁶ <http://dfat.gov.au/international-relations/security/asno/Pages/australian-safeguards-and-non-proliferation-office-asno.aspx>

KPI 6: Regulators actively contribute to the continuous improvement of regulatory frameworks.

Metric 6a: *Number of meetings attended to influence international policy.*

ASNO actively engaged with multilateral organisations and national regulators from other countries. During the reporting period, ASNO participated in **34** nuclear and **12** chemical bilateral and multilateral meetings to promote high safeguards and security standards, and played an active role in developing the international policy and architecture in the non-proliferation, safeguards, security, monitoring and verification.

ASNO attended **24** multilateral meetings with established international organisations such as the OPCW, the IAEA and Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) to shape policies and standards that apply globally. By dynamically connecting with these organisations, ASNO is able to influence the development of international standards and ensure Australian businesses and organisations can apply them efficiently now and into the future. These meetings included the:

- IAEA General Conference and Board of Governors
- IAEA Standing Advisory Group on Safeguards Implementation
- CTBT On Site Inspection Exercises
- Convention on the Physical Protection of Nuclear Material
- International Framework for Nuclear Energy Cooperation
- 22nd Conference of the State Parties to the CWC
- 19th Annual meeting of OPCW National Authorities
- Nuclear Security Guidance Committee
- Nuclear Security Contact Group
- Commission on Safety Standards – meeting of safety/security committee chairs
- Numerous working level meetings at the IAEA, OPCW and CTBTO

ASNO participated in **nine** meetings in the Asia-Pacific region designed to promote the international non-proliferation environment and support capacity building in the Asia-Pacific region. This included:

- Regional Dialogue on Promoting Global Peace and Prosperity through Chemical Safety and Security, Thailand
- Asia-Pacific Safeguards Network (APSN) – Busan, Republic of Korea
- Stakeholder's Forum for States Parties in Asia - Adoption of National Implementing Legislation - Yangon, Myanmar
- BAPETEN-ASNO bilateral consultations meeting
- CTBT SEAPFE (South East-Asia, the Pacific and Far East) Conference Japan

During the reporting period, ASNO also contributed to the public non-proliferation debate, engaging with well-respected international non-government organisations, such as Wilton Park (UK) and the Nuclear Threat Initiative (USA).

Case Study – IAEA International Robotics Challenge and the Australian Safeguards Support Program

ASNO, as coordinator of the Australian Safeguards Support Program (ASSP), was the matchmaker that brought the IAEA and CSIRO together in the International Robotics Challenge, hosted by CSIRO's Data61 group, in Brisbane from 20–24 November. The aim of this Challenge was to demonstrate the role robotics can play in assisting IAEA inspectors do their nuclear safeguards inspections more effectively and efficiently. The Challenge involved twelve teams from nine countries, each bringing their own robots to test in simulated land-based and water-based IAEA inspection scenarios.

The IAEA plays a critically important role in maintaining national and international confidence in the nuclear industry. The IAEA uses various tools and techniques for both in-field inspections and headquarters analysis to check that all nuclear material is accounted for, that nuclear facilities are not being misused, and that there is no undeclared nuclear material or activities. It does this by conducting around 3,000 inspections each year at most of the 700 nuclear facilities subject to safeguards. Both the IAEA and the regulated nuclear facilities have a keen interest in finding solutions that have the potential to improve the efficiency and effectiveness of the inspections. This will minimize the burden of inspections on the facility, increase nuclear safety, while maintaining the industry's reputation as being responsible, safe and secure.

The Challenge tested two scenarios — one task takes place on ground, and another on the surface of water — that simulate some of these vital inspection tasks normally undertaken manually by IAEA Safeguards Inspectors. Teams endeavoured to demonstrate how robotics could reliably undertake repetitive measurements of nuclear material in parts of nuclear facilities that may be difficult or unsafe for humans to access.

This was the fourth Technology Challenge the IAEA has run worldwide over the last three years, each one assessing different promising technologies that could be used for safeguards in the future. These initiatives, developed by the IAEA's small but dedicated Technology Foresight team, have proved to be a very effective means of tapping into a wide range of international expertise in a very cost-effective way. The Challenge was very successful and may lead to future opportunities for the CSIRO to develop further novel remote equipment for the IAEA, or by companies working in the broader nuclear industry or nuclear waste repository, in Australia, or around the world.

The IAEA does not have a large research and development arm so it relies on assistance from its Member States to develop new technologies for meeting verification challenges. The ASSP is one of 21 programs dedicated to assisting the IAEA in safeguards research and development and involves collaborative work with several Australian research institutes, universities and other agencies.

ASNO representatives were also key participants at specialists meetings with regulatory authorities of like-minded nations to discuss common approaches to regulating and tracking obligated nuclear material. These meetings assist with Australian industry by ensuring that any nuclear material (exported UOC or an imported radiography camera) remains accountable under the bilateral nuclear cooperation agreements. These meetings included:

- Australia-United Kingdom Nuclear Cooperation Agreement negotiations
- Bilateral meetings counterparts from Japan, ROK, China, United States, Euratom and Canada
- Workshop on Nuclear Cooperation Agreements for the Export of Greenland's Uranium
- Nuclear Competent Authorities Group meeting

Finally, ASNO facilitated the bespoke IAEA International Robotics Challenge in Brisbane to potentially develop more efficient inspection tools that could benefit Australian business in the future. This event challenged robot

developers to produce machines that could assist IAEA inspectors in verifying nuclear material, potentially improving the effectiveness and efficiency of IAEA inspection and reduce their burden on the regulated entity (see case study).

Metric 6b: *Engagement with other regulators to explore opportunities for regulatory efficiencies.*

ASNO regularly met with other Commonwealth and State regulators and organisations that engage in, or interact with, nuclear and chemical regulation. Discussions at these meetings included evaluating the regulatory framework, exchanging lessons learned and discussing efficiency strategies. Opportunities for cooperation on strategies and activities that will effectively and efficiently work with common regulated entities were explored.

Examples of coordinated activities that benefit regulated businesses included:

- ASNO and ARPANSA worked collaboratively to host the follow-up IPPAS peer-review mission (see case study)
- ASNO and ARPANSA, plus additional agencies as required, worked collaboratively on other ANSTO-related activities, including:
 - Spent fuel shipment
 - Inspection of new ANSTO Nuclear Medicine Facility
 - Planning of ANSTO's Periodic Safety and Security Review (PSSR)
- South Australia UOC Transport Working Group meeting (see case study)
- Meeting between ASNO, Department of Home Affairs and Australian Bureau of Statistics on Amendments to Australian Harmonised Export Commodity Controls (AHECC) and Import Tariff Codes
- Home Affairs Scoping meeting for Single Window for International Trade project
- ASNO and DIIS worked collaboratively on several activities, including:
 - National Radioactive Waste Storage Facility
 - Streamlining the processing of controlled ores and concentrates
 - Developments on Australia's network of bilateral nuclear cooperation agreements and the streamlining the approval process for UOC exports
- Joining the Regulatory Science Network – a meeting of regulatory scientists that aims to promote and strengthen regulatory science amongst Australian government regulatory agencies

ASNO also regularly met with international regulatory counterparts with whom we engage with to meet our international regulatory obligations during the import or export of nuclear or chemical material, equipment or technology. International regulatory counterparts can include international organisations such as the IAEA and OPCW. Interactions included one-on-one meetings with foreign bilateral nuclear partners, and meeting with various like-minded countries intended to development and support best practise in safeguard implementation. Examples of coordinated activities that benefit regulated businesses include:

- IAEA International Robotics Challenge 2017 (see case study)
- IPPAS peer-review mission in Hungary – ASNO acted as lead nuclear security specialist
- Bilateral meetings for the reconciliation of the form and disposition of Australian Obligated Nuclear Material with USA, Canada, European Union, UK, India, China, South Korea and Japan
- Workshop on Nuclear Cooperation Agreements for the Export of Greenland uranium (which currently involves an Australian company operating in Greenland)

- Asia Pacific Safeguards Network - a professional network that draws upon safeguards expertise in the Asia-Pacific to facilitate the exchange of safeguards information, knowledge and practical experience among members in order to strengthen safeguards capabilities in the region