



## Inspection report

<b>Licence holder:</b> ANSTO Australian Centre for Neutron Scattering (ACNS)	<b>Licence number:</b> S0171
<b>Location inspected:</b> Lucas Heights, NSW	<b>Date/s of inspection:</b> 23 August 2019
	<b>Report no:</b> R19/09852

An inspection was conducted as part of ARPANSA's baseline inspection program to assess compliance with the *Australian Radiation Protection and Nuclear Safety Act 1998* (the Act), the Australian Radiation Protection and Nuclear Safety Regulations 2018 (the Regulations), and conditions of source licence S0171.

The scope of the inspection included an assessment of ACNS' performance at Lucas Heights against the source Performance Objectives and Criteria. The inspection consisted of a review of records, interviews, and physical inspection of sources.

It should be noted that the inspection of the S0171 and S0202 licences were held concurrently on this day. The report for licence S0202 is considered to be the primary version for both and inspection findings will not be repeated in this report.

### Background

ACNS comprises a suite of neutron scattering instruments located adjacent to the OPAL reactor. These instruments utilise neutron scattering and X-ray techniques for scientific and industrial research and provide both Australian and international scientific communities with the capacity to perform experiments in the pursuit of scientific breakthroughs. The instruments authorised on this licence, S0171, are being hot commissioned with a view to providing results to ARPANSA for assessment under section 63 of the Regulations for authorisation to operate. Once approved for normal operation, the instruments are transferred to the S0202 licence.

The main codes and standards applicable to these sources are those that appear in section 59 of the Regulations plus:

- Australian/New Zealand Standard Safety in laboratories – Part 4: Ionizing radiations (2018) (AS/NZS 2243.4:2018) (the IR Standard)

### Observations

In general, the management of radiation safety at ACNS in relation to radiation sources was found to be sound.

This licence currently has one neutron beam instrument being hot commissioned which is subject to a section 63 application to make a change with significant implications for safety. The assessment of this application is expected to be finalised by 31 October 2019 by agreement between ACNS and ARPANSA.

### ***Performance Reporting Verification***

ACNS have submitted quarterly reports to ARPANSA in a timely manner in recent years, and these contain relevant information including details of compliance with the Act and Regulations.

ACNS has developed a comprehensive Radiation Protection Plan (RPP) to manage radiation at the installation that covers both this licence and the S0202 licence.

### ***Configuration Management***

A third licence, S0045, covered all other sources under ANSTO control including some items located in ACNS such as Class 4 lasers and X-ray analysis equipment. ACNS staff advised that although this arrangement was historic, it was considered to be working well.

### ***Inspection, Testing and Maintenance and Training***

Installation and maintenance of new instruments is only performed in-house by appropriately trained and qualified technicians and instrument scientists. Training records were viewed as part of this inspection.

### ***Event Protection and Emergency Preparedness and Response***

The broader ANSTO policy and work health and safety plans outline event protection along with emergency preparedness and response requirements. These were not, however, assessed during the inspection as more rigorous investigation of these documents is carried out during facility licence inspections on site. In order to raise awareness of this issue though, the RPP included a section on 'Abnormal Occurrences/Accidents/Incidents/Event Reporting'.

### ***Radiation Protection***

ACNS has demonstrated a commitment to radiation protection by establishing a policy to facilitate the safe and effective use of radiation. The comprehensive RPP with the objective to achieve and maintain best practice and compliance with radiation legislation and ARPANSA licence conditions supports this commitment. Further, ACNS has also prepared radioactive waste management plan to deal with activated material arising from use of the instruments. Each of the documents meet the requirements of section 61 of the Regulation.

### ***Security***

The neutron beam instruments are not captured by RPS11 however, ACNS security arrangements are covered under the overall ANSTO Lucas Heights security arrangements.

### ***Findings***

The licence holder was found to be in compliance with the requirements of the Act, the Regulations, and licence conditions.

*No written response to this report is required*

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