



Inspection report

Licence holder: Department of Defence and Australian Defence Force (DoD)	Licence number: S0042
Location inspected: DoD site/units in New South Wales	Date/s of inspection: 25-26 September 2019
	Report no: R19/11277

This 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 S0042.

The scope of the inspection included an assessment of DoD's performance against the Source Performance Objectives and Criteria (POCs). The inspection consisted of a review of records, interviews, and physical inspection of sources.

Background

DoD is licensed to deal with many different types of controlled material and controlled apparatus at its various Australian sites for scientific research, medical use, non-destructive testing (NDT) of objects, X-ray examination of objects and parcel examination.

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

1. Australian/New Zealand Standard *Safety of laser products Part 1: Equipment classification* (AS/NZS IEC 60825-1:2014) (the laser standard)
2. Australian/New Zealand Standard *Safety of laser products Part 14: A user's guide* (AS/NZS IEC 60825-14:2011) (the laser standard)

Observations

In general, the management of safety margins at the DoD site/unit was found to be satisfactory. However, there appeared to be room for improvement in relation to the method of testing the laser system.

Performance Reporting Verification

The Defence Radiation Safety and Environment Section (DRSE) collects information for quarterly reports with input from each DoD site/unit. Once collected, the Radiation Safety Officer consolidates this information into one final report to ARPANSA. DoD's quarterly reports have been submitted to ARPANSA in a timely manner in recent years, and contained relevant information, including details of compliance with the Act and Regulations.

Configuration Management

All controlled sources under the management of DoD at this site/unit were present and accounted for in relation to the DoD SIW.

Inspection, Testing and Maintenance

External contractors carry out maintenance and testing of the equipment. Lasers were sent back the supplier/manufacture for repair or maintenance.

Laser testing was only performed under strict conditions, sometimes at 03:00 to avoid the possibility of exposing personnel, overseen by the Laser Safety Officer (LSO). It was found, however, that the procedures DoD used for laser testing could result in a person being exposed to a laser hazard above the maximum permissible exposure levels in the laser standard. In order to reduce the risk of a potential laser related injury, it would be prudent for DoD to implement additional engineering controls, where reasonably practicable, for testing the lasers.

DRSE has developed a schedule of internal assurance inspections of Australia wide DoD sites/units on a quarterly basis and this inspection was held concurrently with one of these scheduled internal inspections. It was proposed that this arrangement of joint ARPANSA inspections and DRSE internal inspections continue into the future.

Training

Staff using the lasers have received the level of training relevant to the task they are required to carry out. The LSO had completed the relevant laser safety training course as was evident from the training records. During the inspection, the laser safety power point presentation and video used to familiarise staff dealing with lasers was viewed.

Event Protection and Emergency Preparedness and Response

The broader DoD policy and work health and safety plans outline event protection and emergency preparedness and response requirements for the site/unit. These were not assessed during the inspection.

Radiation Protection

DoD has demonstrated a commitment to radiation protection by establishing a policy to facilitate the safe and effective use of radiation across all Australia sites/units. Each section on each Australian site/unit operates under a comprehensive radiation safety plan to achieve and maintain best practice and compliance with radiation legislation and ARPANSA licence conditions supports this commitment.

The following observation was, however, made during the inspection:

Procedures for operational testing of controlled apparatus (lasers), including verification of safety parameters, could result in personnel being exposed to laser radiation in excess of the levels prescribed in the laser standard.

Security

There were no sources at the site that would invoke the requirements of RPS11. Civilians were not permitted access to any part of the site without a specific need to be there and then only with an appropriate security pass and a local escort.

Findings

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

The inspection revealed the following **area for improvement**:

1. The testing of lasers could be improved with additional engineering controls where practicable.

It is expected that improvement actions will be taken in a timely manner.

No written response to this report is required

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