



Inspection report

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| Licence holder: Geoscience Australia – National Positioning Infrastructure Branch (GA) | Licence number: S0047 |
| Location inspected: Mount Stromlo Space Research Centre (SRC), Mount Stromlo ACT | Date/s of inspection: 26 June 2019 |
| | Report no.: R19/22030 |

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 S0047.

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

Background

GA (part of the Department of Industry, Innovation and Science) owns a Class 4 Laser at the SRC at Mt Stromlo, Australian Capital Territory, for tracking and ranging orbiting satellites under contractual arrangements with other organisations around the world. GA is licensed under section 33 of the Act to deal with controlled apparatus (lasers) although no employee of GA is located at the SRC. The operation of the laser is contracted out to EOS Space Systems Pty Limited and EOS Space Systems Pty Limited is therefore defined as a Commonwealth contractor under section 11(2) of the Act.

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

Observations

In general, the management of safety margins at the SRC was found to be satisfactory although there appeared to be room for improvement in relation to requirements for annual eye testing referenced in the EOS Space Systems Work Health and Safety Manual (WHSM).

Performance reporting and verification and configuration control

GA provided relevant information through the timely submission of their recent quarterly reports. GA also maintained an inventory of their controlled apparatus however, during discussion it was established that one laser formerly used for aircraft detection was no longer used due to a change in technology and one listed device was actually owned by EOS Space Systems. The disused aircraft detection laser was in

storage with a view to ultimate disposal. GA would need to obtain approval under section 65 of the Regulations before any such disposal could take place. Further, GA would need to provide written confirmation of ownership in order to remove the EOS Space Systems laser from the source inventory workbook.

A copy of the WHSM was provided for assessment. This document included GA's plans and arrangements on laser safety at the SRC under licence S0047. The document was last reviewed in September 2016 and was therefore due for review and update by the end of September 2019 to meet the requirements of section 61(1) of the Regulations.

It was noted that AS/NZS IEC 60825-14:2011 was not listed in the 'Applicable Documents' table (section 1.1) although there were indirect references to it within the WHSM. Also, reference to laser types within the document included '3a' and '3A' rather than the Australian Standard designation '3R'.

Inspection, testing and maintenance (Servicing)

All maintenance, including beam alignment, was carried out in-house by trained staff. Laser safety eyewear with appropriate optical density for the range of wavelengths in use were located at the entrance to the laser room for alignment purposes.

Training

All staff using the laser, for both operational and maintenance purposes, were internally trained by a laser physicist. Further, anybody with access to the laser room required formal induction training. Training records for relevant staff were provided for review during the inspection.

Security

The laser was located inside a 'clean room' to which only those who had completed both the induction and laser training were granted access via swipe card.

Radiation protection

The WHSM required that all personnel regularly working at the observatory undergo annual eye examinations although there was no evidence that this was being done. This is therefore considered an area for improvement. Clause 11 of AS/NZS IEC 60825-14:2011, however, recommends that routine ophthalmic examinations should only be carried out when medically advisable and not be used for routine screening. GA has indicated that this requirement in the WHSM will be reviewed in light of the recommendations in AS/NZS IEC 60825-14:2011.

Appropriate signage is in use at the entry to, and within, the laser room.

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**:

- Annual eye examinations were not being performed as per the requirements within the WHSM.

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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