



Inspection report

Licence holder: ASC Pty Ltd and ASC AWD Shipbuilder Pty Ltd	Licence number: S0190
Location inspected: Osborne, SA	Date/s of inspection: 18 June 2019
	Report no: R19/07004

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 S0190.

The scope of the inspection included an assessment of ASC Pty Ltd and ASC AWD Shipbuilder Pty Ltd's performance at Osborne, SA, against the Source Performance Objectives and Criteria (PO&Cs). The inspection consisted of interviews, a review of records and a physical inspection of sources.

Background

ASC provides non-destructive testing (NDT) and inspection services to the Department of Defence at the site and maintenance of Australian naval vessels.

ASC is licensed to deal with industrial radiography sources and X-ray equipment, magnetic field NDT devices, partially enclosed x-ray analysis units and lasers for materials analysis.

The main codes and standards applicable to the sources under this licence are those that appear in section 59 of the Regulations and:

- RPS3 *Radiation Protection Standard for Maximum Exposure Levels to Radiofrequency Fields – 3kHz to 300 GHz (2002)*
- RPS11 *Code of Practice on the Security of Radioactive Sources (2007)*
- RPS C-4 *Industrial Radiography Code (2018)*
- AS/NZS:2243.4 *Australian Standard Safety in Laboratories – Ionising Radiations (2018)*
- Australian/New Zealand Standard *Safety of laser products Part 1: Equipment classification (AS/NZS IEC 60825-1:2014)* (the laser standard)
- 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 and security at the Osborne site was found to be strong. Operational staff were very knowledgeable on the relevant standards, engaged in seeking high performance and, demonstrated significant industry experience. However, there appeared to be room for improvements in relation to referencing within the ASC Radiation Safety Manual (RSM).

Performance reporting and verification

ASC provided relevant information through the timely submission of their recent quarterly reports. ASC also maintained an accurate and up to date inventory of their controlled materials and controlled apparatus. All equipment listed in the Source Inventory Workbook was cross-checked with that found on site and, other than a few minor serial number discrepancies, everything was in order.

Configuration management

ASC personnel demonstrated substantial configuration knowledge gained through several years of operational experience. Management of fully closed and open site operations was found to be consistent with the requirements RPS C-4.

ASC staff raised the issue of the use of external contracted industrial radiographers on-site and how such people would be covered in relation to licence S0190. ASC would need to provide a detailed submission to ARPANSA for advice to ensure all aspects of the issue, such as being on Commonwealth land, are considered.

Inspection, testing and maintenance

Calibration certificates for all monitoring equipment were maintained both electronically and via a label on each monitor. The RSM required that all radiography sites undergo pre-operational testing before procedures could commence although no radiography procedures were being carried out during the inspection so this could not be confirmed. However, logbooks seen during the inspection indicated that these tests were being conducted.

Training

ASC maintained comprehensive records of personnel training requirements, their status in terms of training currency and required re-training requirements. ASC requires that personnel are qualified under the Australian Institute of Non-Destructive Testing (AINDT) framework. AINDT periodically provide a one-day training course on-site in order that each NDT operator can maintain their level 2 qualification.

Event protection

The RSM referred to other internal ASC documents for emergency response, incident notification and incident investigation. Review of these documents for this inspection showed them to be comprehensive and the follow up of a recent incident confirmed their effectiveness. The documentation referred to a range of measures to prevent, detect and mitigate events that could lead to radiation exposures.

ASC implement a range of controls including the use of safety interlocks and warning devices in exposure rooms. Sentries with handheld radios are employed at open sites to ensure that personnel are not inadvertently exposed to radiation above the specified dose limits.

Security

ASC maintains an ARPANSA-endorsed source security plan detailing the relevant arrangements in accordance with ARPANSA RPS-11. The source security plan has been formulated specifically for the high activity radioactive sources used for non-destructive testing at the site.

This inspection confirmed that the protective security system was consistent with the security plan approved under RPS11 for a Security Category II source.

Radiation protection

The RPO advised the inspection team that the RSM was reviewed every two years in accordance with ASC quality system requirements, although this was not actually reflected in the RSM. While it was good

practice for a licence holder to review its radiation safety documentation on a more frequent basis, the ARPANSA regulatory requirement was for a review and update at least once every 3 years.

The RSM describes the arrangements in place to protect workers and the public from the harmful effects of radiation. However, several items within the RSM were noted as potentially requiring further consideration, including:

- ASC had reviewed and updated the RSM in June 2019 although referencing within the document still referred to the previous ARPANS Regulations e.g. 'Regulation 51' instead of 'Section 63' etc. Further, there was reference to a paragraph (3.10.1) that no longer existed in the current version. This incorrect referencing was considered to be a minor area for improvement.
- In accordance with RPS C-1, when an occupationally exposed female has declared that she is pregnant or is breast-feeding, additional controls are considered to protect the embryo/foetus or breast-fed infant to a level similar to that provided for members of the public. However, the potential privacy issues associated with making and recording such a declaration were not covered in the RSM. Ensuring that this declaration is made and handled appropriately could be further explored by ASC.

The Standard Operating Procedure for the X-ray analyser that was observed during the inspection was an older version that expired in May 2018. While an updated electronic version, expiring in May 2020, was available, ASC had not replaced the hard copy version.

The store for the radioactive sources met the requirements specified in clause 3.2.1(j) of RPS C-4. It was noted however, that dose rates outside the storage safe might be reduced even further in line with the optimisation principle by swapping the location of the two radiography sources inside so that the shielding of the less active source container also provides shielding for the more active source.

Emergency preparedness and response

Emergency arrangements at ASC were considered appropriate for the locations seen during the inspection in line with the documentation provided.

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**:

- Some references within the Radiation Safety Manual (RSM) were out-of-date.

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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