Australian Government
Australian Radiation Protection and Nuclear Safety Agency

INSPECTION REPORT

Licence Holder: Department of Defence and Australian Defence Force (Defence)	**Licence Number**: F0213
Location inspected: Defence Radioactive Waste Storage Facility - South Australia	**Date of inspection**: 27–28 April 2016
	Report No: R16/05119

An inspection was conducted under Part 7 of the *Australian Radiation Protection and Nuclear Safety Act 1998* (the Act). The purpose of the inspection was to assess compliance with the Act, applicable regulations, and licence conditions.

The scope of the inspection included an assessment of Defence's performance in the area of security. For a radioactive waste storage facility this is an appraisal of whether the licence holder has implemented effective security measures to prevent unauthorised access or damage to, the loss, theft, unauthorised transfer or unauthorised use of the radioactivity within the facility.

The inspection consisted of a review of records, interviews, and a physical inspection of the facility.

Background

The facility houses radioactive waste held by Defence. This is legacy waste made up of unrepairable and obsolete equipment, instruments, repair parts and consumables containing low and intermediate level radioactive materials. The facility is closed and does not receive waste on a regular basis. Defence possess and control the facility in order to manage the waste produced by previous activities.

Observations

In general, Defence personnel indicated a willingness to comply with security requirements. Furthermore, it was observed that, at the operating level, there was a good understanding of how security outcomes can be achieved. There appeared to be, however, several areas where there is room for improvement.

Radiation Protection Series 11 *Code of Practice for the Security of Radioactive Sources* (RPS11) was published in January 2007. This sets out the security requirements to be implemented by persons dealing with a radioactive source, in order to decrease the likelihood of the unauthorised access to, or acquisition of, the radioactive source by persons with malicious intent.

Defence is in the process of implementing a hierarchical approach to the security of sources. At a minimum, this will consist of a corporate policy document (contained within the Defence Radiation Safety Manual) and a security plan for each site holding security enhanced sources. The current version of the Source Security Plan for the waste storage facility was provided. However, there was no evidence that this plan had been endorsed by an assessor accredited by the regulatory body, as required by clause 2.1.3(b) of RPS11. This is a potential non-compliance with licence condition 6 of Facility Licence F0213.

Objective 6.1 from the facility licence performance objectives and criteria (PO&Cs) expects that the physical security arrangements are in accordance with RPS11 which implements a risk based approach to security

based upon the current threat level for a radiological attack and the specific details of the radioactive source. The threat level is supplied by the Australian Government's National Threat Assessment Centre, while the source is assigned a security category using the methodology specified in Schedule B of RPS11. This methodology takes into account situations where radioactive sources are in close proximity to each other, and are protected by a common physical security barrier (e.g. a locked door at the entrance to a storage room). In these instances, the activity of the sources is aggregated so that the physical security measures are appropriate to the amount of radioactivity that the licence holder is protecting. In this instance, Defence had incorrectly assessed the security category of the facility. This means that Defence have been aiming to achieve a lower performance objective than is appropriate to the situation.

The existing physical security system was inspected, and overall, it was observed that measures were in place to detect, assess and delay unauthorised access to the facility. However, it was observed that some minor improvements could enhance the integrity of the physical security system, such as hardening the main access door hinges and removing an access vulnerability to the main vent shaft bolts.

It is expected that Defence will shortly submit a source security plan that is appropriate to the security category of the facility and it is anticipated that the existing security measures should achieve the security requirements set out by RPS11.

Defence had implemented lessons learned from previous false alarms of the security system. For example, large bolts had been installed on the access doors that were fitted with reed switches for the specific purpose of preventing wind-induced false alarms.

Cross-cutting objective 1.4 from the facility licence PO&Cs expects that safety and security is integrated into all activities. Quality management systems are commonly used for this purpose. In this instance, Defence's arrangements for maintaining the security of the facility consisted of several documents. The Source Security Site Plan was marked with both a version number and a date of issue. The Security SOP and the Emergency Response Plan were only marked with a date of issue, while the list of Emergency Contact Numbers and the Checklist for the Quarterly Review held no version control markings whatsoever. Furthermore, none of the documents were marked with a record detailing the revisions that have occurred, the description of the changes made, and any checking and approval process in place.

Cross-cutting criterion 1.4.2 from the facility licence PO&Cs expects that high standards of documentation, procedures and instructions are maintained throughout the organisation. The register of security enhanced sources within the Source Security Site Plan provided measured dose rates at contact with the containers with the highest "A/D" value. However, an incorrect unit was used which denoted that the dose rate was one thousand times higher than reality. Furthermore, the security SOP refers to a dose rate outside the building in units of "microgray per hour". However, the appropriate unit which should have been used for radiation protection purposes is "microsieverts per hour".

Findings

Potential Non-compliance:

Licence condition 6 of facility licence F0213 requires that the licence holder comply with the relevant sections of Radiation Protection Series 11 *Code of Practice for the Security of Radioactive Sources* (RPS11).

Clause 2.1.3(b) of RPS11 requires that the source security plan be endorsed by an assessor accredited by the regulatory body. At the time of inspection, Defence was unable to provide evidence that this had been undertaken, and hence, this is a potential non-compliance with licence condition 6 of facility licence F0213.

Defence's performance may be improved by addressing the following performance deficiencies.

Performance Deficiencies:

1. Version control information for security documents was either not present, inconsistent or did not provide enough detail. This shows a poor commitment to the principles of quality management systems.

2. Technical details of the documentation were observed to be inaccurate or not technically correct. This shows that the documentation had not been rigorously reviewed by subject matter experts.

In response to any potential non-compliance, the licence holder must carry out its responsibilities as per Regulation 45.

It is expected that actions to address any performance deficiencies will be taken by the licence holder in a timely fashion.

Inspection reports are normally published on the ARPANSA website however due to the sensitive nature of this report it will not be published