Australian Government
Australian Radiation Protection and Nuclear Safety Agency

INSPECTION REPORT

Licence Holder: Department of Defence and Australian Defence Force (Defence)	**Licence Number**: F0113
Location inspected: Radioactive Waste Storage Facility in South Eastern Australia	**Date of inspection**: 1 - 4 March 2016
	Report No: R16/02615

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 inspection was conducted as part of ARPANSA's baseline inspection programme.

The scope of the inspection included an assessment of Defence's performance against the facility licence Performance Objectives and Criteria (PO&Cs) in the following areas:

a) Baseline Module 1 – Performance Reporting and Verification (BM 1)
b) Baseline Module 2 – Configuration Management (BM 2)
c) Baseline Module 5 – Event Protection (BM 5)
d) Baseline Module 7 – Radiation Protection (BM 7)

Defence's performance in the crosscutting areas of Safety Culture, Human Performance and Performance Improvement was also assessed.

All findings are based on factual evidence obtained during the inspection. The inspection consisted of a review of records, interviews, and a physical inspection of the facility.

Background

The Radioactive Waste Storage facility in South Eastern Australia is a prescribed radiation facility used to store unrepairable and obsolete equipment, instruments, repair parts and consumables which contain low level radioactive materials. The radioactive waste will be stored at the facility for an interim period pending the establishment of a National Radioactive Waste Management Facility.

Observations

In general, the management of radiation safety at the facility was found to be satisfactory and aligned with the relevant ARPANSA PO&Cs. However, observations were made that identified areas for improvement.

Defence has a hierarchical system of documentation related to the management of radiation safety. This provides a link between corporate documents and local documentation associated with the facility. For the radioactive waste storage facility, the inspectors reviewed the *Radiation Safety Management Plan* (Version 1, November 2015), in addition to several other documents provided such as the Fire Plan, decontamination procedures etc. The documents provided were reviewed and the content discussed with the Defence representatives.

Performance Reporting and Verification

The Quarterly Reports have been submitted to ARPANSA in a timely manner, with appropriate information included. Internal reporting, such as incident reporting, is undertaken via the Defence intranet. When an incident of any type is reported, an automatic notification is generated and forwarded to the appropriate person for action.

There is a capacity to perform trend analyses on all reported work health and safety incidents. However, there were no recorded radiation incidents in the system at the time of the inspection. ARPANSA inspectors were advised that:

- Staff and contractors are encouraged to report all incidents.
- In the event of a serious radiation incident, the system will automatically notify ARPANSA in addition to internal notifications being issued.

Configuration Management

The procedures for the entry into, operation of, and exit from the facility were observed during the inspection, and adherence to the procedures was found to be as prescribed. However, it was noted that the document relating to radiation management and operation (P-RS-001) required that the contents of the decontamination kit be checked on the last working day of each week that the facility was occupied, and that the decontamination shower be checked at the same time. However, staff were found to be actually carrying out these checks at different times and this was therefore inconsistent with prescribed procedures. BM 2.1.2 of the Configuration Management PO&C requires that configuration and use of controlled plant and material be consistent with procedures, drawings and other operational documents. ARPANSA inspectors were advised that this was an administrative oversight in the documentation. A revised version rectifying the issue was provided to ARPANSA during the inspection.

Event Protection

ARPANSA inspectors observed that there were several measures in place to mitigate various external events including lightning arrestors, the use of earthen mounds to enclose the facility on all sides, and water catchment drains to prevent contaminated runoff. Firefighting services who would attend in the event of an incident have received training on radiation safety from Defence. In the case of an event at the facility however, responders are instructed to set up an exclusion zone of 100 metres, and not proceed beyond that until advised by the incident controller or the Radiation Manager according to procedure I-RS-002.

Radiation Protection

Personal radiation dose records were observed during the inspection. The recorded doses were low and within the annual occupational dose limit. Survey and contamination results were recorded on paper at first before being scanned into the document storage system at a later time. The measurements were taken using calibrated equipment and included a liquid scintillation counter to measure tritium contamination. No anomalous readings were noted in any of the documentation observed during the inspection. One observation however was that P-RS-001 required an area survey of the facility and its surrounds to be conducted in the first quarter of each calendar year. This had not been done at the time of inspection, but it was stated that this would be completed before the end of the quarter as required. An updated version of this procedure, P-RS-001 Version 3, was provided during the inspection. This requires an additional area survey to be conducted in the last quarter of each calendar year.

P-RS-001 requires the reporting of contamination results and area survey results to the area radiation working group. However this is not currently being undertaken. The Radiation Manager stated that the area radiation working group is in a different jurisdiction, and that this reporting requirement is not necessary. The Radiation Manager is responsible for such monitoring and is therefore aware of any

anomalies in the readings. The Radiation Manager provided the ARPANSA inspector with Version 3 of P-RS-001 during the inspection with reference to the working group removed, and all results to be reported to the Radiation Manager for verification, thus rectifying this issue. However the crosscutting area of Safety Culture CC 1.6.1 requires there to be good communication and cooperation on safety and security across the entire organisation.

The facility external fence was examined to establish its condition. One warning sign had become detached and was lying on the ground. However, the fence was intact with no holes large enough for humans or large animals to enter. It was noted the facility is located within a substantially larger site which is subject to security clearance before any person can obtain access to the facility. No evidence of animals was seen inside the compound, nor was there any indication that there had been animals present in the past.

A visual examination of the building was undertaken to ascertain the condition. The roof of the facility appeared to be intact, with no indication that water was entering the facility. A visual inspection of the metal waste storage containers showed no signs of rust.

Findings

At the time of inspection, it was concluded that the licence holder was compliant with the Act, applicable regulations, and licence conditions.

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

Performance Deficiencies:

1. Checks of the decontamination kits and the decontamination shower were not being performed in accordance with the procedures, although equivalent checks were being undertaken in a more effective manner. This change was also reflected in the revised version of the procedures provided to the ARPANSA inspectors during the inspection.

2. Documentation required reporting of contamination measurements and area surveys to an internal radiation safety working group at defined intervals. This was not being undertaken, although the reporting was available to the Radiation Manager. This procedure was rectified during the inspection and a revised document provided to the ARPANSA inspectors.