Australian Government
Australian Radiation Protection and Nuclear Safety Agency

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INSPECTION REPORT

Licence Holder: Department of Immigration and Border Protection	**Licence Number:** F0131
Location inspected: Container Examination Facility, Melbourne, Vic	**Date/s of inspection:** 7 December 2017
	Report No: R17/13622

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 1999 (the Regulations), and conditions of Facility Licence F0131.

The scope of the inspection included an assessment of Department of Immigration and Border Protection (DIBP) performance against applicable facility Performance Objectives and Criteria. The inspection consisted of a review of records, interviews, and physical inspection of the facility.

Background

The Container Examination Facility (CEF) is a prescribed radiation facility that utilises a linear accelerator system installed within a fully enclosed building dedicated to the purpose of screening containerised sea cargo. The CEF underwent an upgrade changing the dual energy system from 6/3 MeV to 9/6 MeV (the upgrade was authorised by an approval issued in accordance with regulation 51 of the Regulations).

Currently the standard applying to the Melbourne CEF as a condition of licence is Radiation Health Series No.24 *Code of practice for the design and safe installation of non-medical irradiation facilities (1988).* However this is soon to change to ANSI/HPS N43.3-2008 *Installations using non-medical x-ray and sealed gamma-ray sources, energies up to 10 MeV* as the relevant standard in line with the licences issued for DIBP CEFs operating in Brisbane and Fremantle.

Observations

The DIBP's quarterly reports of compliance submitted to ARPANSA over the past two years were reported in a timely manner and contained relevant information, including compliance with the Act and the Regulations.

The incident and accident reporting procedure used by the DIBP in connection with the Melbourne CEF was explained to the inspection team. No radiation accidents or incidents have been reported to ARPANSA in the two years preceding the inspection. There are in-depth safety procedures in place in the event of the scanning hall doors becoming inoperable. These procedures include imposing a defined exclusion zone until the doors are operable. The DIPB Radiation Safety Management Plan details the steps to take in reporting radiation incidents within the DIBP, including the role of the Site Radiation Safety Officer (SRSO).

Knowledge of the steps required to report such incidents and the identity of the Melbourne CEF SRSO could not be readily explained or demonstrated to the inspection team.

The DIBP has in place a Competency Assessment Training Officer scheme for operator training and refresher training which includes the safe use of radiation emitting apparatus and devices and e-learning training modules which are available to staff on the DIBP intranet site. However, it was apparent to the inspection team that there was a lack of familiarity with the training record keeping process or the production of a consolidated personnel training record that clearly indicates the training and refresher training status of each CEF operator.

The DIBP engages an external party to fulfil the role of its consulting Radiation Safety Adviser (RSA). One of the services provided by the RSA is to certify the qualifications and competency of linear accelerator service engineers. The RSA issued a certificate to the Melbourne CEF service engineer (dated August 2014), however a copy of the certificate could not be provided from Melbourne CEF records and had to be provided during the inspection from the DIBP's Canberra office.

It has been a long established contractual arrangement between the DIBP and the manufacturer of the linear accelerators deployed across Australia that the manufacturer's service engineer network provides quarterly maintenance reports and annual reports detailing results of radiation surveys for each CEF. These reports include tests of emergency stop buttons, emergency pull cords, and safety interlocks. The most recent quarterly report for the Melbourne CEF could not be produced. A draft report for March 2017 was provided by the manufacturer's service engineer, who happened to be on site during the inspection. The DIBP relies on quarterly maintenance reports for important information, such as the working status of safety interlocks and emergency stop mechanisms, and radiation dose rates in occupied areas.

The RSA provided a survey report of the Melbourne CEF *Radiation survey of the Melbourne Container Examination Facility – 16 November 2017* (Report). In recognition of the movement towards citing ANSI/HPS N43.3-2008 as the relevant standard for all DIBP CEFs, the Report compares radiation survey results with the dose limits set in ANSI/HPS N43.3-2008. The report shows that radiation dose rates are less than the relevant limits set in ANSI/HPS N43.3-2008.

With regard to the DIBP quality management system documents (policies and procedures), it is understood that the DIBP policies and procedures are undergoing a process of review and amendment as a result of organizational change and departmental rebranding. Relevant CEF operating instructions were found to be located in the CEF control room.

The inspection team observed the complete scanning process during two screenings of sea cargo containers. All audible warnings, lights, and illuminated signs were observed to be operational.

The inspection team conducted an assessment of the compliance status of the CEF against relevant requirements in ANSI/HPS N43.3-2008, it was observed that:

a) The requirements relating to 'shielded installations' as defined in ANSI/HPS N43.4-2008 are applicable to the CEF.

b) The CEF is fitted with interlocks, and audible/visible alarms.

c) There are means of exit for any person inadvertently remaining in the scanning hall during an exposure.

d) Clearly labelled emergency stop buttons and emergency stop pull-cords are available to terminate exposure should any person inadvertently remain in the scanning hall during an exposure.

e) Signs with the radiation 'trefoil' symbol and written warnings are posted at appropriate locations.

Note: In preparation for the adoption of ANSI/HPS N43.3-2008 as the relevant standard applying to the Melbourne CEF, the radiation warning signs posted on the scanning hall entrance door will require attention so that the wording specified in ANSI/HPS N43.3-2008 is applied (i.e. CAUTION HIGH RADIATION AREA). This also applies to the signs posted at the vehicular entrance and exit doors.

f) The dose rates at occupied areas and outside the CEF are within the limits set by ANSI/HPS N43.3-2008.

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 **areas for improvement**:

1. Knowledge of the steps required to report radiation incidents, and the identity of Melbourne CEF SRSOs.
2. Familiarity with the training record keeping process and the production of a consolidated personnel training record.
3. The on-site record keeping of certification issued by the RSA to the Melbourne CEF service engineer certifying the engineer's qualifications and competency.
4. The provision of up to date quarterly maintenance reports provided by the manufacturer of the Melbourne CEF linear accelerator.

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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