Australian Government

Australian Radiation Protection and Nuclear Safety Agency

INSPECTION REPORT

Licence Holder: ANSTO	**Licence Number:** F0157
Location inspected: Lucas Heights Science and Technology Centre, Lucas Heights	**Date of inspection:** 16 August 2011
	Report No: R11/09997

This is the record of an inspection 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, the Australian Radiation Protection and Nuclear Safety Regulations 1999 (the Regulations) and licence conditions.

The scope of this inspection was to gather information on general OPAL Utilisation record keeping, particularly the Utilisation personnel shift logbook or equivalent, and specific records associated with the fresh and used fuel quality inspections. The ARPANSA inspection team also intended to obtain information on selected recent events reported in the OPAL Reactor Operation Event Management System (ROEMS).

The inspection also included a facility walk through. A general check of the OPAL Utilisation work area was planned as part of the walk through along with discussions with the OPAL Utilisation personnel on duty.

The inspection consisted of interviews with personnel, inspector observations and examination of a number of selected OPAL Utilisation operational records. Particularly, the inspection examined the following documents:

- OPAL Utilisation Handover Form OUF 038 records, shift logbooks or equivalent for the months of March, April and May 2011
- ROEMS Single Event Reports of the following events associated with Utilisation operation were examined:
    - 1508: Fresh U-plate Targets damage
    - 1782: 7.55t Flask Transported with Key of the Interlock
    - 1765: Damaged U-rig Located on the Floor of Service Pool
    - 1678: Fuel Movement not Performed According to Procedure
    - 1999: String Detached during Loading Hot Cell to Bottom Load Transfer Flask load
    - 2009: Dummy Target Found in Hot Cell
    - 2115: Silicon Sizes
- Fresh and irradiated fuel records of ANSTO inspections, particularly OUF 061 Initial Inspection of CERCA Fuel Assemblies in the Level 4 Truck Access Bay and OUF 064 Irradiated Fuel Assembly Inspection

The following observations, conclusions and recommendations are based on an analysis of the information and evidence obtained during the inspection.

Observations:

1. The formalised OPAL Utilisation Shift Log and Handover Form OUF 038 approved by the OPAL management in March 2011 replaced an informal utilisation log. The document retained capacity to include information personnel consider important to communicate.
2. The inspection team reviewed the Utilisation shift logs for the months of March, April and May 2011. The review indicated that the logbook and handover form contained some information of

abnormal events already reported in ROEMS. No indications of other OPAL events were observed in the examined records.

3. Three of the events examined (ROEMS 1508, 1782 and 1765) were noted closed. The records of ROEMS 1508 and 1765 were found incomplete containing no information on the cause analysis and "lessons learnt".

4. Some of the events examined and dated in 2010 had not been closed even though the report indicated the investigation had been completed. The ANSTO representatives explained that those events are practically closed but still awaiting the formal administrative finalisation. For instance, the relevant instructions have been modified based on ROEMS 1678 in January 2011to prevent a recurrence of the event; however the event remains unclosed.

5. A number of records in OUF 061 and OUF 064 indicated that some specific inspection parameters were ticked "not accepted" by the ANSTO inspectors; however there was no indication of actions taken thereafter. When the ARPANSA inspection team discussed this finding with the Utilisation personnel, it was clear that the form could be ambiguous, and tasks could be interpreted differently by staff. For example, OUF 064 for CAS 142 dated 1 December 2010 indicated that a visual inspection of the irradiated fuel assembly was ticked "not accepted", although it was later explained that this was incorrect and that the staff had identified no problems with this assembly. Hence the form had been misinterpreted by the ANSTO inspectors. All examined forms were signed by the Utilisation Operator and Shift Manager as required by the document.

6. The ARPANSA inspectors understood that the ANSTO fuel inspections are conducted by two Utilisation Operators. The form is subsequently verified by the Shift Manager. One Utilisation staff member conducts the inspections whereas the other records the findings in the relevant form. It was not clear which Utilisation Operator signed off the form.

7. During the exit meeting some of the matters raised during the walk through were discussed with the ANSTO representatives. The Utilisation staff suggested using dedicated protective coats for OPAL personnel to prevent cross contamination. The pros and cons of using common protective coats for personnel versus dedicated protective coats were debated. ANSTO representatives explained that the main reason for the existing strategy was to promote scanning of protective coats for contamination after each use. However, it was observed during the walk through that coat scanning was not always conducted.

Conclusion: At the time of inspection, there was no evidence of non-compliance.

Recommendations: Based on evidence provided during the inspection, the following improvements to enhance best practice in nuclear safety were recommended:

1. It is expected that ROEMS record keeping of the event investigation, lessons learned, actions arising and linked documents information should be completed prior to event closure.

2. For investigation report 1558, the event was recorded in March 2010 but was still open in August 2011. It is suggested that ANSTO implements a system to ensure events are closed within a reasonable time period.

3. The forms associated with internal ANSTO fuel inspections should be reviewed for clarity. The scope of the review process should not be limited to documents related to fuel inspections, but it should include other QA documents associated with fuel and target handling.

4. In addition to recommendation 3 above, the requirements for form verification by signature should be reviewed.

5. The scanning of protective coats used in the OPAL radiation protection areas should be reinforced by ANSTO.

Good Practices: The following good radiation/nuclear safety practices were identified during the inspection:

1. The event reporting covered a broad range of events which may indicate a good level of event reporting.