



**Australian Government**

**Australian Radiation Protection and Nuclear Safety Agency**

## INSPECTION REPORT

<b>Licence Holder:</b> Parks Australia	<b>Licence Number:</b> F0093
<b>Location inspected:</b> Kakadu National Park, NT	<b>Date of inspection:</b> 10–11 September 2015
	<b>Report No:</b> R15/12196

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 program.

The scope of the inspection included an assessment of Parks Australia's performance in the areas identified in the facility licence Performance Objectives and Criteria.

### Background

The South Alligator Disposal Facility was constructed in 2009 to accommodate low level naturally occurring radioactive material arising from historical uranium mining operations in the vicinity of the South Alligator Village. Remediation of the historical mining operations was undertaken by the Commonwealth Government in an agreement with the traditional land owners.

Licence conditions on the Facility Licence F0093 require Parks Australia to maintain the integrity of the facility containment, and monitor the environment surrounding the facility to ensure there is negligible release of radioactive materials from the facility.

### Observations

In general, the physical inspection of the containment cover showed that there has been no significant surface erosion in recent years. The facility appears to have stabilized in time through the use of rock armouring, surface levelling, and management of the vegetation cover. The three soil monitoring stations and the weather station were all functioning. However, the monitoring data which had recently been downloaded from the soil monitoring stations was incomplete. The data was missing over several time periods, believed to be due to battery problems in some cases.

Recent subsidence around the SAFC-2 monitoring station had been repaired to avoid water pooling.

It was noted that there has been recent damage to the vegetation on the containment, following a late season bush fire in November 2014, which has resulted in the mortality of most of the Acacia trees. There has also been a significant invasion of annual mission grass on the containment. Along with the native grass, this has resulted in a significant fire loading on the containment, most noticeably at the bottom of the containment slope.

The amount of rainfall which flows down the containment slope in the wet season is measured by two tipping bucket stations which send data to the monitoring stations. These two tipping bucket stations are located towards the bottom of the containment slope on the west and east sides of the slope. It was noted that the plastic water collection inlets to the stations had been damaged in the recent bush fire. Furthermore, although the west tipping bucket station was relatively free of leafy debris and silt, the east station was significantly obstructed by debris and silt and surrounded by large clumps of native grass.

The external radiation gamma dose rate was measured outside the containment fence using an Automess meter and gamma probe, and indicated an average dose rate of 0.08  $\mu\text{Sv}/\text{hour}$ . The average gamma dose rate measured on top of the containment using the same meter was 0.07  $\mu\text{Sv}/\text{hour}$ .

### **Findings**

The licence holder was found to comply with the Act, applicable regulations, and licence conditions.

Parks Australia's performance may be improved by addressing the following performance deficiencies in the areas of Inspection, Testing and Maintenance, and Event Protection.

#### **Performance Deficiencies:**

1. The information from the monitoring stations was unreliable. This deficiency resulted in incomplete data sets.
2. The high fire loading on the containment facility increases the risk of bush fire in the late dry season.