



# Inspection Report

<b>Licence Holder:</b> CSIRO Agriculture & Food (CSIRO AF)	<b>Licence Number:</b> S0021
<b>Location inspected:</b> Toowoomba, QLD	<b>Date/s of inspection:</b> 21 March 2017
	<b>Report No:</b> R17/03327

An inspection was conducted as part of ARPANSA's 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 Source Licence S0021.

The scope of the inspection included an assessment of CSIRO AF's performance against the Source Performance Objectives and Criteria (PO&Cs) and consisted of a review of records, interviews, and physical inspection of sources.

## Background

CSIRO AF is authorised under section 33 of the Act to deal with controlled apparatus and controlled material. At Toowoomba, CSIRO AF uses controlled material in Neutron Moisture Meters (NMM) to assist Australian farmers and industry to improve productivity and sustainability across the agriculture sector.

## Observations

### *Performance Reporting Verification*

CSIRO AF's quarterly reports were submitted to ARPANSA in a timely manner and contained relevant information, including details of compliance with the Act and Regulations. Information for quarterly reporting is coordinated by the Business Unit Radiation Safety Officer (BURSO) with input from Toowoomba site personnel before it is consolidated into one report from CSIRO AF. Other documentation required by ARPANSA such as Regulation 51 and Regulation 53 submissions are also coordinated through the BURSO as needed.

### *Training*

All personnel at the site using NMMs are required to undertake radiation safety training. Records of radiation safety training are kept and these were verified by the ARPANSA inspector for each person using NMMs. Training in the use of NMMs is provided by a contracted radiation safety trainer.

A system of refresher training is in place where the frequency of training is decided by the BURSO based on factors such as how often operators use NMMs.

### *Radiation Protection*

CSIRO AF has demonstrated a commitment to radiation protection by establishing policies to facilitate the safe and effective use of NMMs at the Toowoomba site. This is supported by a comprehensive

Radiation Protection Plan (RPP) to achieve and maintain best practice and compliance with the Act, the Regulations, and conditions attached to licence S0021. The RPP (version 1.1) was approved by the Director CSIRO AF in November 2016.

Section 3.2.1 of the RPP deals with hazard identification and risk assessment, including the development and use of safe work instructions (SWIs). The SWI for the use of the NMMs contains a declaration for each operator to sign which signifies that they have acknowledged and understood the instructions and will comply with them.

CSIRO AF issues operators of NMMs with appropriate personal dosimeters. Dose reports show that all doses attributed to wearers are below the minimum reportable dose specified by the personal monitoring service provider.

The building used to store the NMMs is built of durable material and posted with appropriate radiation safety warning signs. The store is locked using a key which is kept in a secure location. A written record is kept within the store to record the movement (in & out) of each NMM. At the store, reference material includes the NMM instruction manual, and ARPANSA Radiation Protection Series No.5 *Code of Practice & Safety Guide – Portable Density/Moisture Gauges Containing Radioactive Sources*.

The NMMs are in good condition. A padlock secures each sealed source assembly in the shielded position when not in use. A 'Type A package' transport case is assigned for each NMM and three sets of transport vehicle placards are kept in the store for use by operators during off-site transport.

Copies of the SWI are kept within each transport case. However, the SWIs consist of the cover page only and are not complete.

During the inspection CSIRO personnel carried out wipe tests on the NMMs in accordance with established procedures and section 4.3 of the RPP.

#### ***Emergency Preparedness and Response***

CSIRO personnel follow site emergency management requirements, including the Site Emergency Management Plan. Section 7.6 of the plan details corrective actions to be taken in the event of a radiation leak or spill, and the steps to be followed should a NMM be lost or stolen.

#### **Findings**

The licence holder is in compliance with the requirements of the Act, the Regulations, and licence conditions.

The inspection revealed the following **area for improvement**:

1. Incomplete Safe Work Instructions accompanying the Neutron Moisture Meters.

It is expected that improvement actions be taken in a timely manner.