



18 December 2017

Ref: R17/13702

Dr Larry Marshall  
Chief Executive Officer  
CSIRO  
PO Box 1700  
CANBERRA ACT 2601

## Request for Updating Waste Inventories

Dear Dr Marshall

### Background

This request for action relates to radionuclide inventories of controlled material<sup>1</sup> held by you that is, or is likely to be considered as radioactive waste. This is material for which no further use is foreseen, but still requires to be stored, until ultimate disposal is possible, and as such requires to be licensed under the ARPANS Act. In particular, this request for action concerns low-level radioactive waste (LLW)<sup>2</sup> intended for disposal at any proposed future National Radioactive Waste Management Facility (NRWMF) and stored intermediate level waste (ILW) pending a decision on its full life-cycle management<sup>3</sup>.

The Department of Industry, Innovation and Science (DIIS) is pursuing plans for establishing a NRWMF, where currently three sites in South Australia are under consideration. As you are aware, predisposal management (such as storage and conditioning) is a key aspect of ultimate disposal that can only be carried out if the waste conforms to agreed Waste Acceptance Criteria (WAC), developed for the waste management facility or facilities in question. Such WAC will form part of the safety case for the facility and will be subject to regulatory approval. As plans progress towards the establishment of a NRWMF, a comprehensive understanding of Commonwealth waste holdings (e.g. radionuclide activity content and concentrations, volumes, chemical and physical properties, waste matrix and other relevant characteristics) is essential for the development of the WAC and will enable informed regulatory decisions to be made regarding waste management facilities such as the NRWMF.

I am aware that, across Commonwealth licence holders, the waste under consideration may not have arisen from activities carried out by the current entity holding the licence, but emanates from activities carried out by one or several of its predecessors or collaborating entities, and thus constitutes what is commonly referred to as 'legacy waste'. In some situations activities were at that time considered justified but an appropriate infrastructure for the full life-cycle management of resulting waste was lacking or incomplete. Actions were

<sup>1</sup> Any natural or artificial material, whether in solid or liquid form, or in the form of a gas or vapour, which emits ionizing radiation spontaneously (section 13 of the ARPANS Act).

<sup>2</sup> Information on waste categorisation is available in Radiation Protection Series 20 *Safety Guide for Classification of Radioactive Waste* (ARPANSA 2010)

<sup>3</sup> Current plans for ILW management involve storage at the NRWMF but as yet not disposal.

therefore taken to store and, as applicable, condition the waste so that it would not pose immediate or medium term radiation risks of any significance for people (workers and the public) and the environment. However, in the absence of a final management framework, including ultimate disposal of the waste, it could generally not be characterised and/or conditioned to meet WAC for facilities for final management in mind. Nevertheless, controlled material held by you must come within the scope of your licence, regardless of its origin, and if it is not accurately recorded in your source inventory then it must be regarded as an unlicensed dealing under the ARPANS Act. Further, maintaining an updated source inventory is a licence condition.

Based on the above, the current licence holders have to assume responsibilities for the legacy from previous activities even though they might not have been part of such activities, and are, therefore, required to keep their source inventories accurate and up to date. Uncertainties may affect plans to ultimately dispose of the waste, either in a NRWMF or through other means.

### **Current status**

Recent inspections performed by ARPANSA have identified instances where 'legacy' sources of radiation may not have been recorded, or have not been accurately and completely characterised in source inventories. Moreover, discrepancies have been identified in inventories held by licence holders and by ARPANSA. Some licence holders have proactively come forward and advised ARPANSA that their radionuclide (source) inventories may not have been fully up to date. I appreciate the openness licence holders have demonstrated in relation to legacy waste holdings, as well as their constructive approach to resolution of this issue in the interest of safety and protection of people and the environment.

Contributing factors to current uncertainties include, but are not limited to:

- legacy controlled material and controlled apparatus have been stored away for several years and limited records were previously maintained;
- corporate knowledge has not been appropriately maintained; and
- characterisation of legacy materials conducted in the past may not conform to the modern scientific standard.

Based on the above, it is timely that licence holders review their radionuclide inventories and as necessary update the inventories as well as relevant information that will support the standard elements of the WAC for the NRWMF. ARPANSA intends to verify the inventories through inspections and, if necessary, measurements *in situ* or at ARPANSA's laboratories, and will cross-reference inventories with records held by ARPANSA. It is anticipated that such verifications will, normally, be carried out within 12 – 18 months of today's date.

ARPANSA is not aware of any information that would raise concerns for harmful effects to people and the environment from past practices, or that there is any pressing risk to the health and safety of people and the environment. Nevertheless, actions need to be taken to mitigate potential hazards, for the purpose of protecting the health and safety of people and the environment for the long term and for as long as the hazardous properties of the waste pose a radiation risk of concern.

### **Consultation**

Relevant licence holders have been advised in advance of this request for information and ARPANSA has considered the specific situation licence holders may envisage on a case-by-case basis. ARPANSA will

continue to provide guidance while emphasising that the ultimate responsibility for safety rests with the operator.

The DIIS, having policy responsibility for the NRWFM, was informed of my intention to make this request. The verifications carried out by ARPANSA will not bind or pre-empt regulatory decisions in relation to the NRWFM (a positive decision by the CEO of ARPANSA is required for preparing a site; construction; operation; decommissioning of a storage facility and ancillary facilities; and for abandoning a site and surrendering a licence), but will facilitate the review of a licence application, should ARPANSA receive one.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Carl-Magnus Larsson', written in a cursive style.

Carl-Magnus Larsson  
CEO of ARPANSA

RELEASED BY ARPANSA UNDER FOI FEBRUARY 2019