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**From:** s 22 - Irrelevant  
**Sent:** Saturday, 28 January 2023 10:51 AM  
**To:** s 22 - Irrelevant  
**Subject:** ARPANSA Update on missing radiation source in Western Australia - 28 January 2022 [SEC=OFFICIAL]

Please see below update from ARPANSA as of 10:30am 28 January 2022.

#### Background

- A 19.9 Giga-becquerel (GBq) industrial radiation source in a level gauge was transported by road on a trailer from s 22 - Irrelevant in the Pilbara to the Perth metropolitan area for s 22 - Irrelevant. The ceramic radioactive material was inside a metal capsule which is 6 mm diameter and 8 mm long.
- The source was packed on 10 January 2023 - secured in the gauge housing, then inside a transport box (to which it was bolted), this was mounted on a pallet and initially stored s 22 - Irrelevant. The Pallet was collected and loaded onto a trailer by the s 22 - Irrelevant on 12 January 2023 for transport by road to Perth. It travelled through some intermediate depots before arriving at the premises s 22 - Irrelevant in Malaga on 16 January 2023. The pallet was stored at those premises until being opened on 25 January 2023, when the source was found to be missing. The source is thought to have fallen through a hole in the damaged box and then from the trailer to the road.
- Investigations by s 22 - Irrelevant including physical and instrumental searches of various sites and a section of the Great Northern Highway near Bindoon, have been conducted and are continuing. These efforts to find the source have not been successful. The Department of Fire and Emergency Services (DFES) is the Hazard Management Agency for the incident s 22 - Irrelevant of the missing material.

#### Situation Update

- ARPANSA Duty Officer was contacted s 22 - Irrelevant on Friday 27 January advising that a Category IV radiation source (20GBq Cs-137) has become detached from the gauge during transit between Wittenoom and Perth WA (approximately 1,400km distance) and requesting advice on any available equipment that ARPANSA had which may assist in the recovery of the lost source noting the extensive distance. WA Health also requested advice from ARPANSA to validate their calculations of any possible health risk (dose estimates).
- ARPANSA advised s 22 - Irrelevant that we have two different vehicle-based detection systems and confirmed with them possible timing of mid-week next week for any possible delivery to allow sufficient time to make planning arrangements and for ARPANSA to prepare the system for deployment.
  - Noting the significant search area, further work is required by ARPANSA to calculate the maximum speed at which any vehicle can travel whilst not compromising detection capability.
- A formal Request for Assistance s 22 - Irrelevant for Australian Government assistance to locate the missing radiation source, namely:
  - Specialised radiation detection capability, to locate 20 giga-becquerel of Caesium-137 up to 10 to 15 metres off the side of the road.
  - The total distance of road is estimated as 1350km of regional highways and would also include some metropolitan road routes.
  - The request is a priority, with the requirement for the equipment to be on the ground into Perth by no later than Wednesday 1 February 2023. The duration of the request is unknown at this stage and would be dependent on the ground coverage area of the capability provided.

- ARPANSA as the National Competent Authority for Convention on the Early Notification of a Nuclear Accident, which includes lost radiological material, will consider [REDACTED] s 22 - Irrelevant [REDACTED] in due course given the widescale media reporting.

#### Safety and Security Risk

- ARPANSA [REDACTED] s 22 - Irrelevant [REDACTED] that the material is of a low chance of harm however is of enough concern to warrant its recovery if possible. The radiation exposure is approximately 2mSv/h at 1m with the possibility of radiation burns if held closely for extended periods. The exposure risk will remain for several years due to the approximately 30 year half-life of Caesium-137.
- If found, a general cordon of 30m is sufficient in line with ARPANSA emergency guidance.
- The material does not present a radiological security concern.

#### Media

- [REDACTED] s 22 - Irrelevant [REDACTED]
- We responded 'The Australian Radiation Protection and Nuclear Safety Agency is aware of and in communication with the Western Australian Government regarding the missing radioactive material. ARPANSA will continue to provide any necessary support to WA authorities to assist them in their work.'

#### ARPANSA Contact

The central point of contact for this incident [REDACTED] s 22 - Irrelevant [REDACTED]

[REDACTED] s 22 - Irrelevant [REDACTED]

Australian Radiation Protection and Nuclear Safety Agency

[REDACTED] s 22 - Irrelevant [REDACTED]



Australian Government  
Australian Radiation Protection  
and Nuclear Safety Agency



We acknowledge the Traditional Owners and Custodians of Country throughout Australia, and we pay our respects to them and their cultures, and Elders past and present.