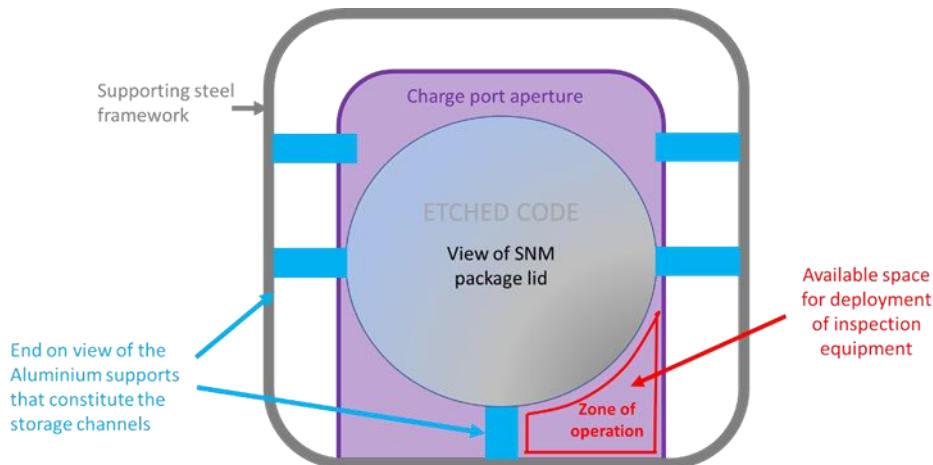


Supplementary information for SNM packages inspections in-situ challenge

In one of Sellafield's SNM stores, an inspection solution could be deployed within the full width of the channel beneath the SNM packages, as per figure 4 of the challenge statement. In the rest of the SNM stores there is a central rail supporting the underside of the SNM packages, as shown below. In this situation, inspection solutions can only be deployed down one side or the other of the central rail.



Any inspection solutions that require rotation of SNM packages should allow for lifting of the packages to avoid any damage that may be incurred by rotating the packages whilst in contact with the support structures. It should also be borne in mind that in some scenarios the packages are “co-joined”.

The lid of each package should be in contact with the base of the package in front of it, so the lids of the packages are not visible for packages in-situ except for the front package which is closest to the channel port.

No marks can be made on any of the SNM packages, temporary or otherwise.

Sometimes the SNM packages are moved to a different position within the lifetime in the SNM Store.

It is the assumption that inspection techniques will be initially deployed manually on readily accessible channels (low height).

Two of Sellafield's modern stores currently use wheeled engineered inspection systems. There may be an opportunity to characterise channels in terms of any potentially obstructing debris before deployment of an inspection system.

The breaking and re-sealing of SNM storage channel security sealing is outside the scope of this challenge.

Supplementary information for SNM packages inspections ex-situ challenge

The outer can of the SNM packages is 1mm thick. Sellafield would like to be able to detect any loss of wall thickness as a percentage of the overall can thickness. In terms of detection of surface features on SNM packages, current guidelines stipulate that the following are not acceptable:

- Scratches greater than 0.127mm depth
- Lids protruding by more than 4mm
- Dents of more than 8.5mm depth

Lighting can influence visibility of some features of interest on the surface of an SNM packages, so any solutions should reduce glare.

The temperature in the ex-situ inspection area is usually around 20°C and the temperatures within the SNM packages themselves can range from about 30°C to 156°C depending on contents and store.

One population of SNM packages have an ID number laser etched on the lid. This could potentially be used as a datum marker.

Within the existing ex-situ inspection areas, SNM packages can be rotated manually, but not stood on end. If a new system were capable of standing packages on their end that would be an acceptable practice.