Management of Disused Sealed Sources

Introduction

Sealed sources contain radioactive material that is permanently sealed in a capsule or bonded and in a solid form. The capsule of a sealed radioactive source is designed to prevent the radioactive material from escaping or being released during normal usage and under probable accident conditions. All sealed sources are controlled by Institutional Radiation Safety Committee and the RSO and certain protocols should be followed when handling such sources or the equipment they are installed in.

Uses of sealed sources in the University

Used sealed sources in KAUST are of low activities and does not pose high risk. The main applications for sealed sources in the university are as follow:

Application	Source	Activity (µCi)	Physical State
Liquid Scintillation Counters (embedded)	Ba-133	18.8 µCi	Solid
STD Calibration Kits for LSC	H-3 & C-14	0.2 & 0.1 µCi	Liquid
GC-Chromatographer (embedded)	Ni-63	15 µCi	Solid
Check sources for calibration	Various sources	0.1-5 µCi	Solid

Disposal of Disused Sealed Sources

If a sealed radioactive source is disposed, the following procedure will be followed:

1- Sealed sources that need to be disposed of, must be returned to the manufacturer or manufacturing country.
2- For sealed source contained in an equipment, the RSO will arrange with the manufacturer or their service representative to remove the source from the equipment, package the source according to their specifications, and transferee it to the radioactive waste building.
3- For std calibration kits and stand-alone check sources, the RSO arrange to be transferred to the radioactive waste building.
4- All disused sealed sources will be kept in the radioactive waste building for a short time, during which the RSO will arrange with the NRRC to return all sealed sources to the manufacturer through the local supplier in coordination with NRRC and General Security.