

Department of Health

Radioactive Inventory Disposal

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Victoria

History of Radiation Regulation



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Radiation Regulations in Victoria

History

1958	Radiation safety regulated under Health Act
1984	Health Act amended to specifically include radiation safety
1994	Health (Radiation Safety) Regulations made
2005	Radiation Act 2005 enacted
2007	Radiation Regulations 2007 made
2017	Radiation Regulations 2017 made

Authorised Version No. 033

Radiation Act 2005

No. 62 of 2005

Authorised Version incorporating amendments as at
1 July 2021

The Parliament of Victoria enacts as follows:

Part 1—Preliminary

1 Purpose

The purpose of this Act is to protect the health and safety of persons and the environment from the harmful effects of radiation.

Victorian Department of Health Radiation Team



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Victorian Storage arrangements



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Inventory project

Radionuclide	% of total inventory
Ra-226	31%
Am-241	28%
Co-60	9%
Sr-90	8%
Cs-137	7%
U-Nat	6%
Others	11%

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Disposal Project – Stage 1 - Consultation

- **Engage Consultants**
- **Provide consultants with inventory**
- **Consultants review inventory and work with their disposal pathways to determine disposal strategy and cost**

Stage 1 findings and recommendations from consultation

- **Two main overseas disposal pathways identified**
- **One main domestic pathway identified**
- **Inventory detail is incomplete. Pathways therefore come with caveats.**
- **HP work likely required before many disposals can be executed.**

Our inventory – basic info

- **Description of the source (visual observations, notes)**
- **Radionuclide**
- **Model, Serial No.**
- **Activity either from label or determined through measurements**

Our inventory – detailed info

- **Security Category**
- **Exempt Status**
- **Category / Subcategory**
- **Packaging**

Problems with inventory info

- **Vital details embedded in description fields**
- **Some items were combined (e.g. density gauges)**
- **Activity in some cases could not be determined accurately**
- **Missing info on concrete encased materials**
- **Some activity calculation formulas were making invalid assumptions**
- **Photos in some cases were not adequate**

Problems with inventory info



- **Dimensions of items largely missing**
- **Surface contaminated objects – activity will be very difficult to quantify without direct measurement**
- **Leak testing not performed on sealed sources**

Requirement for a guidance document




Draft Standard
Requirements for Radiation Source
Inventories

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Inventory information sheet

VGISF material information sheet		Images
Identification		Description
VGISF Identification Number	170503_1	square of metallic foil (rigid) type source. The material is a steel ribbon type. Activity to be estimated from dose rate measurement and source catalogue
Current Status	Held in inventory	
ASNO permit number	N/A	
TRIM Reference	unknown	
Serial No / Unique ID	unknown	
Acquisition Details		
Acquisition date	3/05/2017	
Collected From	Old VGISF	
Article details		Images
Radionuclide	Am-241	
Chemical form	Unknown	
Physical form	solid	
Sealed/Unsealed	Unknown	
Gross weight (g)	TBD	
Estimated Net Weight (g)	5	
Reference Activity (Bq)	TBD	
Estimated Activity Concentration (Bq/g)	#VALUE!	
Reference Date	3/05/2017	
half life (s)	1.37E+10	
Estimated current activity (Bq)	#VALUE!	
Estimated current activity Concentration (Bq/g)	#VALUE!	
Surface Dose Rate (µSv/h)	TBD	

Regulatory requirements	
Regulatory status in Victoria	#VALUE!
ASNO registration required (Yes/No)	No
Storage	
Current storage location	Storage Area A
Current Primary containment	sample vial
Current Secondary containment	White lead pot
Testing requirements	
Wipe testing	Not required
Radionuclide ID	Incomplete
Heat sealed plastic bag	Not required
Drum containment	Not required
Disposal Details	
Proposed Disposal Pathway	Radioactive material facility
Disposal facilitator required	Yes



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Where to from here

- **Get certainty on details required for disposal pathway requirements**
- **Work through inventory item by item gathering these details for each source**
- **Prepare document during this process that can be used as a standard in future for radioactive source inventories.**

Thank you

Questions?