Health and Safety Procedure

HSP38 - Managing Radioactive Substances in Schools

1. Haringey Council Procedure

1.1. It is the policy of Haringey Council to ensure the health, safety, and welfare of all its employees at work, of pupils while they are engaged in activities in our schools, contractors with whom it has partnerships to deliver services, as well as members of the public who live within or access its properties.

1.2. It is recognised that secondary schools may be required within the Science curriculum to undertake activities and demonstrations using low level radioactive sources that are subject to specific legal controls to ensure safety. The Council will ensure that the risks from such activities are properly managed and controls implemented to ensure the likelihood of injury to pupils, staff and others associated with such activities is minimised.

1.3. This procedure provides the framework to manage radioactive substances and sets out arrangements for purchase, use, monitoring and disposal to ensure risks related to radiation derived from the holding and use of radioactive substances to pupils, staff and members of the public are minimised.

1.4. Detailed guidance is contained in the CLEAPSS document **L93 Managing Ionising Radiations and Radioactive Substances in Schools and Colleges** to which all Haringey maintained schools have access at and should download at: http://science.cleapss.org.uk/

2. Scope of procedure

2.1. This document is intended to provide guidance for schools Science staff to ensure procurement, storage, usage, monitoring and disposal of radioactive substances is carried out safely with a straightforward process that reduces risks to staff and pupils to a minimum so far as reasonably practicable thus allowing schools to meet statutory responsibilities with regard to health and safety concerning the control of ionising radiations. The procedure should be in addition to the school Science health and safety policy which should be customised from the CLEAPSS DL223 model Science department health and safety policy.

2.2. The procedure includes statutory requirements, responsibilities, and guidance on procedures including emergency action in the event of a spill or ingestion of a radioactive substance.

2.3. This procedure is designed for Haringey maintained schools only. Academies, Foundation and Voluntary aided schools are the employer in their schools.

3. Legal framework

3.1. The Health and Safety at Work Act 1974 lays the responsibility for health and safety with the employer who is also responsible, so far as is reasonably practicable, for the health, safety, and welfare of anyone else on the premises.

3.2. In the case of Community, Community Special and Voluntary Controlled schools, the LEA is the employer. The governing body is the employer of staff in Academies, Foundation, Foundation Special and Voluntary Aided schools.

3.3. The Management of Health and Safety at Work Regulations 1992 and 1999 require employers to produce and implement risk assessments, develop methods of controlling risks including training of staff and monitor procedures and practice.

3.4. The Ionising Radiations Regulations 2017 specify how employers must ensure the safety of their employees who work with ionising radiations (and others affected by their work). Schools are not exempt and if the practical work comes within the scope of these regulations, they must be followed.

4. Key Terms and Summary Information

CLEAPSS	Consortium of Local Authorities for the Provision of Science Services, the organisation recognised by the HSE and Department for Education for providing advice and guidance on management of radioactive substances in schools.
HSE	Health and Safety Executive, the enforcement authority for health and safety offences including the Ionising Radiations Regulations (IRR) 2017.
RPA	Radiation Protection Adviser – HSE defined role, the competent person with a duty to provide an employer on radiological protection and compliance with the IRR 2017.
RPO	Radiation Protection Officer – the competent local authority officer providing guidance on management of radioactive substances in schools and the liaison point with the CLEAPSS RPA.
RPS (Schools)	Radiation Protection Supervisor – person in school with the day-to-day responsibility for the security, safe storage, use and monitoring of radioactive sources in the school, and for ensuring that staff understand the Standard Operating Procedures and model risk assessments. This person should be a senior leader with authority to ensure procedures are enacted.
Standard school holding	Sources and quantities of radioactive materials suitable for school use as defined by CLEAPSS which schools could be expected to keep.
Leak test	A sealed source "leak" occurs if the radioactive material becomes damaged and is loose, the leak test is a check on the condition of sealed sources to ensure they are undamaged.

5. Responsibilities for Implementation

The local authority, Headteacher, Head of Science, Radiation Protection Supervisor (Schools), Science teachers and Science technicians all have responsibilities for safety relating to use of radioactive materials in schools.

5.1. Local authority – the LA is the employer for maintained schools in Haringey and is therefore accountable for compliance with health and safety legislation including arrangements to meet the requirements of the Ionising Radiations Regulations 2017. The LA must:

- Register with the HSE as a radiation employer.
- Appoint a Radiation Protection Adviser (RPA) with suitable knowledge and experience of work in education.
- Appoint a Radiation Protection Officer (RPO) to liaise between schools and the CLEAPSS RPA.

- Provide suitable and sufficient guidance on how to manage the procurement, use, storage, monitoring and disposal of radioactive substances.
- Carry out a yearly inspection on the school's management of radioactive sources (subject to buying into the Health and Safety for Schools Service Level Agreement).

5.2. Radiation Protection Adviser – this is a position defined by the HSE with a duty to advise the employer on radiological protection and compliance with the Ionising Radiations Regulations. There are various statutory matters where an employer must consult an RPA many of which would not normally apply to schools hence in Haringey the CLEAPSS RPA scheme applies.

The RPA will advise on:

- Appropriate risk assessments for each activity
- Drawing up contingency plans.
- Selecting and using personal protective equipment.
- Storing and accounting for the sources.
- Training
- Schools do not usually liaise directly with the RPA, instead contacting the RPO with queries.

5.3. Radiation Protection Officer – the link between the schools and the RPA, responsible for:

- Visiting schools yearly to ensure the school is managing radioactive sources properly to provide reassurance that the arrangements for radiation protection are working to the employer (the LA).
- Writing and sending reports to the RPA about the radioactive sources in schools following routine visits or incidents with radioactive sources.
- Providing schools with advice from the RPA and ensuring implementation.

5.4. Headteacher – the Headteacher is accountable for the management of radioactive materials in school and must:

- Appoint a Radiation Protection Supervisor (Schools) to ensure risks to staff, students and members of the public from radioactive materials are properly managed.
- Ensure appropriate information, instruction and training on management of radioactive materials is provided for school Science staff.

5.5. Head of Science – responsible for the management of radioactive materials / sources in the Science department and must:

- Advise the Headteacher on the appointment of a Radiation Protection Supervisor (Schools).
- Ensure that radioactive substances are accounted for, stored properly, handled safely and monitored regularly.
- Provide employees with appropriate information, instruction and training in radiation protection to ensure their health and safety.
- Ensure the management arrangements for radioactive sources set out in the latest CLEAPSS document L93 Managing Ionising Radiations and Radioactive Substances in Schools and Colleges (currently November 2019) are enacted and adhered to.

5.6. Radiation Protection Supervisor (Schools) - responsible for:

- Liaison with the local authority RPO where advice is required from the RPA and during the annual RPO visit.
- Completion and maintenance of a copy of the Standard Operating Procedures and contingency plans.
- Ensuring the model risk assessments are suitable for the school.
- Safe storage usage and monitoring of the radioactive sources.
- Procurement and disposal of radioactive substances in accordance with guidance in the CLEAPSS L93 document.
- Maintenance of the radioactive substances' logbook in school.
- Organising training for school Science teachers and technicians and ensuring staff understand the standard operating procedures and model risk assessments.
- Authorising teachers and technicians to use radioactive sources and maintaining a current training record in the school radioactive sources logbook.
- Completion of the annual RPS (Schools) annual check and maintaining a record in the school radioactive sources log book.

5.7. Science teachers and technicians – responsible to ensure:

- The standard operating procedures and risk assessments are adhered to when using radioactive sources for demonstrations.
- Attending training when required on managing ionising radiations and radioactive materials.
- Reporting any issues with radioactive materials or equipment used during demonstrations.
- Recording all usage and access to radioactive materials in the school radioactive substances logbook.

6. Procedure checklist

The following is a summary of the procedure for school Science staff to ensure the risk from radioactive sources is recognised, properly managed and statutory requirements adhered to.

Full information on all listed processes is detailed in the national guidance designated by Haringey as appropriate for all schools.

RPS/Technicians Procedures

6.1. Obtaining sources **RPS (Schools)**

- Consult with RPO, Headteacher and Head of Science on requirement to obtain new sources, setting out source(s), reasons and providing information relating to suitability as defined in the Standard School Holding.
- Notify the RPO on receipt of the change to the radioactive sources held by the school.

6.2. Use of sources

All sources must be used in accordance with the CLEAPSS standard operating procedures and model risk assessments. Duties as follows:

Science Teacher

- Ensure they are formally authorised by the RPS (Schools) to use radiation sources see L93 for suitable competency requirements.
- Request source from the Science Technician and sign use log document on receipt and again on return of the source to the Science Technician.
- Complete comment box if required.
- Use source in accordance with the Standard Operating Procedure and Model Risk Assessment.

Science Technician

- Check that teacher requesting radiation sources is authorised by RPS.
- Sign out sources from the store cupboard. (Check that source is present in box)
- Deliver source to teaching staff who will sign use log document.
- All staff fill in comment box if required.
- Collect source 10 minutes before end of lesson and replace in store after checking source is present.
- Sign radioactive sources log.

6.3. Leak Test

To be Undertaken at the start of every academic year, to be carried out by technicians who have been trained by RPS (Schools). To check:

- Functionality of counter.
- Source leaks through leak test method.
- Damage to sources both at open and closed ends.
- Contamination in radioactive materials store.

6.4. Store Cupboard Check

Technician to carry out monthly to check:

- All sources present.
- No extra material in radioactive substances store.
- Record check in school radioactive substances log book.

6.5. RPS (Schools) Annual Check

To be undertaken at the beginning of every academic year.

- Check source list and histories against inventory.
- Ensure all sources are present.
- Check use log is up to date and being used.
- Check staff/student authorisation forms are up to date & organise relevant training for all new staff members.
- Check the monthly store check list is up to date.
- Physical examination of store cabinet and sources.
- Store cabinet checked for contamination.

6.6. Disposal of sources

Schools may need to dispose of radioactive sources for the following reasons:

- the source is listed as unsuitable (double red-framed) in section 6.7.
- the source is no longer exempt under the environmental regulations;
- the school has substantially more than the Standard School Holding without justification – this can happen when schools are amalgamated;
- the source is not suitable for use in schools (e.g., old military instruments with Radium painted dials).
- the source has been damaged or is leaking (this is rare); or
- the source has a relatively short half-life and has become too weak (e.g., Cobalt-60).

6.7 There are legal duties attached to disposal of sources.

- schools have a duty of care to make sure their waste is managed properly and disposed of safely. This duty applies even if a contract is in place to collect your waste and dispose of it – the school needs to take reasonable steps to check that the contractor will manage your waste properly.
- When disposing of sources, you will need a risk assessment. This is generally covered by the CLEAPSS Standard Operating Procedures in L93 section 6.6 and the additional information in section 12.4 and its subsections.

7. Further information

Schools must obtain and download the latest version of the CLEAPSS guide L93 Managing Ionising Radiations and Radioactive Sources in Schools and Colleges and apply the guidance in full.

7.1 A full set of templates for the school radioactive sources logbook is provided below

7.2 For assistance contact the Radiation Protection Officer at Haringey health and safety team at: Health.SafetyAdvice@haringey.gov.uk T: 020 489 4589

8. Monitoring and Review

8.1 This safety procedure must be reviewed by the Corporate Health, Safety and Wellbeing Board within a period not greater than 26 months. In addition, it will be revised as soon as practicable where changes in statute or industry best practice deem the content out of date

9. Approval of this Procedure

9.1 This safety procedure was reviewed by the Corporate Health, Safety and Wellbeing Board and approved by the Council's Head of Organisational Resilience on 11th May 2021. Any required variations from this safety procedure should be brought to the attention of the Council's Head of Organisational Resilience.

Approved by (print name): Andrew Meek

Signature:  Date: 06/09/2021

Templates

Modify these templates for checklists, record sheets, letters and forms as necessary to suit your needs.

16.1	Checklist for the head of science or RPS (Schools) for managing radioactive sources in schools
16.2	List of radioactive sources held
16.3	Monthly simple store check
16.4	Radioactive source history
16.5	Use log for radioactive sources
16.6	Staff authorised to use/handle radioactive sources, and training
16.7	Label for protactinium generator
16.8	RPS checklist for radioactive sources and store
16.9	Withdrawn (Sample letter to supplier when purchasing radioactive sources)
16.10	Transport document (consignment note) for excepted package
16.11	Suitable labels for excepted packages
16.12	Example of a disposal record sheet

16.1 Checklist for the head of science or RPS (Schools) for managing radioactive sources in schools

Item		Tick
The employer has notified the HSE of the intention to use radioactive sources		
The employer has appointed a Radiation Protection Adviser (RPA)		
A Radiation Protection Supervisor (Schools) has been appointed		
For FE colleges in England and Wales, and maintained secondary schools in Wales: an approval letter is on file from the appropriate government education department		
The Standard Operating Procedures and contingency plans are in place		
The name and contact details of the RPS (Schools) and RPA have been included in the Standard Operating Procedures and/or in the science department's health and safety policy		
For schools in the CLEAPSS local authority RPA scheme, the name of the Radiation Protection Officer in the local authority is on the Standard Operating Procedures		
The radioactive substances held are within the Standard School Holding, or have been justified and approved		
Appropriate, working monitoring equipment is easily available		
There are satisfactory storage arrangements for radioactive substances		
The Fire and Rescue Service has been told where the radioactive substances are kept (probably via the site manager)		
Documentation is in place and kept up-to-date	The list of staff authorised to handle the sources is up-to-date	
	A *radioactive source history* exists for each source, including the results of inspections and leak tests	
	The *use log* is completed whenever sources are used	
	The monthly simple *store-check* record is up-to-date	
	The *RPS checklist for radioactive sources and store* is completed annually	
The RPS (Schools) is satisfied that staff authorised to handle or use radioactive substances are appropriately trained		
For each member of staff who handles or uses radioactive substances:	The RPS (Schools) is satisfied that they are familiar with and understand the Standard Operating Procedures	
	The RPS (Schools) has provided appropriate instruction and training	
The RPS (Schools) has ensured that appropriate instruction and training has been given to students aged 16 and above who handle sealed sources		
Signature:		

16.2 List of radioactive sources held

Name /reference no of source	Radionuclide/ chemical name	Original activity/ mass	CLEAPSS specific risk assessment type number[1]

[1] Type number that appears on the specific risk assessments in section 6.6 of CLEAPSS guide, L93 *Managing Ionising Radiations and Radioactive Substances in Schools and Colleges* (2018).

16.3 Monthly simple store check

Date of check	Comments	Signature

16.4 Radioactive source history

Unique name / reference number of source		
Radionuclide / chemical name		
Either the original activity (37 kBq = 1 µCi)	kBq	uCi
Or, for a radiochemical, the original mass (or volume) and specific activity	g (or cm^3)	kBq g^{-1}
Delivery date (attach original paperwork if possible)		
Supplier		
Supplier catalogue number		
Source serial number (sealed sources only)		
Source manufacturer		
Disposal date		
For a radiochemical, mass used up or disposed of		
Disposal route and details (Attach disposal record sheet and any paperwork from the waste contractor)		

Sealed sources: indicate significant blemishes, scratches etc, with dates when these were noted A sketch, or attach photograph of, the source. (Inspect foils with a mirror or digital camera)	

Inspection and leak tests (usually annual)
Include comments on any action taken: e.g., decontamination of a radium source and its container, referral to RPA if a source appears to be damaged or leaking

Date	Background reading (if relevant)	Inspection and leak test reading (if relevant)	Inspection and leak test (if relevant) passed (yes or no)	Test carried out by	Comment (if any)

16.5 Use log for radioactive sources (destroy after 10 years*)

(See the notes in L93 section 8 on data protection)

Source(s) used	Date and time removed from store Signature required: all source(s) present in containers	Member of staff supervising source(s)	Teaching group Include names of any students aged 16 and above using source(s)	Date and time returned to store Signature required: all source(s) present in containers	Comment (if any) Include mass of any radiochemical used up

Use log, page number:

* or other period as decided by your school policy.

16.6 Staff authorised to use/handle radioactive sources, and training

Name of school:			
The following members of staff have been authorised by the RPS (Schools) to handle and/or use radioactive sources from the date shown (delete names when an individual leaves the school)			
Name	Date authorised	Training courses, briefings etc	Date of course etc

16.7 Labels for protactinium generators

For the protactinium generator. See specific risk assessment 9 (section 6.7).

Label the outer plastic container and make a card version to keep in the tray.

Corrosive (skin, eyes). Irritant (respiratory)

Radioactive

PROTACTINIUM GENERATOR

DO NOT OPEN THE GENERATOR BOTTLE

Follow special instructions provided.
Always use the bottle in a tray and keep a spill kit nearby.

In the event of a spill, cover with mineral absorbent and alert the Radiation Protection Supervisor (Schools) immediately.

Contains:
Concentrated hydrochloric acid
Uranyl(VI) nitrate-6-water
Pentyl ethanoate

Note: some generators may use alternative organic solvents, so you may need to modify the label accordingly. See CLEAPSS *Hazcards* for relevant information.

16.8 RPS (Schools) checklist for radioactive sources and store

Date	Source list and histories up-to-date? (yes or no)	All sources present, inspected and leak tested? (yes or no)	Use log is up-to-date? (yes or no)	Store cabinet (and transport packaging if relevant) inspected and checked for contamination? (yes or no)	Signature of person in charge of radioactive sources in the school: RPS (Schools)

16.10 Transport document

Transport document (consignment note) for transporting radioactive sources as excepted packages by road

Transport document	
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009	
Consignor (Name and address of school sending the package)	Consignee (Name and address of person receiving the package)
Contact phone number	Contact phone number
Contact name: RPS (Schools)	Contact name
United Nations number	UN 2910 / UN 2911 (delete inapplicable)
Description of radioactive substances	
Signed	
Date of commencement of journey	

16.11 Suitable labels for excepted packages

Name of consignor: School address: Telephone:	Name of consignor: Address: Telephone:
Excepted package, UN Class: 7 UN Number: UN 2910	Excepted package, UN Class: 7 UN Number: UN 2911

16.12 Example of a disposal record sheet

Record of disposal of radioactive source/material	
Name of school/college	
Address of school/college	
Description of source/material disposed of and CLEAPSS type number (if applicable).	
Source identifying code or serial number if applicable, e.g., any code used on the source container, or inventory reference	
Radionuclide and original activity in units of becquerel. If an unsealed compound, also state the approximate mass or volume.	
If the half-life has been taken into account, give the estimated activity at the time of disposal	
Date it was disposed of	
Disposal preparation, and disposal route, e.g., grout and dustbin	
For schools in the CLEAPSS RPA scheme, has the RPO been notified?	
For schools not in the CLEAPSS RPA scheme, has the RPA been notified?	
Name of the person authorising the disposal	
Signature of the person authorising the disposal	
Position of the person signing – e.g., RPS (Schools)	