

RPA002 - CLEAPSS Radiation Protection Officer (RPO) handbook

This guide should be read in conjunction to the following documents on the CLEAPSS website:

- RPA001 – describes how the RPA service works
- L093 – Managing Ionising Radiations and Radioactive Substances in Schools and Colleges

The main tasks of an RPO

You are not expected to be a technical expert in radioactivity or radiological protection, and you should not give advice on such matters. Your main task is to visit your schools/colleges periodically, to check that the science department is storing and managing their sources according to the guidance in L093, and that their records are in place. If you have concerns following your inspection, then raise this with the head of science and the Radiation Protection Supervisor (schools) at the school/college you visited, and contact CLEAPSS if you need clarification. If you take pictures with a smartphone or digital camera, it can greatly help discussions with CLEAPSS and subsequent feedback to the school/college.

If you have concerns about how a school/college is managing and storing their sources, contact CLEAPSS in the first instance, not your allocated caseworker RPA (unless that is a specific agreement you have with them). CLEAPSS is an RPA Body and can give routine advice on radioactivity. Only in more serious matters will CLEAPSS raise this with the caseworker RPA and may contact the school directly.

First steps (as a new RPO)

Attend CLEAPSS RPO training

The CLEAPSS RPO training course will get you acquainted on the type of work which is carried out in schools with respect to the radioactive sources. You will be able to see first-hand what the sources look like, how they are used in experiments, how they should be stored, and what records should be kept. The training course also goes through a detailed checklist (see appendix 1) of what is expected from you during a RPO monitoring visit. We also discuss the role of the teacher responsible at the school for managing the safe use and storage of the sources, called the Radiation Protection Supervisor (Schools) [RPS(Schools)]. We will explain how they should be able to perform leak tests and contamination checks, as well as showing you what the equipment needed to carry these out looks like, and how it works.

Compile a list of schools/the contact details for each RPS(Schools)/source inventories

You should have a list of all the schools/colleges that your organisation is providing cover for. This would include LA maintained schools and also academies, sixth-form colleges, and independent schools which may have bought in cover via your organisation.

The list should also have the name and contact details of the RPS(Schools), the date of the last visit by an RPO and the date of the most recent inventory submitted by the school. The list might look like the one below:

Name of School	Type of School	RPS Name/Contact	Date of last visit	Date of last inventory
St Johns School	LA	Steve Smith ssmith@st-johns.org.uk	11/11/2023	11/11/2023
London School	LA	John Smith johns@london.com	12/03/2022	10/03/2022
St James School	LA	Peter Jones peter.jones@stjames.co.uk	05/05/2023	02/05/2023
Hyde Park College	6 th Form College	Jane Johnson jane.johnson@hydepark.com	23/11/2023	22/10/2022
Leicester Sq Academy	Academy	Raj Patel raj.p@lca.org	02/02/2020	10/09/2019
Regents St School	LA	Daniel Jams dj@rgs.org.uk	01/02/2024	11/01/2024

For each school or college where you are acting as the RPO, you should hold a completed copy of the inventory. This is the list of the radioactive sources held by the school/college. In the above example, the inventory submitted by Leicester Square Academy is quite old, so a request can be made to ask the school to send one in, which can then be verified by a visit (more details below).

If you receive no response to e-mails sent to a school, you should call the school's reception and ask to speak to the head of science who should be able to give you the contact details of the RPS(Schools). If they are not familiar with the RPA service, you may wish to inform them of it, and ask them to contact CLEAPSS if they are unsure of what their and their employers' responsibilities are.

CLEAPSS Form 1 – for schools/colleges new to the service only

The Form 1 is used to determine if the employer needs to appoint an RPA, and whether the school/college can be part of the CLEAPSS RPA service. The form 1 need only be returned by the school to the RPO (and passed by the RPO to the caseworker RPA) when joining the service for the first time through you. Subsequent Form 1s are no longer required unless the school transfers to a new service provider/broker

Inventory (L093 16.2)

Schools need to send the RPO a copy of their inventory whenever there is a material change in their holding (eg they have acquired or disposed of a source). There are various sources which schools should no longer hold, and these are double red bordered in L093

Any school with any of these double red bordered sources should be contacted and advised that the radioactive source(s) in question should be disposed of. Impress the importance of timely legal disposal of the source(s). Do not tell them the specific disposal route. They should contact CLEAPSS for advice on disposal as this advice needs to come from CLEAPSS acting as the RPA body. Note: it is a condition of continued membership of the CLEAPSS RPA service that schools follow the advice in CLEAPSS guide L093. In the event that schools do not do this in a timely manner, please contact CLEAPSS and we will follow it up with the school on your behalf.

Deciding which schools to visit

You must make regular monitoring visits to the schools that your organisation provides the CLEAPSS RPA service. The frequency of visits should be based on risk. Establishments where you are less confident that they are managing their sources should be visited more often. CLEAPSS expects that on average schools will be visited at least once every two years. For schools that have a history of managing their sources well, this can be extended to once every three years.

Prioritise visits to schools which have:

- 1) not sent a recent inventory or have not been visited in the last 2 years
- 2) have radioactive sources which are 'double-red-bordered' in L093, in other words, the radioactive sources for which CLEAPSS recommends disposal (see L093, page 26-48)
- 3) were found, during a previous visit, not to be following the guidance in L093

All first visits to a school must be face to face. If the school is following all of the guidance in L093 subsequent visits could alternate between virtual and face to face.

What to expect, and what to do on a visit

When visiting the school, you will normally go to reception to sign in and wait for the relevant member of staff to come and collect you. You will meet either the RPS(schools), a technician, or other member of the science department. They will take you to the school radioactive source store cabinet, which should either be a science store room, or, in some cases, a science prep room.

You can now use the checklist in appendix 1 to aid your inspection. Points 18-30 rely upon a visual examination of the sources in the cabinet and the room they are kept in. Go through each of the points in turn. On occasion, it may be necessary to ask schools to unbox or handle a particular source. Ensure this is done by the school staff, the RPO should not themselves be handling any radioactive source.

Ask questions of the staff. For example, point 19 says *The cabinet store room is lockable and accessed only by science staff*? Ask the question directly, and if the answer is no, find out who else has access to this room and make a note of it.

The other points on the checklist can be done in the same location, or in a staff room. We expect all school RPS's to attend CLEAPSS RPS(Schools) training course. Appropriate training is a legal requirement as it provides an essential understanding and overview of the safe use and storage of radioactive sources, and ensures that the employer meets the broader training requirements in the Health and Safety at Work Act 1974. In addition, the HSE requires that the RPS(Schools) should have refresher training at least every 5 years.

If you have not met the RPS(Schools) (for instance, if you were shown around by a technician), ensure you get their name and e-mail address. If the school has identified a deputy RPS(Schools) (who will often be the technician) record their name and contact details as well. Amend your own records as needed. As schools often have a high turnover of teaching staff, it is likely that your contact list will need frequent updating. It may be useful to keep contact details of the technician as they often remain in the school for a longer time, than teachers.

After the visit – visit reports

During your visit, if you have identified areas where the school's arrangements do not match the advice in L093 you will have commented on these verbally. It is also necessary to provide this in writing. A suggested format for a visit report is included in appendix 2, along with an example of a visit report for a fictitious school. The visit report should be sent to the RPS(Schools), the head teacher and your caseworker RPA (not CLEAPSS). By agreement with the caseworker RPA these could be sent in small batches.

For more serious issues (eg insufficient security arrangements) a follow-up visit should be made as soon as possible. It may, however, be sufficient for photographic evidence to be sent to you. So, for example, if a school didn't have a trefoil on their cabinet, a photo of the trefoil in place, sent by email, would generally mean an urgent follow up visit would not be necessary.

If a school buys (or disposes) a source (or sources)

Schools should only buy sources from the recommended list in the guide *Choosing new radioactive sources for school use: advice for science departments* (PS078) available on the CLEAPSS website.

The list also includes sources readily available from school science suppliers that we advise against buying (tables 6, 7 and 8 within PS78, which have a red border around them). If a school either buys or disposes of a source/sources, they need to send you an updated inventory which reflects these changes.

Your relationship with the caseworker Radiation Protection Adviser (RPA)

For most routine queries from schools, the expectation is that these are dealt with by CLEAPSS. Under most circumstances the caseworker RPA would not need to be contacted. If you have a routine query from a school, for example seeking confirmation of how to dispose of a particular source, you should direct the school to contact CLEAPSS by phone/e-mail.

The CLEAPSS RPA service is designed to provide RPA cover to schools at an affordable cost. As such, the caseworker RPAs themselves are remunerated with a minimal fee for each school in their care. Their input would only be sought if the situation were significant enough to warrant it.

In such serious situations, it would normally be CLEAPSS which contacts the caseworker RPA. We will then keep you informed of the outcome and copied in to any email exchanges.

Other than in exceptional circumstances, the RPO should not give the caseworker RPA's contact details to the school or the RPS(Schools).

Appendix 1

RPO visit checklist		
Responsible Person and training	Yes	No
1 The employer has appointed a suitable Radiation Protection Adviser (RPA)		
2 The employer has registered the science department's use of radioactive sources.		
3 There is a record (ideally in the department H&S policy) of the name of teacher appointed as the RPS(Schools)		
4 The RPS(Schools) has attended a suitable training course within the last 5 years		
5 There is an up-to-date list of staff authorised to handle the sources.		
6 Authorised staff have received suitable training (which may be in-house) within the last 5 years		
7 There is an up-to-date record of all the training given and when it was given.		
Records and Paperwork		
8 The Standard Operating Procedures (SoP) have been completed and remain suitable for the circumstances at the school.		
9 Each source has a suitable specific-source risk assessment guidance available, and the RPS(Schools) has completed the bottom row of each guidance.		
10 Checked that the 'Use' row on the specific-source risk assessment guidance remains suitable for the sources and how they are used.		
11 The contingency plans are suitable for the school, and additional notes added as necessary.		
12 The radioactive substances held are all within the Standard School Holding.		
13 The relevant rows in section 15 table on dose rates have been ticked		
14 There is an up-to-date accurate source inventory (this can be digital), checked within the last year.		
15 Appropriate, working monitoring equipment is easily available.		
16 There are suitable signposts to the L093 in the point-of-use schemes of work.		
17 The use log is completed whenever sources are used, including a column to record that information has been given to students.		
Storage		
18 There is suitable internal storage of the radioactive sources, including correct signage on the cabinet door.		
19 The cabinet store room is lockable and accessed only by science staff.		
20 The cabinet is fixed to the bench or fabric of the building.		
21 The cabinet is at least 2 m from any regularly-used workstation.		
22 There are no bulk flammables or corrosive materials in the vicinity of the cabinet.		
23 Only radioactive sources and their immediate containers are stored in the cabinet.		
24 There is a monthly store-check record, and it is up-to-date.		
25 Within the last year, all the sources have been inspected and all the sealed sources leak tested.		

26 A radioactive source history exists for each source, including the latest results of inspections and leak tests.		
27 There are suitable arrangements for the security of cabinet keys, combination codes, etc.		
28 A spare cabinet key is located securely offsite or in a different building.		
29 Any waste source has arrangements for prompt disposal.		
30 The location of the store cabinet is identified on the school's fire risk assessment.		

Appendix 2

CLEAPSS RPO visit report template		
Name of School and address of school		
Date of visit	Date of previous visit	
Name & e-mail of RPO	Name & e-mail of RPS (schools)	
Persons present during visit		
Responsible Person and training		
1 The employer has appointed a suitable Radiation Protection Adviser (RPA)		Actions required (with indicative timescale)
2 The employer has registered the science department's use of radioactive sources.		
3 There is a record (ideally in the department H&S policy) of the name of teacher appointed as the RPS(Schools)		
4 The RPS(Schools) has attended a suitable training course within the last 5 years		
5 There is an up-to-date list of staff authorised to handle the sources.		
6 Authorised staff have received suitable training (which may be in house) within the last 5 years		
7 There is an up-to-date record of all the training given, and when it was given.		
Comments		

Records and Paperwork		
8 The Standard Operating Procedures (SoP) have been completed and remain suitable for the circumstances at the school.		Actions required (with indicative timescale)
9 Each source has a suitable specific-source risk assessment guidance available, and the RPS(Schools) has completed the bottom row of each guidance.		
10 Checked that the <i>Use</i> row on the specific-source risk assessment guidance remains suitable for the sources and how they are used.		
11 The contingency plans are suitable for the school, and additional notes added as necessary.		
12 The radioactive substances held are all within the Standard School Holding		
13 The relevant rows in section 15 table on dose rates have been ticked		
14 There is an up-to-date accurate source inventory (this can be digital), checked within the last year		
15 Appropriate, working monitoring equipment is easily available.		
16 There are suitable signposts to the L93 in the point-of-use schemes of work.		
17 The use log is completed whenever sources are used, including a column to record that information has been given to students.		
Comments		

Storage		
18 There is suitable internal storage of the radioactive sources, including correct signage on the cabinet door.		Actions required (with indicative timescale)
19 The cabinet store room is lockable and accessed only by science staff.		
20 The cabinet is fixed to the bench or fabric of the building.		
21 The cabinet is at least 2 m from any regularly-used workstation.		
22 There are no bulk flammables or corrosive materials in the vicinity of the cabinet.		
23 Only radioactive sources and their immediate containers are stored in the cabinet.		
24 There is a monthly store-check record, and it is up-to-date.		
25 Within the last year, all the sources have been inspected and all the sealed sources leak tested.		
26 A radioactive source history exists for each source, including the latest results of inspections and leak tests.		
27 There are suitable arrangements for the security of cabinet keys, combination codes etc		
28 A spare cabinet key is located securely offsite or in a different building.		
29 Any waste source has arrangements for prompt disposal.		
30 The location of the store cabinet is identified on the school's fire risk assessment.		
Comments		

Example of a completed RPO visit report (Fictitious)

CLEAPSS RPO visit report template		
Name of School and address of school St Johns School		
Date of visit 01/04/2024	Date of previous visit March 2022	
Name & e-mail of RPO Will Johnson (will.johnson@wessex.org.uk)	Name & e-mail of RPS (schools) Steve Smith (ssmith@st-johns.org.uk)	
Persons present during visit Will Johnson (RPO) Steve Smith (RPS(Schools)) Chris Thurgood (senior technician)		
Responsible Person and training		
1 The employer has appointed a suitable Radiation Protection Adviser (RPA)	Y	Actions required (with indicative timescale) RPS to contact CLEAPSS within the next 7 working days for advice about registration with HSE. RPS details updated in the H&S policy. Do this within the next 7 working days. RPS to attend refresher training as soon as practicable and no later than the end of this term.
2 The employer has registered the science department's use of radioactive sources.	?	
3 There is a record (ideally in the department H&S policy) of the name of teacher appointed as the RPS(Schools)	N	
4 The RPS(Schools) has attended a suitable training course within the last 5 years	N	
5 There is an up-to-date list of staff authorised to handle the sources.	Y	
6 Authorised staff have received suitable training (which may be in house) within the last 5 years	Y	
7 There is an up-to-date record of all the training given, and when it was given.	Y	
Comments The school is not sure if the employer has registered with the HSE The RPS schools identified in the Dept H&S policy has left The current RPS last went on training 6 years ago at his previous school		
Records and Paperwork		

8 The Standard Operating Procedures (SoP) have been completed and remain suitable for the circumstances at the school.	Y	Actions required (with indicative timescale) RPS to review section 9 in L093 and record any local adaptations needed to the relevant contingency plans. Contact the CLEAPSS Helpline if further advice is required on this. Complete the table at the start of the section. (14 working days). “Uranium nitrate” See below RPS to Create a source history sheet for the new Co60 source and add this source to the inventory – send a copy of the updated inventory to the RPO. (7 working days). RPS to remember to include the Co60 source in the, leak tests at the end of the year School to buy suitable equipment to carry out leak tests & contamination monitoring - RPS to refer to section 11 and contact CLEAPSS for further advice as necessary. (PRIORITY, next 4 weeks). Suspend all practical work involving the radioactive sources until suitable equipment is available. RPS to ensure that schemes of work contain necessary safety notes highlighting the need to follow the advice in L093 – Schemes of work to be viewed on next visit
9 Each source has a suitable specific-source risk assessment guidance available, and the RPS(Schools) has completed the bottom row of each guidance.	Y	
10 Checked that the Use row on the specific-source risk assessment guidance remains suitable for the sources and how they are used.	Y	
11 The contingency plans are suitable for the school, and additional notes added as necessary.	N	
12 The radioactive substances held are all within the Standard School Holding	N	
13 The relevant rows in section 15 table on dose rates have been ticked	Y	
14 There is an up-to-date accurate source inventory (this can be digital), checked within the last year	N	
15 Appropriate, working monitoring equipment is easily available.	N	
16 There are suitable signposts to the L093 in the point-of-use schemes of work.	?	
17 The use log is completed whenever sources are used, including a column to record that information has been given to students.	Y	
Comments The RPS was unaware that the contingency planning guidance (section 9) in L093 needed to be checked and this confirmed by completing the section on page 55 There is a bottle containing a small amount of yellow crystals marked as radioactive – recorded on the inventory as “uranium nitrate” The school acquired a new cobalt 60 source (CLEAPSS type 8a) in July 2023. This does not yet have a source history record and is not listed in the source inventory The monitoring equipment available for leak testing does not appear to match the advice in section 11 of L093 I was not able to access schemes of work during the visit		

Storage		
18 There is suitable internal storage of the radioactive sources, including correct signage on the cabinet door.	Y	Actions required (with indicative timescale) RPS to refer to L093 section 4.1 – Contact CLEAPSS if further advice on securing the cabinet is needed. Get the cabinet secured by a competent contractor. (14 working days). RPS - See L093 section 4.1.6 regarding what to store in the cabinet. (14 working days). RPS to ensure monthly store checks record each source separately see template 16.3 in L093. (7 working days). Once suitable detection equipment has been purchased leak tests on sealed sources will need to be re-done within 14 working days after the equipment has been received. RPS to send results to RPO RPS to contact the CLEAPSS Helpline within the next for advice about the disposal of the radiochemical. (7 working days). RPS to check with the site manager that the location of the storage cabinet was identified on the school's fire risk assessment. (7 working days).
19 The cabinet store room is lockable and accessed only by science staff.	Y	
20 The cabinet is fixed to the bench or fabric of the building.	N	
21 The cabinet is at least 2 m from any regularly-used workstation.	Y	
22 There are no bulk flammables or corrosive materials in the vicinity of the cabinet.	Y	
23 Only radioactive sources and their immediate containers are stored in the cabinet.	N	
24 There is a monthly store-check record, and it is up-to-date.	??	
25 Within the last year, all the sources have been inspected and all the sealed sources leak tested.	??	
26 A radioactive source history exists for each source, including the latest results of inspections and leak tests.	N	
27 There are suitable arrangements for the security of cabinet keys, combination codes etc	Y	
28 A spare cabinet key is located securely offsite or in a different building.	Y	
29 Any waste source has arrangements for prompt disposal.	N	
30 The location of the store cabinet is identified on the school's fire risk assessment.	??	
Comments The cabinet and its location match the advice in L093 however the cabinet is not attached securely.		

<p>The cabinet contains items other than the sources themselves (what appear to be a set of absorbers)</p> <p>The RPS was not aware that the monthly store checks require eyes on each source and must be recorded individually “all present” is not sufficient</p> <p>In view of the questions about the suitability of the monitoring equipment (see point 15 above) leak test results are likely to be unreliable</p> <p>There is a bottle containing a small amount of yellow crystals, marked as radioactive – recorded on the inventory as “uranium nitrate” – presumed to be CLEAPSS type 16 or 17 in L093</p> <p>The RPS did not know if the location of the storage cabinet was identified on the school’s fire risk assessment</p>	
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School/college name and address St Johns School			
Location of the store that this inventory applies to: Science block Store room next to Lab 201			
Date inventory checked 01/04/2024			
Name & e-mail of person completing the inventory Steve Smith (ssmith@st-johns.org.uk)			
Name /reference no of source	Radionuclide	Original activity (in kBq)	CLEAPSS specific-source risk assessment guidance type number ¹
SJS001	Am-241	185	8a
SJS002	Sr-90	185	8a
SJS005	Uranium Nitrate	Approx 20g	16

¹ Type number that appears on the specific-source risk assessment guidance in section 6.6 of CLEAPSS guide, L093 *Managing Ionising Radiations and Radioactive Substances in Schools and Colleges* (2024).

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