

## HSE radiation inspections

In Bulletin 276 [1] last summer, we reported that the Health and Safety Executive (HSE) intended to inspect a sample of schools throughout the UK to check whether their use and storage of radioactive materials complied with the Ionising Radiation Regulations (IRR17). In the period November 2022 to March 2023, 16 Scottish schools were visited.

The SSERC team had a number of meetings with HSE personnel before and after the inspections. The following is a summary of what they found out, what is happening now and what happens next.

### Findings

Compliance rates – the percentage of schools where no breaches were found - were quite high when compared with other sectors. There were, however, issues in some schools, resulting in employers being both fined and required to produce a plan detailing how they would deal with shortcomings. Schools that were following SSERC guidance were compliant. According to one inspector, the situation in Scotland was “all or nothing”. Schools were either exemplary or were doing virtually none of the tasks – stock checks, leak tests etc. that are required by law. Interestingly, all of the non-compliant schools were aware of SSERC advice and knew that they could contact us for help. It appears that the greatest cause of non-compliance was that when a member of staff who had been responsible for supervising work with radioactive materials moved on, nobody else picked up the mantle. Out of date training was also a significant issue. We must say that at no point did we feel that inspectors were failing schools for petty nit-picks. Indeed, any feedback we received about the inspection process was positive. Words like “supportive” and even “kind” were used.

### What is happening now?

We will be modifying some of our guidance as a result of the inspections.


- When carrying out a stock check, please list, on the log of usage, the individual sources that were checked.
- HSE expect all those using radioactive materials to be trained every 3 to 5 years. Whilst this could be inhouse, the member of staff responsible for overseeing work



A source undergoing a leak test.

with these materials, called the RPS by many schools, should have SSERC training at this frequency too. This could be via one of our online courses, but if the RPS has never had direct training on safe handling using actual sources, they should attend a face-to-face training event. If employers wish to run their own safe handling training this must be sanctioned by SSERC.

- Though not a modification to our guidance, we would like to again stress that any risk assessments or contingency plans supplied by SSERC must be modified to suit local circumstances. >>

 <b>SSERC Example Risk Assessment for Teacher Demonstration Using an Am-241 Hi Tech Sealed Source with an Activity of 74 kBq</b> <small>This example risk assessment should be adapted for your own particular circumstances.</small>		
<b>Activity assessed</b>	Teacher Demonstration Using an Am-241 Hi Tech Sealed Source with an Activity of 74 kBq	
<b>Date of assessment</b>		
<b>Date of review</b>		
<b>School</b>		
<b>Department</b>		
<b>Employer</b>		
<b>List significant hazards here:</b>	<b>Who might be harmed and how?</b>	<b>Control measures (what is being done to make the risk tolerable)</b>
Exposure to ionising radiation due to storage of radioactive sources.	Teachers, Technicians, Pupils, Other employees who may work in the vicinity of the store. Exposure to ionising radiation can cause deterministic and stochastic effects.	When not in use sources are kept (within their storage receptacles) in a secure storage cabinet which is in a suitable location - minimum distance to a pupil work station 1.5 m, teacher work station 2.5 m, technician workstation 3 m. (Or if shielded by a brick - minimum distance to a pupil work station 1 m, teacher work station 2 m, technician workstation 2 m.)  Gamma sources are stored at least 20 cm back from the storage cabinet door and any accessible sides (or shielded with a brick).

Generic SSERC risk assessments must be customised.

SSERC produces guidance and helps school staff implement it via our training and help-lines, but it is the employer's duty to see that our advice is being followed. Several local authority personnel have been in touch with us for advice on making non-compliant schools compliant. We have also had enquiries on how to carry out inhouse inspections and have supplied checklists linked to our own documentation. These employer-led inspections have highlighted some additional issues.

- The only radioactive materials you should have in school are the ones detailed in Bulletin 256 [2]. Some schools are finding uranium and thorium compounds, usually in small amounts. Unfortunately, even small quantities can be tricky to dispose of, but you do not have an option to keep them.
- You are allowed to keep an ionisation chamber smoke alarm to demonstrate that it contains a radioactive source. On no account should the device be dismantled. To do so without a permit from SEPA, the environmental agency, would be a breach of law. If you have a dismantled smoke alarm that you cannot put back together, disposal can be difficult as it is subject not only to radiation laws but to waste electrical equipment legislation. "Difficult" is, fortunately, not the same as "impossible". Again, keeping a dismantled smoke alarm is not an option.
- Another item you must dispose of is a protactinium generator that is 8 years old or more. Disposal is expensive, but if an aged generator leaks and contaminates the fabric of a school building, failing to dispose will prove to be the falsest of false economies.

So far, no employer inspection has discovered any aged protactinium generators, but we believe there are a very small number of them "out there".

We have every sympathy for staff who discover sources that should not be in schools. In almost every case, it is an inherited problem. If you discover a source that is not on our approved list, please get in touch. Remember that you should not buy or acquire any radioactive materials or artefacts without consulting SSERC.

### What happens next?

HSE will continue to inspect schools. If you get notification of an inspection, please let us know and we will work with you to help you ensure that everything is in order. Note that, even if you have no sources but have possessed some in the last two years, in theory HSE could still inspect your records which you must retain for that period. HSE have also been asking about radon in schools. Whilst that is not the responsibility of teaching and technician staff, we have some basic guidance available on request. It might be worth highlighting this to your senior management, particularly if you are not in a local authority school.

It is our view that, in Scotland, the inspections have had a largely positive effect, raising awareness of the need to comply with legislation and emphasising SSERC's role in helping you to do so. <<

### References

- [1] <https://www.sserc.org.uk/wp-content/uploads/2022/06/Bulletin-276p18-Radioactivity-inspections.pdf>
- [2] <https://www.sserc.org.uk/wp-content/uploads/2020/08/256-Auditing-Radioactive-Sources.pdf>