

# Department for Environment, Food & Rural Affairs

## High-activity Sealed Radioactive Sources and Orphan Sources Directive (Council Directive 2003/122/Euratom)

### Guidance to the Environment Agency

#### Introduction

1. Applications to hold high-activity sealed sources (HASS) are made by a prospective user to the relevant environmental regulator under sections 7 and 10 of the Radioactive Substances Act 1993 (RSA93). Applications to accumulate or dispose of radioactive wastes are likewise made under sections 13 and 14 of RSA93. The regulators then carry out a determination of the application in advance of either granting a permit (a 'registration' for the keeping and use<sup>1</sup> of such sources; or an 'authorisation' for accumulation or disposal), or withholding permission. The regulators also have the power to vary registrations and authorisations, whether on application by the person holding such a permission or on their own volition.
2. The High-activity Sealed Radioactive Sources and Orphan Sources Regulations 2005 (2005 No 2686) and the HASS (England) Directions implement the High-activity Sealed Radioactive Sources and Orphan Sources Directive (Council Directive 2003/122/Euratom) (the HASS Directive). Under the Directions, holders of HASS must comply with Article 3(2)(b) of the HASS Directive, which states that holders must show that:

*“adequate provision, by way of financial security or other equivalent means appropriate to the source in question, have been made for the safe management of sources when they become disused sources, including the case where the holder becomes insolvent or goes out of business”.*
3. The Environment Agency must assess the adequacy of the proposed financial provision during the determination of applications for registrations

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<sup>1</sup> Note that under section 47(5A) of the Radioactive Substances Act 1993, the requirement to have a registration to keep or use HASS includes “any practice” in relation to that source except the disposal or accumulation of the source: and “practice” must be construed in accordance with Council Directive 96/29/EURATOM.

and authorisations or of variations of those permissions. To assist the determination, the holder<sup>2</sup> should provide a statement which describes:

- the mechanism(s) which the holder intends to employ to ensure that disused source disposal has been addressed; and
  - where the mechanism(s) requires a measure of funding, the quantum of financial provision which has been made, a demonstration that this quantum is sufficient and that the funds will be available at the appropriate time.
4. The statement made which describes the above must be supported, as appropriate, by financial or other information (eg formal contracts for take-back arrangements). In cases of an application for registration or authorisation, copies of this information should accompany the application. Original documents should be retained by the holder for inspection. Such documents must be kept up to date, for instance when new sources are purchased or replaced.
  5. The Environment Agency, as part of the determination, may check and query some or all of the statements that the holder has made, or require further information to be produced. The onus is clearly on the holder to ensure that the information he provides is accurate. The holder may be committing an offence if he makes any statement which he knows to be false or misleading.
  6. In the case of financial provision for HASS, no detailed financial or legal auditing is envisaged during the determination process, but the holder will be accountable to the Environment Agency for the information provided.

## **Scope**

### ***Source holders***

7. The guidance is intended to assist the Environment Agency in performing its duties and exercising its powers in relation to HASS. It may also be of assistance to all persons who possess or intend to possess HASS in England, including suppliers and manufacturers of isotopes and instruments incorporating them. The guidance is not a statement of the law and those who may be affected by it should obtain their own legal advice concerning their rights and obligations in relation to HASS.

### ***Organisation type***

8. It should be noted that the financial provision requirements apply equally to public sector and private sector organisations. Any organisation must

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<sup>2</sup> A holder includes a person who applies for a registration or authorisation, or whose permission may be subject to variation to comply with the HASS Directive's provisions.

demonstrate that it has made “*adequate provision*”, although certain mechanisms to make such provision may not be available to both public and private sector organisations.

## Exclusions

9. The guidance on acceptable mechanisms specifically excludes some mechanisms that are unlikely to survive insolvency. If an insolvency nevertheless should occur, then a receiver will be aware of any radioactive sources and will consider them as an asset or liability. The Environment Agency should engage with the receiver and seek to ensure that the sources will be managed in a safe and environmentally acceptable way. If appropriate, the Agency may intervene using statutory powers.

## Mechanisms for financial or other provision - general

10. Holders applying for a registration or authorisation relating to HASS must state, in their application form, which mechanism, or combination of mechanisms, they intend to employ for ultimate source disposal. They must also indicate what documentary evidence is available to support their statement.
11. Holders must make clear who (which body or individual) is responsible for the potential liability, and state that the body or individual is aware of the liability. In order to do this, private sector holders may make provision within their books of account for estimated disused source management costs under Financial Reporting Standard 12 – Provisions, Contingent Liabilities and Contingent Assets (“FRS12”). When holders make such an accounting provision they charge an estimate of the expense to the profit and loss account and include a provision to cover the estimate. However, accounting provision alone is not sufficient to demonstrate that adequate provision has been made.
12. In the case of public sector organisations, accounting provision is not appropriate. A public sector holder must show that budgeting provision has been made; that is, that there is a mechanism in place by which the funding body (usually a government department) is aware of the liability.
13. Some private contractors, are responsible for the management of HASS but the owner of the source is a public body. In these circumstances, the private contractor must show that the owner is aware of the liability, and that contractual arrangements are clear with respect to the ownership.
14. Whereas costs for source disposal may accrue over many years (and in some cases decades), budgets for government funding are unlikely to extend to this time horizon. Nevertheless, even if budgets have not yet been requested or approved to cover the period when source disposal will be required, it is essential that the funding body is at least made aware of

the liability, and that documentary evidence is available to support this notification.

## **Mechanisms for financial or other provision - specific**

15. The following mechanisms can be employed to support the general provisions (accounting or budgeting provision outlined above). It is not expected that every application for a registration or authorisation or variation of such a permission will involve financial provisions; a holder may choose to propose non-financial provisions alone.
16. Whatever mechanism or mechanisms are proposed, the holder must make provision for each and every new source that is to be acquired.

### ***Financial provisions – available now***

#### **Public sector underwriting**

17. For public bodies the budget holder/funding body has agreed to fund any liabilities which the body may incur as a result of its activities. Such bodies are provided with a 'Certificate of Assurance', or other document signed on behalf of the relevant Secretary of State. Some contractors working for public bodies have similar arrangements; that is, a public body has agreed to fund certain liabilities.
18. Required evidence: Written acknowledgement by the funding body, usually in the form of a 'Certificate of Assurance'.

#### **Charged funds**

19. Holders can set aside cash in a separate account to fund the estimated disused source management costs over which a third party holds a charge. The charged funds are ring-fenced from the holders' other assets and liabilities and are available to meet the costs of disused source management in the event of the holder's insolvency or other provision, e.g. accounts, not being available or sufficient.
20. In order to comply with the Directive and respond to insolvency risk this option will need to ensure that the charged funds are only available to meet the costs of disused source management of HASS and title to them cannot be challenged by or on behalf of other creditors. The charge over the funds should therefore be granted to the body to whom ultimate responsibility for disused source management will fall.
21. This option is considered to have a relatively high cost as it involves setting aside ring fenced cash which is not an efficient use of capital, although the implementation and on-going administration costs should be relatively low.

22. This mechanism will require the holders themselves to set up such a fund with a recognised fund holder. Government and regulators have no facilities to establish these arrangements.

23. Required evidence: Contract of agreement with the fund holder.

### **Third party guarantee**

24. Holders can obtain a guarantee (e.g. a bond or a letter of credit) in respect of their disused source management obligations from a third party. Usually, such guarantees are provided by banks or other financial institutions. In the event of the holder being unable to meet his obligations, the third party guarantee can be called in.

25. If they are willing to offer this service, third parties will normally charge holders a fee. The fee would be based on the third parties' assessment of this credit risk. However, counterparties will apply their own credit assessment processes to each holder and guarantees will not be available to all holders.

26. Required evidence: Third party guarantee in the form of a bond or letter of credit.

### **Parent company guarantee**

27. Holders can obtain a parent company (or equivalent) guarantee in respect of their obligation to fund the cost of disused source management. If the holder was unable to satisfy his obligations, the parent company could be called upon to discharge the costs under the guarantee.

28. A parent company (or equivalent) guarantee is only likely to respond to insolvency risk for a minority of holders as the credit position of a parent is often directly linked to the financial position of significant subsidiaries. It is only likely to be used in exceptional circumstances where the parent company has a credit rating similar to that of a bank in respect of its long term investment rating.

29. Required evidence: Parent company guarantee in a suitably drafted form of bond. The parent company needs to hold substantial assets and be demonstrably not dependent for survival on the activities of the subsidiary.

### ***Financial provisions – not currently available***

#### **Mutual insurance / indemnity for insolvency risk**

30. This option would require an industry-wide "mutual" fund to be established to aggregate and protect against the risk that participating holders become insolvent and fail to fund the costs of disused source management. A premium would be charged to members for accepting this risk.

31. The level of inherent uncertainty over disused source management costs is a limiting factor in determining the quantum of the premium, but it should make reference to expected costs, type of holder, type of source and insolvency risk. The aggregate premium would need to be sufficient to cover expected (and in due course, actual) costs arising from holder failure.
32. In the event that a loss occurs (i.e. a source holder with unfunded current or future disused source management liabilities) the cover has to be for the benefit of the party who assumes the liability. This insurable interest would need to be reflected in the insurance policy provided by the fund.
33. This option is conceptually similar to the approach adopted in other sectors, including the FSA Investor Compensation Scheme and the proposed Pension Protection Fund. However, no such mutual insurance fund is available at present.
34. The government will not initiate such a fund or be responsible for its management. This will be a matter for the insurance industry and the market to establish if there was to be sufficient interest.
35. Required evidence: Certificate of membership of mutual insurance fund.

#### **Segregated fund**

36. Holders can make contributions into a segregated fund held in trust from which disused source management costs could be met.
37. The segregated fund would need to be endowed with sufficient assets upon inception to cover the risk of a holder's insolvency in the early years of operation. To address this risk, the fund will need to be established on a pooled rather than an individual (holder) basis. The administrators of a pooled fund need to quantify the contributions of each holder to the fund based on the estimated costs of disused source management by holder. Any shortfall in the fund arising from previously under-estimated insolvencies and costs would be met by increased contributions in subsequent years.
38. The government will not initiate such a fund or be responsible for its management. As with mutual insurance, this would be a matter for the insurance industry and the market.
39. Required evidence: Fund certificate.

#### **Insurance / indemnity for entire cost**

40. Holders can purchase insurance or an indemnity to cover the estimated costs of disused source management. In exchange for a premium paid by the holder the insurance or indemnity counterparty would pay for the costs of disused source management in full when those costs fall due. The

counterparty (e.g. insurance company) would expect to retain control over risk rating and apply normal commercial judgement to the operation of the insurance.

41. Required evidence: Certificate of insurance.

## ***Non-financial provisions***

### **Take back agreement**

42. Some contracts between source suppliers and users contain a take-back agreement, such that at the end of life, the source is returned to the supplier. The cost of such take back is included in the purchase price.

43. Required evidence: Supply contract, in which it is explicit that the disposal cost (cost of return to the supplier) has been included in the purchase cost.

### **Source replacement agreement**

44. Some contracts between source suppliers and users contain a like-for-like replacement agreement, such that at the end of life, the source is returned to the supplier and replaced with a new one. The cost of removal is included in the purchase price.

45. Required evidence: Supply contract, in which it is explicit that the disposal cost (cost of return to the supplier) has been included in the purchase cost.

### **Leasing agreement**

46. Some contracts between source suppliers and users specify that ownership of the source remains with the supplier. At the end of life, the source is returned to the supplier. The cost of removal is included in the leasing price.

47. Required evidence: Leasing contract, in which it is explicit that the disposal cost (cost of return to the supplier) has been included in the lease cost.

### **Activity calculation**

48. Holders may wish to provide a demonstration that at the end of proposed life, the source will have decayed to below BSS exemption levels. This is a limited option that will only be relevant in the case of radionuclides with a short half-life.

49. Note that this option is **not** a 'decay storage' option; that is, it does not imply that a source should be retained for any significant period beyond the end of its life. It can only be applied if the source in question has an activity below BSS exemption levels at the time it becomes disused. Separate rules apply for applications for decay storage, for which an authorisation for the accumulation of radioactive waste will be required.

Decay storage for HASS at most premises is unlikely to be authorised because it is undesirable on safety, environmental and security grounds.

50. Required evidence: Calculations which demonstrate that the activity will have decayed to below BSS exemption levels at the likely end of the source's life. This must be supported by evidence that this has been done in the past, for similar uses and similar sources.

### **Other provisions**

51. The above list of mechanisms is based on research carried out on behalf of Defra. It may not be exhaustive. Should a holder wish to propose any mechanism not specifically described above, or a variant of one of the described mechanisms, then the Environment Agency should consider such a proposal. A key requirement is that any proposed provision must make allowance for disposal of sources even in the event of a holder's insolvency.

## **Level of funding required**

52. Where the selected mechanism requires the provision of funding, the funding level must be pitched such as to meet the total costs of disposal. Financial security needs to cover disused source disposal because this is the most expensive form of safe management that may need to be invoked when a source becomes disused. Deciding upon the appropriate level is problematical for a number of reasons, including:

- disposal costs, based on historical data, are highly variable depending on a number of factors such as the number of sources to be disposed (reductions for 'bulk orders' have been applied by disposal companies in some instances), the location and condition of the source, and prevailing market conditions;
- cost escalation, which historically has not been related to the RPI; and
- varying market conditions mean that it is difficult to anticipate whether or not a source will, at any time in the future, have a recycle value.

53. Notwithstanding the above, a holder must make an estimate, supported so far as possible with documentary evidence, as to the likely costs.

54. These costs should include not only the disposal of the source itself, but also any engineering work that will be required during the course of its removal and disposal. For a large irradiation facility, this could involve engineering work such as the demolition of parts of a building, and the use of a crane and a special transport container.

55. One means of demonstration by a holder that the level of provision is adequate would be for the holder to obtain a quote for disposal costs from a disposal company in advance of the application or at the time of first

purchase. In practice, this would mean that the holder would need to obtain a quote that would be valid for the near future, and then allow for inflation during the source's life. Such an arrangement has not hitherto been commonplace, but nevertheless it does give some measure of confidence for both the source holder and the Environment Agency. Arrangements of this nature should be encouraged by the Agency.

56. In the absence of such an agreement, historical disposal costs may be used by a holder as a basis for estimating future costs, although due allowance needs to be made for escalation. Historical escalation can be used as a guide. Historical data more than three years old is unlikely to provide a reasonable basis for estimating future costs.

## **Review of provisions**

57. Many of the mechanisms for provision listed above are time limited. For instance, insurance cover rarely extends beyond one year, with annual premiums required.

58. Disposal costs have escalated in recent years, and this escalation may continue.

59. For the above reasons, it is likely that the holder will need to conduct a review of financial provisions on a regular basis. It is noted that the Agency is committed to an annual inspection frequency for HASS.

Radioactive Substances Division  
Defra

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