



UK Surplus Source Disposal Programme

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Introduction

The UK Government Department for Environment, Food and Rural Affairs (Defra) was concerned that disused radioactive sources were being retained by hospitals, universities and businesses, posing a risk to public health and the environment. The UK Surplus Source Disposal Programme (SSDP), managed by the Environment Agency, was designed to remove redundant radioactive sources from the public domain. AMEC provided a range of technical and administrative support services to the Environment Agency ensuring the efficient disposal of more than 11,000 disused sources.

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Project outline

A questionnaire was issued to registered source holders and the submitted returns compiled to assess the scale of the project. A member of AMEC staff was seconded to the Environment Agency to provide technical support and liaise directly with source holders during funding applications, which would cover disposal costs. Funding for disposal of different sources was partially based on a sliding scale of risk as determined by the IAEA hazard categorization system.

This funding was also sector dependent, and initially included academic institutions, medical facilities, and industry (see Fig. 1). Following initial successes, the SSDP was subsequently expanded to include the disposal of luminised aircraft instruments from aviation museums across the UK. These museums often hold significant radiological inventories, with many items being unused and in a poor state of repair.

These instruments were fully characterised on site by assessing surface dose rate, dimensions, source integrity, and potential contamination issues (see Fig. 2).



Fig 1: Sources from academia, medical, industrial and museum sectors

Typical dose rates measured 10 - 100 $\mu\text{Sv/h}$ although many larger or more unusual items measured up to 0.5mSv/h. Calculations using the Microshield computer code allowed gamma radiation measurements to be converted into total activity estimates or each source.

Challenges faced by the AMEC team included encouraging cooperation between source holders and the Environmental Agency, characterisation of sources on a variety of different sites and distribution of the nationwide questionnaire.



Fig 2: Characterisation of museum sources

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Summary

AMEC provided technical expertise to the Environment Agency during the programme. More than 11,000 sources were disposed of under the programme from across the medical, industrial, museum and academic sectors.

The total activity disposed of was more than $8.5E+14$ Bq, and the project was delivered under budget. The project was shortlisted for the best Public Procurement project award.



Fig 3: UK aviation museums



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Further Information

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