



Science & Technology Facilities Council

Rutherford Appleton Laboratory

UK SBS Sourcing Reference: PR17007

Specification for a call-off contract for combustible waste arisings from RAL

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1. INTRODUCTION

The ISIS Facility based in the STFC Rutherford Appleton Laboratory (RAL) site at Harwell has a permit to accumulate radioactive waste at RAL and is currently holding various categories of radioactive waste in varying size and shape.

STFC are presently working through a planned reduction in the amount of waste held on site to satisfy their permit arrangements granted by the Environment Agency.

As part of this exercise a call-off contract is needed for the regular disposal of combustible waste. STFC are to engage a suitable and qualified bidder to take responsibility for the end to end disposal process from collection of waste packages from RAL to final disposal at suitable incineration location(s).

2. SCOPE & QUANTITY

2.1 Scope

Bidders are asked to provide a price schedule for the disposal of combustible radioactive waste for the next 4 years.

The scope of service required is for the end to end disposal process including, but not limited to; transportation, incineration, administration, production of disposal certification and management costs.

The contract shall operate as a call off agreement whereby STFC will order waste consignment collections as and when demand requires and each consignment collection shall be priced by the successful bidder in accordance with the schedule of rates.

The price shall remain firm and fixed for 2 years, thereafter they shall be subject to change in accordance with price adjustment mechanism for years 3 and 4 using the Services Producer Price Indices (SPPI) as published by the Office for National Statistics.

Year 3 & 4 prices shall be adjusted as soon as possible after publication of the SPPI indices or at a later date if so agreed between the Authority and the Contractor.

The base date for SPPI Indexation shall be the contract award date.

In the event where an index ceases to be published, during the period of the Contract the Authority and the Contractor shall agree a fair and reasonable adjustment to the relevant Index, or, if appropriate, shall agree a revised methodology which will have substantially the same effect as the SPPI.

A cost breakdown must be provided in the format shown in the price schedule 'AW5.2'.

Bidders shall provide STFC with waste acceptance criteria and permit for the incinerator. In addition if there is a likelihood of the waste being held or processed at a different facility other than the final destination site of the incinerator then the bidders should supply the following information with their bid; location, expected activities i.e. holding or processing of the waste prior to disposal, permit/license of the facility etc.

The final solution shall be subject to approval from the ISIS Radioactive Waste Manager.

2.2 STFC ISIS Waste Management Team will provide:

- Activity assessment of the waste
- Health physics monitoring cover
- Road transport labelling of the packages
- Dangerous Goods note and instructions to driver
- Resources to load the items onto the transport vehicle
- Provide the successful bidder with a copy of their holding permit (EPR10) as issued to them by the Environment Agency
- Waste packages

2.3 RAL Site Visit:

STFC have provided photos of sample waste packages at Appendix A and they do not envisage that a site inspection at RAL will be necessary for the purposes of submitting their proposal. However, a site visit may be accommodated on the dates stated in the RFP document. Should any bidders wish to visit site they should email their request via Emptoris no later than the site visit request date stated in the RFP document.

2.4 Typical Waste packages

The radioactive waste disposal requirement will typically consist of the following consignments types or combinations thereof:

Waste Item	Typical Dimensions
40litre warboys containing up to 40 litres of solvents or oils	61cm x 40cm
210 litre drums of soft combustible waste	85cm x 57cm
Fluorescent tube coffins containing fluorescent light tubes	190cm x 30cm x 30cm
Air filters (Various sizes)	Maximum 120cm x 60cm x 15cm
PacTech Bags with combustible waste	Maximum 120cm x 120cm x 120cm
Ion Exchange Columns from the magnet water cooling circuit	Maximum 130cm x 40cm

The majority of the waste will be transported in 200litre black drums, 40 litre warboys or Pactech Bags (or similar equivalent). However the supplier will need to handle other items of varying dimensions from time to time (please refer to award question AW6.5 titled 'Waste Acceptance').

2.5 Typical Activities and dose rate

It is assumed that the majority of the combustible waste arising from RAL will be <20µSv/hr on contact. However higher dose items may be sent from time to time on ad-hoc bases. To minimise the handling of waste, and therefore the dose to operators, the preferred supplier is to supply ISIS the maximum dose which the waste disposal facility can accept (please refer to award question AW6.4 titled 'Acceptance Criteria'. An estimated 95+% of the activity associated with the waste will be mixed beta/gamma, with tritium contributing a large percentage of this. The typical specific concentration of the waste is <100 Bq/g excluding the tritium content which maybe be as much as 1MBq/g. The typical transport package expected to be dispatched from RAL is either exempt or excepted packages, however packages up to IP-2 rated packages will be sent from RAL for incineration.

The waste will be characterised prior to ISIS requesting the disposal. The methodology, calculations and assumptions will be checked and approved by ISIS radioactive manager (or deputy) and a radioactive waste advisor. This information will be sent with the request for disposal to the preferred supplier.

2.6 Frequency of shipments

ISIS envisage a shipment of combustible waste needing disposal every 3 months however this could increase during periods where more soft waste than usual is generated (ie long shut downs).

2.7 Key contacts:

STFC ISIS has a dedicated team responsible for the management and disposal of the radioactive waste generated on site. Contact details of the ISIS Radioactive Waste Manager will be provided to the successful bidder subject to an award of contract.

3. REQUIREMENTS

Subject to an award of contract, the successful bidder shall fulfil the following requirements for each consignment of waste during the term of the call off contract:

3.1 The company/location to whom waste will be transferred is the holder of a current permit under the Environmental Permitting Regulations to receive and dispose of radioactive waste by incineration covering all items and quantities listed and described in this specification.

3.2 The waste is to be collected within 4 weeks of the manifest being accepted by the successful bidder (or at a sooner interval if stated in the winning bidder's response to award question AW6.2). Any waste not acceptable must be communicated to the ISIS radioactive waste management team as soon as possible.

3.3 Any location used to process the waste prior to disposal will be suitably licensed/permitted. Details of the location will be provided to the ISIS Radioactive waste manager prior to the awarding of the contract. Any additional locations/facilities will require agreement with the ISIS Radioactive waste manager prior to the waste being transported to this location.

3.4 The successful bidder will provide load plans which conform to BS EN 12195. ISIS Radioactive waste management team may ask for evidence of how the load plans conform to BS EN 12195. ISIS radioactive waste management team must approve the load plan prior to the items being loaded for transport.

3.5 The successful bidder shall provide Class 7 transport and suitably trained driver and shall produce all necessary documentation and carry on board all necessary equipment to satisfy regulations. The ISIS Radioactive Waste Manager will inspect this prior to each load being shipped.

3.6 Carry out all services in accordance with best practice procedures, guidelines and in compliance with relevant statutory regulations and will be responsible for checking and assuring compliance with all road transport legislation within their proposals, including but not limited to:

- The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009.
- The Radioactive Material (Road Transport) Regulations 2002, SI 2002 No. 1093
- The Radioactive Material (Road Transport) (Amendment) Regulations 2003, SI 2003 No. 1867
- The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2004, SI 2004 No. 568
- The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment (Amendment) Regulations 2005, SI 2005 No. 1732

3.7 The successful bidder shall provide details of haulage vehicle and load plans 7 days before the collection of waste to enable ISIS to check the Load plan and transport documents prior to shipping.

3.8 The waste shall be transported directly between the collection point at the Rutherford Appleton Laboratories (RAL) with a specified route to the final place of incineration. The successful bidder shall notify the ISIS Waste Manager of this route for their prior approval. Any location required for processing the waste will be indicated before the waste leaves RAL site. The proximity principle for the transport of radioactive waste should be taken into consideration to minimise the distance of transportation.

3.9 Disposal shall comply with the Environmental Permitting (England & Wales) Regulations 2010.

3.10 The person/location to whom waste will be transferred shall be the holder of a current permit under the Environmental Permitting Regulations to receive and dispose of radioactive waste by incineration for all types of waste listed in sections 2.4 and described in section 5 of this specification.

3.11 The successful bidder shall provide the ISIS radioactive waste manager with a certification of disposal within one month of taking receipt of the waste from RAL.

3.12 Provide details of any sub-contractors involved with any stages of the process and ensure they are managed in accordance with the contract terms and conditions.

3.13 The successful bidder shall facilitate a 'duty of care' visit by the ISIS Waste Manager and / or their Deputies to the incineration plant and or transportation office prior to the contact being awarded. Any issues raised by the RAL Radioactive waste manager/deputy must be addressed prior to the contact being awarded. The duty of care will include but not limited to; Inspection of holding areas, review of the management of waste at the incineration, risk assessments and method statements associated with handling/disposing of waste from the RAL site.

4. TIMESCALES

STFC require that the collection of each consignment of waste is within four weeks of request for disposal to the preferred supplier and preferably in less than 2 weeks (please refer to question AW6.2 titled timescales for completion). A certificate of destruction should be sent to the ISIS waste management team within one month of the waste being collected. The successful bidder shall keep the ISIS Waste Manager informed with prior information notices of at least 2 months of any risks to these time scales, for example planned maintenance of the incinerator. Collection dates shall always fall between Monday to Friday and between the hours of 7am to 4pm.

5. PREDICTED VOLUMES AND COMPOSITIONS AND RADIOLOGICAL CONTENT

Whilst the exact volume, weights or compositions are not exactly known as the waste will comprise mainly of operational waste. The following is a best estimate based on previous waste arisings on the waste likely to arise over the next two years:

Approximate Total Raw Volume	50	m ³
Approximate Total Conditioned Volume	50	m ³
Approximate Total Raw Weight	20	tonne
Approximate Total Conditioned Weight	22	tonne

Approximate Overall % Composition by weight and volume of the Waste:

	%Weight	%Volume
Metal	5	5
Concrete/rubble		
Soil	5	5
Biodegradable- non putrescible	20	20
Biodegradable- putrescible		
Plastics (halogenated)		
Plastics (non halogenated)	25	25
Rubber	10	10

Wood	10	10
Oils/Solvents	10	10
Aqueous Waste	10	10
Others	5	5

Whilst the exact radionuclide content is not known as the waste will comprise mainly of operational waste the following is a best estimate based on previous analysis of this waste stream:

Radionuclides	Activity (MBq) ⁽¹⁾	% Activity / Ratio
Carbon-14	0.40	0.00
Cobalt-60	71.82	0.41
Tritium	17412.39	98.69
Beryllium -7	37.24	0.21
Cobalt-58	0.36	0.00
Antimony-124	0.94	0.01
Sodium-22	7.88	0.04
Scandium-46	0.94	0.01
Manganese-54	7.06	0.04
Iron-55	26.92	0.15
Cobalt-57	2.60	0.01
Nickel-63	4.75	0.03
Zinc-65	3.34	0.02
Silver-108m	1.66	0.01
Silver-110m	10.32	0.06
Cadmium-113m	12.22	0.07
Caesium-137	0.50	0.00
Europium-152	0.02	0.00
Tungsten - 181	2.26	0.01
Tantalum-182	2.63	0.01
Group Total	17644.79	100.00

All waste will be fully characterised prior to the waste being transferred to the preferred bidder and will require the receiving site to confirm acceptance.

The manifest used for the costing is a typical consignment sent by STFC.

APPENDIX A- PHOTOGRAPHS OF SAMPLE WASTE CONTAINERS

Black drums:



Coffins for fluorescent tubes:



IXC1:



Warboys:



Appendix B - Sample manifest for costing purposes and typical shipment

The following list of waste arisings is provided for indicative purposes only as a typical waste consignment. Volumes, containers and types of waste may vary over the period of the contract.

The sample manifest below will be used for producing the contract schedule of rates and used for the price evaluation.

The price schedule shall remain firm and fixed for 2 years, thereafter they shall be subject to change in accordance with price adjustment mechanism for years 3 and 4 using the Services Producer Price Indices (SPPI) as published by the Office for National Statistics.

ID	Proposed date of disposal	Packaging	Contents	Net Weight (Kg)	Volume (m ³)	Dimensions (cm)			Dose rate (µSv/hr)	External Report Ref
						Height	Width / Diameter	Length		
Y2039	18/12/2015	Blue keg	50% steel 50% plastic	16	0.22	110	50		5	P0561_TR_002
B7088	18/12/2015	Blue keg	Plastic	18	0.12	85	50		1	P0561_TR_002
B7133	18/12/2015	Blue keg	soft waste	3.5	0.12	85	45		1	P0561_TR_002
B07093	18/12/2015	Blue keg	Polythene sheeting	10.5	0.12	85	45		1	P0561_TR_002
B6023	18/12/2015	Blue keg	Scintalant vials	0.5	0.12	85	45		1	P0561_TR_002
B/A07128	18/12/2015	Blue keg	sock filters	10.5	0.12	80	50		1	P0561_TR_002
B7134	18/12/2015	Blue keg	soft waste	4	0.22	110	45		1	P0561_TR_002
Y02387/2	18/12/2015	Blue keg	soft waste	3	0.03	51	30		34	P0561_TR_002
B07094	18/12/2015	Blue keg	Pigmat + void filter	4.6	0.03	51	30		1	P0561_TR_002
B07089	18/12/2015	Blue keg	LSC vials	22	0.06	62	40		1	P0561_TR_002
B07091	18/12/2015	Blue Keg	Softwaste	13	0.22	110	50		1	P0561_TR_002
Y02181	18/12/2015	PacTec Bag	Ion Exchange Columns	50.5	0.01485	30	33	150	37	72631/TR/002
B07251	18/12/2015	PacTec Bag	Ion Exchange Columns	25.5	0.01485	30	33	150	9.6	72631/TR/002
Y01671	18/12/2015	PacTec Bag	Ion Exchange Columns	27.5	0.01485	30	33	150	12	72631/TR/002
Y02385	18/12/2015	PacTec Bag	Ion Exchange Columns	26	0.01485	30	33	150	15.6	72631/TR/002
Y02386	18/12/2015	PacTec Bag	Ion Exchange Columns	34.5	0.01485	30	33	150	6.3	72631/TR/002
B06952	18/12/2015	Blue Keg	soft waste	14.5	0.2	95	58		1	
14/0741	18/12/2015	can inside a Plastic Keg	Tace amounts of MEK	11	0.12	80	50		1	RR0300
14/0742	18/12/2015	can inside a Plastic Keg	Tace amounts of MEK	10.5	0.12	80	50		1	RR0300
14/0743	18/12/2015	can inside a Plastic Keg	Tace amounts of MEK	7	0.12	80	50		1	RR0300
14/0744	18/12/2015	can inside a Plastic Keg	Tace amounts of MEK	11	0.12	80	50		1	RR0300
15/0559	18/12/2015	Warboy	Vac oil	28.5	0.05	61	40		0.2	RR4568
15/0560	18/12/2015	Warboy	Vac oil	39.5	0.05	61	40		0.2	RR4568
15/0564	18/12/2015	Warboy	Vac oil	39	0.05	61	40		0.2	RR4568
15/0556	18/12/2015	Warboy	Vac oil	40	0.05	61	40		0.2	RR4568
15/0561	18/12/2015	Warboy	Vac oil	41.5	0.05	61	40		0.2	RR4568
15/0563	18/12/2015	Warboy	Vac oil	34.5	0.05	61	40		0.2	RR4568
15/0557	18/12/2015	Warboy	Vac oil	35	0.05	61	40		0.2	RR4568
15/0558	18/12/2015	Warboy	Vac oil	39	0.05	61	40		0.2	RR4568
15/0565	18/12/2015	Warboy	Vac oil	35	0.05	61	40		0.2	RR4568
15/0579	18/12/2015	Warboy	Vac oil	25.5	0.05	61	40		0.2	RR4696
15/0580	18/12/2015	Warboy	Vac oil	40	0.05	61	40		0.2	RR4696
15/0581	18/12/2015	Warboy	Vac oil	38	0.05	61	40		0.2	RR4696
15/0583	18/12/2015	Warboy	Vac oil	29	0.05	61	40		0.2	RR4696
15/0584	18/12/2015	Warboy	Vac oil	41.5	0.05	61	40		0.2	RR4696
15/0585	18/12/2015	Warboy	Vac oil	41	0.05	61	40		0.2	RR4696
12/0860	18/12/2015	200litre black drum	Tritiated Polythene	59.5	0.20	85	57		1	72631/TR/002 & P05
ISIS/DSU/011	18/12/2015	200litre black drum	soft waste	66.5	0.20	85	57		11	
ISIS/DSU/012	18/12/2015	200litre black drum	soft waste	89	0.20	85	57		20	
ISIS/DSU/013	18/12/2015	200litre black drum	soft waste	71	0.20	85	57		5	
ISIS/DSU/014	18/12/2015	200litre black drum	soft waste	70	0.20	85	57		2	
ISIS/DSU/015	18/12/2015	200litre black drum	soft waste	135	0.20	85	57		20	
ISIS/DSU/016	18/12/2015	200litre black drum	soft waste	81	0.20	85	57		2	
ISIS/DSU/017	18/12/2015	200litre black drum	soft waste	74	0.20	85	57		20	
ISIS/DSU/018	18/12/2015	200litre black drum	soft waste	80.5	0.20	85	57		10	
ISIS/DSU/019	18/12/2015	200litre black drum	soft waste	68.5	0.20	85	57		2	
ISIS/DSU/020	18/12/2015	200litre black drum	soft waste	84	0.20	85	57		0.1	
ISIS/PB/001	18/12/2015	Pactec Bag	Filter	148	0.96	120	80	100	0.2	
ISIS/PB/002	18/12/2015	Pactec Bag	Filter	129	0.96	120	80	100	0.2	
ISIS/PB/003	18/12/2015	Pactec Bag	Filter	84	0.96	120	80	100	0.2	
ISIS/PB/004	18/12/2015	Pactec Bag	Filter	198	0.96	120	80	100	0.2	
3s	18/12/2015	Coffin	Fluorescent lights	31	0.17	30	30	190	0.5	
14/0828	18/12/2015	Blue Keg	Inaactive IXC Resin	45	0.03	52	31		0	
14/0827	18/12/2015	Blue Keg	Inaactive IXC Resin	12	0.03	52	31		0	
15/0287	18/12/2015	Blue Keg	Aqueous samples	8	0.06	62	40		0.2	



PR17007 Appendix B
- Sample manifest for