WASTE STREAM 9D84 Skip Store Skip Coating

SITE	Hinkley Point A
SITE OWNER	Nuclear Decommissioning Authority
WASTE CUSTODIAN	Magnox Limited
WASTE TYPE	ILW
Is the waste subject to Scottish Policy:	No

WASTE VOLUMES

		Reported
Stocks:	At 1.4.2022.....	~2.4 m³
Total future arisings:		0 m³
Total waste volume:		2.4 m³
Comment on volumes:	Volume is the raw waste volume.	
Uncertainty factors on volumes:	Stock (upper): x 1.1	Arisings (upper) x
	Stock (lower): x 0.9	Arisings (lower) x

WASTE SOURCE Surface coating removed during the decontamination of skip store skips. 30 and 60 litre mausers overpacked into 200 litre drums.

PHYSICAL CHARACTERISTICS

General description:	The coating consists of paint and fixative with inclusions of rust/metal particles. Waste also consists of two metal items (flange and pipework) - 8kg
Physical components (%vol):	Paint/Fixative (~99.4%). Organic others (rust), other ferrous metals 0.6%).
Sealed sources:	The waste does not contain sealed sources.
Bulk density (t/m³):	0.565
Comment on density:	An estimate of density has been made based on the mass/volume of coating removed during initial skip washing trials. Adjusted to align to weight on CC form HPA 224

CHEMICAL COMPOSITION

General description and components (%wt):	Polyvinyl acetate copolymer paint. Fixative layer will contain Di-iso-octyl phthalate plasticizers. Organic Others (~99.4% wt), sulphate (~0.43% wt), nitrate (~0.25% wt) , chloride (~0.09% wt) and other ferrous metals (0.6%).
Chemical state:	Neutral
Chemical form of radionuclides:	H-3: The tritium isotope content is insignificant. C-14: The carbon isotope content is insignificant. Se-79: The selenium content is insignificant. Tc-99: The technetium isotope content is insignificant. Ra: The radium isotope content is insignificant. Th: The thorium isotope content is insignificant. U: The chemical form of uranium isotopes is not determined Np: The neptunium isotope content is insignificant. Pu: The chemical form of plutonium isotopes is not determined
Metals and alloys (%wt):	-

	(%wt)	Type(s) / Grade(s) with proportions	% of total C14 activity
Stainless steel.....	0		
Other ferrous metals.....	~0.60	2 x metal items (Flange and pipework) - mild steel	
Iron.....			
Aluminium.....	0		
Beryllium.....			
Cobalt.....			
Copper.....	0		

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Lead	0
Magnox/Magnesium	0
Nickel	
Titanium	
Uranium	
Zinc	0
Zircaloy/Zirconium	0
Other metals	

Organics (%wt): -

	(%wt)	Type(s) and comment	% of total C14 activity
Total cellulosics	0		
Paper, cotton	0		
Wood	0		
Halogenated plastics	0		
Total non-halogenated plastics	0		
Condensation polymers	0		
Others	0		
Organic ion exchange materials	0		
Total rubber	0		
Halogenated rubber	0		
Non-halogenated rubber	0		
Hydrocarbons			
Oil or grease			
Fuel			
Asphalt/Tarmac (cont.coal tar)			
Asphalt/Tarmac (no coal tar)			
Bitumen			
Others			
Other organics	~99.4	Polyvinyl acetate copolymer paint. Fixative layer will contain Di-iso-octyl phthalate plasticizers.	

Other materials (%wt): -

	(%wt)	Type(s) and comment	% of total C14 activity
Inorganic ion exchange materials	0		
Inorganic sludges and flocs	0		
Soil	0		
Brick/Stone/Rubble	0		
Cementitious material	0		
Sand			
Glass/Ceramics	0		
Graphite	0		
Desiccants/Catalysts			

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Asbestos	0
Non/low friable	
Moderately friable	
Highly friable	
Free aqueous liquids	NE
Free non-aqueous liquids	0
Powder/Ash	0

Inorganic anions (%wt): -

	(%wt)	Type(s) and comment
Fluoride	0	
Chloride	~0.09	
Iodide	0	
Cyanide	0	
Carbonate	0	
Nitrate	~0.25	
Nitrite	0	
Phosphate	0	
Sulphate	~0.43	
Sulphide	0	

Materials of interest for waste acceptance criteria: No materials likely to pose a fire or other non-radiological hazard have been identified.

	(%wt)	Type(s) and comment
Combustible metals	0	
Low flash point liquids	0	
Explosive materials	0	
Phosphorus	0	
Hydrides	0	
Biological etc. materials	0	
Biodegradable materials	0	
Putrescible wastes	0	
Non-putrescible wastes		
Corrosive materials	0	
Pyrophoric materials	0	
Generating toxic gases	0	
Reacting with water	0	
Higher activity particles		
Soluble solids as bulk chemical compounds		

Hazardous substances / non hazardous pollutants: Lead and chromium compounds present.

	(%wt)	Type(s) and comment
Acrylamide		

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Benzene.....		
Chlorinated solvents.....		
Formaldehyde.....		
Organometallics.....		
Phenol.....		
Styrene.....		
Tri-butyl phosphate.....		
Other organophosphates.....		
Vinyl chloride.....		
Arsenic.....		
Barium.....		
Boron.....	0	
Boron (in Boral).....		
Boron (non-Boral).....		
Cadmium.....		
Caesium.....		
Selenium.....		
Chromium.....	NE	
Molybdenum.....		
Thallium.....		
Tin.....		
Vanadium.....		
Mercury compounds.....		
Others.....	NE	Lead compunds present
Electronic Electrical Equipment (EEE)		
EEE Type 1.....		
EEE Type 2.....		
EEE Type 3.....		
EEE Type 4.....		
EEE Type 5.....		

Complexing agents (%wt): No

	(%wt)	Type(s) and comment
EDTA.....		
DPTA.....		
NTA.....		
Polycarboxylic acids…….		
Other organic complexants.....		
Total complexing agents.....	0	

Potential for the waste to contain discrete items: No. In & of itself not a DI; Waste also consists of two metal items (flange and pipework) that could be.

PACKAGING AND CONDITIONING

Conditioning method: Gravel and particulate conditioning plant (PCF or tumble mix TBC)

Plant Name: -

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Location: -

Plant startup date: -

Total capacity (m^3/y incoming waste): -

Target start date for packaging this stream: -

Throughput for this stream (m^3/y incoming waste): -

Other information: -

Likely container type:

Container	Waste packaged (%vol)	Waste loading (m^3)	Payload (m^3)	Number of packages
6m^3 concrete box (SD)	100.0	2.444	5.8	< 1

Likely container type comment: -

Range in container waste volume: -

Other information on containers: -

Likely conditioning matrix:

Other information: -

Conditioned density (t/m^3): -

Conditioned density comment: -

Other information on conditioning: -

Opportunities for alternative disposal routing: -

Baseline Management Route	Opportunity Management Route	Stream volume (%)	Estimated Date that Opportunity will be realised	Opportunity Confidence	Comment
-	-	-	-	-	-

RADIOACTIVITY

Source: Coating removed from skip store skips.

Uncertainty: Specific activity is a function of Station operating history

Definition of total alpha and total beta/gamma: Where totals are shown on the table of radionuclide activities they are the sums of the listed alpha or beta/gamma emitting radionuclides plus 'other alpha' or 'other beta/gamma'.

Measurement of radioactivities: The values quoted were derived by sampling and analysis.

Other information: -

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Nuclide	Mean radioactivity, TBq/m³ Waste at 1.4.2022	Bands and Code	Future arisings	Bands and Code	Nuclide	Mean radioactivity, TBq/m³ Waste at 1.4.2022	Bands and Code	Future arisings	Bands and Code
H 3		8			Gd 153		8		
Be 10		8			Ho 163		8		
C 14		8			Ho 166m		8		
Na 22		8			Tm 170		8		
Al 26		8			Tm 171		8		
Cl 36		8			Lu 174		8		
Ar 39		8			Lu 176		8		
Ar 42		8			Hf 178n		8		
K 40		8			Hf 182		8		
Ca 41		8			Pt 193		8		
Mn 53		8			Tl 204		8		
Mn 54		8			Pb 205		8		
Fe 55		8			Pb 210		8		
Co 60	<5.62E-06	C 3			Bi 208		8		
Ni 59		8			Bi 210m		8		
Ni 63		8			Po 210		8		
Zn 65		8			Ra 223		8		
Se 79		8			Ra 225		8		
Kr 81		8			Ra 226		8		
Kr 85		8			Ra 228		8		
Rb 87		8			Ac 227		8		
Sr 90	2.52E-01	C C 2			Th 227		8		
Zr 93		8			Th 228		8		
Nb 91		8			Th 229		8		
Nb 92		8			Th 230		8		
Nb 93m		8			Th 232		8		
Nb 94		8			Th 234	1.61E-05	8		
Mo 93		8			Pa 231		8		
Tc 97		8			Pa 233	1.70E-09	8		
Tc 99		8			U 232		8		
Ru 106		8			U 233		8		
Pd 107		8			U 234	1.27E-05	C C 2		
Ag 108m		8			U 235	4.83E-07	C C 2		
Ag 110m		8			U 236	1.57E-06	C C 2		
Cd 109		8			U 238	1.61E-05	C C 2		
Cd 113m		8			Np 237	1.77E-09	8		
Sn 119m		8			Pu 236		8		
Sn 121m		8			Pu 238	2.5E-04	C C 2		
Sn 123		8			Pu 239	7.17E-04	C C 2		
Sn 126		8			Pu 240	2.56E-04	C C 2		
Sb 125		8			Pu 241	9.09E-04	C C 2		
Sb 126		8			Pu 242		8		
Te 125m		8			Am 241	1.82E-03	C C 2		
Te 127m		8			Am 242m		8		
I 129		8			Am 243		8		
Cs 134		8			Cm 242		8		
Cs 135		8			Cm 243	5.53E-07	C C 2		
Cs 137	1.35E-01	C C 2			Cm 244	2.25E-05	C C 2		
Ba 133		8			Cm 245		8		
La 137		8			Cm 246		8		
La 138		8			Cm 248		8		
Ce 144		8			Cf 249		8		
Pm 145		8			Cf 250		8		
Pm 147		8			Cf 251		8		
Sm 147		8			Cf 252		8		
Sm 151		8			Other a				
Eu 152		8			Other b/g				
Eu 154	8.32E-05	C C 2			**Total a**	**3.09E-03**		**0**	
Eu 155		8			**Total b/g**	**3.89E-01**		**0**	

Bands (Upper and Lower)

A a factor of 1.5
B a factor of 3
C a factor of 10
D a factor of 100
E a factor of 1000

Note: Bands quantify uncertainty in mean radioactivity.

Code

1 Measured activity
2 Derived activity (best estimate)
3 Derived activity (upper limit)
4 Not present
5 Present but not significant
6 Likely to be present but not assessed
7 Present in significant quantities but not determined
8 Not expected to be present in significant quantity