SD SPUR Nuclear Decommissioning and the Waste Hierarchy Conference Birmingham

Alternative Routes for off Site Disposal

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Alternatively I could have called the talk:

"In Support of Disposal Routes Outside the Fence"

Or

"Alternative Lower Cost Disposal Options for LLW and VLLW"

It has taken several years to open up alternative disposal routes.

There are now alternative routes coming available in 2011.

Introducing SITA UK

- SITA UK is a national recycling and resource management company
- SITA UK serves over 12 million people and handles more than nine million tonnes of domestic, commercial and industrial waste through a network of recycling, composting, energy-from-waste and landfill facilities
- SITA UK employs over 5,500 staff and has an annual turnover in excess of £800 million

Introducing Suez Environnement

- SUEZ ENVIRONNEMENT a world leader dedicated to water and waste management.
- supplies drinking water to 90 million people, provides wastewater treatment services for 58 million people and collects the waste produced by 46 million people.
- has 65,900 employees and, on a global scale, is the world's leader exclusively dedicated to environmental services.
- SUEZ ENVIRONNEMENT, a 35.4% GDF SUEZ affiliate, reported sales turnover of 12.3 billion euros at the end of financial year 2009.

A Much Needed Change of Strategy

- UK Government National Solid LLW Policy – March 2007
- NDA Nuclear Industry LLW Strategy – ministerial Approval 2010
- Non Nuclear Industry Strategy in development 2010/11
- Potential nuclear new build progamme commencing
- Underlying principle to preserve the limited LLW disposal capacity at LLWR near Drigg

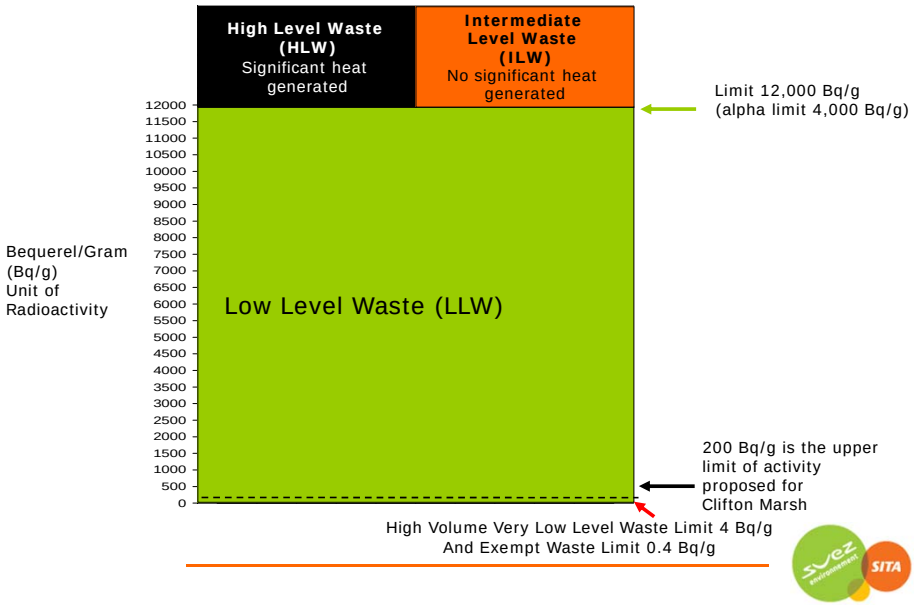
2007 Policy Definitions

- **Low Level Waste** (LLW) is termed as solid radioactive waste that contains up to 4,000 Bq/g alpha bearing nuclides and 12,000 Bq/g beta/gamma bearing nuclides.
- **Very Low Level Waste** (VLLW) is a sub-category of LLW that comprises:

1. Low Volume VLLW ('dustbin loads') - is generated principally by so called "small users" and are wastes that can be safely disposed of to an unspecified destination with municipal, commercial or industrial waste, each 0.1 cubic metre of material containing less than 400,000Bq of total activity, or single items containing less than 40,000Bq of total activity.

2. High Volume VLLW (bulk disposals) – Most of this waste is produced by decommissioning nuclear licensed sites and are typically soils & rubble wastes with maximum concentrations of 4Bq/g of total activity that can be disposed of to specified landfill sites.

Waste Classifications

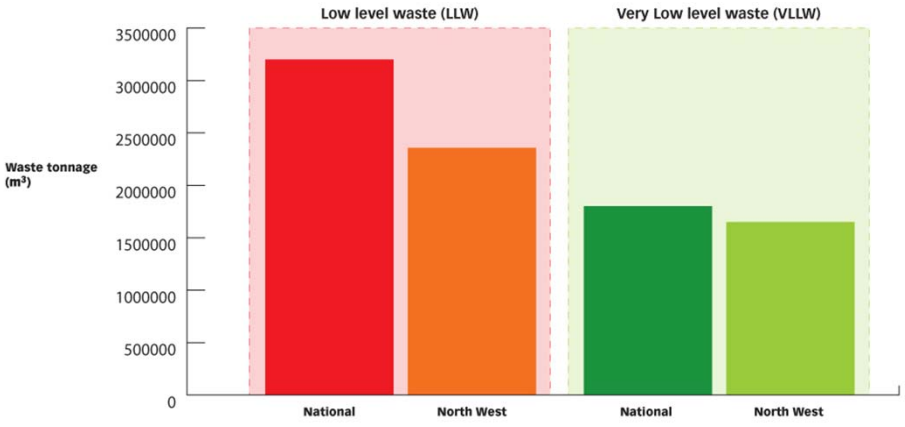


High Volume Low Activity Waste






The National Picture (2007)



Offsite Disposals – Clifton Marsh

- Developed by Lancs.CC and North West Water (UU) in 1982/3
- First operated by LCC in 1986 and operated by LWS (LAWDC) from 1993 – 2000
- SITA owned and operated since 2000
- RSA wastes disposed of continuously since 1974
- RSA Authorisation held by waste producers at Capenhurst and Springfields Fuels Ltd
- Planning Permission to 2015 and capacity to last to about 2025
- Diverse facility with hazardous waste collection and disposal, asbestos disposal and RSA disposal

Clifton Marsh RSA Disposals

Alternative Routes in Development

- SITA business decision made some time ago to develop new facilities to offer alternative disposal routes.
- Sita has 4 key ongoing developments for Radioactive Waste disposal.

1. Clifton Marsh – RSA Application and Article 37 submission made to EU for lower activity LLW and VLLW for controlled burial to landfill.

   Art 37 approved and RSA Auth. anticipated April 2011.

   We will be able to expand the range of customers and radionuclides permitted for disposal.

Alternative Routes in Development

2. Stoneyhill Landfill Peterhead – to obtain RSA Authorisation for Oil and Gas Industry NORM disposal to landfill for oilfield decommissioning.

   Planning Permission obtained 2007 and RSA Authorisation anticipated April 2011

3. Stoneyhill NORM Treatment Plant – a JV with Nuvia Limited to construct and operate a purpose built NORM decontamination plant

   Planning Permission gained November 2010

   RSA Authorisation around July 2011.

   Construction commenced March 2011

New Developments

4. Keeklehead – Cumbria – A major Planning application submitted to Cumbria CC in December 2009 for permission to develop a purpose built LLW disposal facility.

   Experiencing planning difficulties much as anticipated and likely to be refused

   Sita will then decide on whether to appeal.

Other Off Site Disposal Developments

- Kingscliffe Hazardous Waste Disposals – Augean
  Planning Enquiry Dec 2010
  RSA /Article 37 Application with EA/EU
  Concentration limit proposed 200 Bq/g.

- Lillyhall Landfill Distington Cumbria – WRG
  Deemed permission for VLLW disposal
  RSA/Article 37 submitted.

Article 37

- UK regulation of radioactive substances is underpinned by the Euratom Treaty (Rome) 1957
- Under Article 37 –

  If a member state alters the way it plans to dispose of radioactive waste, or has a new facility that may increase emissions it must make a submission to the Commission, known as an Article 37 submission
- To determine whether such plans are liable to result in radioactive contamination of the water, soil or airspace of another member state

Article 37

For Clifton Marsh RSA and Stoneyhill (NORM) An Article 37 submission was duly prepared by Nuvia and Sita to address the potential impacts on neighbouring states.

- Generally accepted by EA and SEPA that this was perhaps unnecessary but DECC maintained the requirement.
- Drafts scrutinised by EA and SEPA, then by Central and Scottish Government with 3 independent experts (Article 31)
- Clifton Marsh has Article 37 acceptance from EC

Clifton Marsh RSA Permit Limits

- RSA permitted radionuclide suite includes Nuclear and NORM nuclides
- Average Activity limit of up to 200 Bq/g will allow about 50 - 60% on National Inventory (2007)
- Annual activity limits to be applied
- Planning Permission for unlimited radioactive waste disposals from North West Planning Region
- Planning limit of 4000 tonnes per year from elsewhere in the UK
- Volumetric capacity is not a constraint. The site has a void of over 2 Million cubic metres

Environmental Limits

- Environmental Safety Case prepared for Clifton Marsh
- Defines safe levels of disposal assuming worst case without containment systems being in place
- Environmental Permit and PPC.s define non radiological conditions to be NON HAZARDOUS.
- Site's permits and contractual WAC will exclude any hazardous wastes ie H1 – H14.

Clifton Packaging Requirements

- Subject to EA approvals and RSA Authorisations, SITA will be able to accept a broad range of packages
- Packages will be required to meet relevant Dangerous Goods by Road Regulations
- Sealed Drums
- Sealed transport bags ie lift bags
- Loaded and sealed ISO freights
- Full height/half height/ third height ISO.s and reusable ISO.s
- Loose tipping if “RSA exempt”.

Agency RSA Limits from Permit

Table 3.1 Specified disposal by on–site burial

Specified Waste type	Radionuclide or group of nuclides	Activity limits		Volumetric Limits
		Annual limit GBq/year	Specific activity limit Bq/gram	
Solid Low Level Waste	Radionuclides of Uranium (U^{232}, U^{233}, U^{234}, U^{235}, U^{236}, U^{238}), taken together	500	N/A	-
	Radionuclides of Thorium (Th^{228}, Th^{229}, Th^{230}, Th^{232}, Th^{234}), Tin-126 and Niobium-94, taken together	100	N/A	-
	Radionuclides of Caesium (Cs^{134}, Cs^{137}), Europium (Eu^{152}, Eu^{154}, Eu^{155}), Ruthenium (Ru^{103}, Ru^{106}), Actinium-227, Silver-110m, Barium-133, Carbon-14, Chlorine-36, Cobalt-60, Iodine-129, Niobium-95, Antimony-125, Strontium-90, Technetium-99, Zinc-65 and Zirconium-95, taken together	10	N/A	-
	Radium-226, Radium-228, Lead-210 and Polonium-210, taken together	6	N/A	-
	Cerium-144, Iron-55, Manganese-54, Nickel-63, Promethium-147 and Plutonium-241, taken together	2,000	N/A	-
	Radionuclides of Americium (Am^{241}, Am^{243}), Curium (Cm^{242}, Cm^{243}, Cm^{244}), Alpha-emitting Plutonium radionuclides (Pu^{238}, Pu^{239}, Pu^{240}, Pu^{242}), Silver-108m, Neptunium-237 and Protactinium-231, taken together	50	N/A	-
	Tritium	10,000	N/A	-
Solid Low Level Waste	Strontium-90, in any volume of waste	-	100	-
	All radionuclides, taken together, in any volume of waste	-	1,000	-
	All radionuclides, taken together, averaged over every successive 10 tonnes of waste disposed of at the premises	-	200	-

Conclusions

- Alternative disposal routes will be available for exempt and lower activity RSA wastes
- Alternative offsite disposal will be available from Spring 2011
- These are major disposal facilities run by three of the UK.s biggest waste operators in their field
- Risk Assessments and Article 37 undertaken
- A lower cost alternative for disposal
- High volume disposal capability for decommissioning
- Grouting not be a requirement

Contacts

Thank you for listening

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