UK EPR Project Front Office

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Mr Jonathan Evans
Low Level Waste Service Manager
LLW Repository Ltd
Allerdale Court
Greengarth
Holmrook
Cumbria
CA19 1UL

23rd October 2008

Unique No: LLWR EPR0001.
Your Ref: -.

Dear Jonathan,

UK EPR LLWR Disposability Assessment – Preliminary D1 Form Information

Further to our meeting on 8th July, I am pleased to enclose completed D1 datasheets on the UK EPR operational low level wastes and request that LLW Repository Ltd. initiate a disposability assessment based on the information provided.

We look forward to discussing your initial thoughts and feedback. We would be pleased to arrange a meeting on 10th November 2008 to take this forward. In the meantime please do not hesitate to get in touch if you have any queries.

Yours sincerely

Stephen Walls

pp Catherine Back
UK EPR GDA EDF Project Manager
A Joint Project of AREVA and EDF

and Christopher Wooldridge
UK EPR GDA AREVA Project Manager
A Joint Project of AREVA and EDF

AREVA NP
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Headquarters: Tour AREVA - 92084 Paris La Défense cedex – France
Phone: +33 (0)1 34 96 60 00 - Fax: +33 (0)1 34 96 81 87
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EDF SA
CNEN 165-173, avenue Pierre Brossolette B.P. 900-92542 Montrouge Cedex France
Phone: +33 (0)1 41 48 90 00 - Fax: +33 (0)1 41 48 92 84

cc: Martin Walkinshaw (LLWR), Catherine Back, Christopher Wooldridge, Philippe Chaumin, Bernard Vidal, Keith Ardron, Gary Craig, Sarah Greenwood

LLW Repository Ltd

Form D1: Request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

Introduction

This form is to be completed by customers seeking to dispose of radioactive waste to the Low Level Waste Repository to request agreement in principle prior to disposal of waste. The information required relates to the owner, usually a company, having title to the waste for disposal, except where stated. Please answer each question as fully as possible. If there are insufficient lines in any of the tables, please enter details on a separate sheet and indicate on the appropriate table that you have done so. (*denotes select from drop down menu).

If you need any assistance or have any questions regarding completion of this form, please contact the Low Level Waste Customer Team, by telephone: (01946) 722252 or by e-mail: customerteam@llwrsite.com

Please return the completed and signed form by post to: Low Level Waste Customer Team, Low Level Waste Repository Limited, Allerdale Court, Greengarth, Holmrook, Cumbria, CA19 1UL, by fax to: (01946) 722260 or by e-mail to: customerteam@llwrsite.com

Customer Details

1. Name of Waste Owner:

Operator specific data. Not available at this time.

2. Address of Company Office:

Operator specific data. Not available at this time.

3. Address of premises where the waste was / is to be generated:

Site specific data. Information not available at this time.

4. Address of premises where the waste is accumulated and from which it will be disposed:

Site specific data. Information not available at this time.

5. Job title of Head of premises named in (4):

Site specific data. Information not available at this time.

6. Name, job title, company address, telephone number and e-mail address of the day-to-day contact for this waste:

Bertrand LANTES, specialist in waste management
EDF / DPN / UTO
6, avenue Montaigne
93192 Noisy le Grand, cedex
FRANCE

7. Will the person named in (6) be considered competent and able to secure compliance with the limitations and conditions to be specified in the relevant Radioactive Substances Act Authorisation and by LLW Repository Ltd in their Conditions for Acceptance? Yes *

Customer Details (continued)

8. If the answer at (7) is "No", please provide the name, job title, company name, company address, telephone number, and e-mail address of the person who will be considered competent:

9. If persons other than the owner of the waste will handle the waste and be responsible for the disposal please provide their name, job title, company name, company address, telephone number and e-mail address:

Nature of the Waste

10. Describe the nature of the process giving rise to the radioactive waste and the type of radioactive waste generated. State the physical and chemical form of the radioactive waste and the nature of the radioactive contaminant.

Origin of the Radioactive Waste: Ion exchange resins will be used to purify the water in the water auxiliary circuits of the UK EPR. The water auxiliary circuits consist of: The Chemical and Volumetric Control System (CVCS), The Boron Recycle System (BRS), Liquid Waste Treatment System (LWTS), and Spent Fuel Pit Treatment System (FPTS). During operation the ion exchange resins will become contaminated with radionuclides.
Physical Nature of the Raw Waste: Made of balls or grains (diameter ranges 0.3 - 1.2mm) of organic resins with polystyrenic, phenolic, acrylic or formophenolic skeleton (cationic resins strongly acid, anionic resins strongly basic and mixed bed). Raw waste density = 1 g/cc. Suppliers: PUROLITE, DOWEX, ROHM&HAAS
Radioactive Contaminants: Activation products and fission products arising from the activation of primary circuit corrosion products in the reactor core. These consist of predominantly beta and beta/gamma emitters. (3H, 60Co, 58Co, 54Mn, 110mAg, 134Cs, 137Cs, 10Be, 14C, 22Na, 36Cl, 41Ca, 55Fe, 59Ni, 63Ni, 79Se, 90Sr, 93Mo, 93Zr, 94Nb, 99Tc, 107Pd, 108mAg, 121mSn, 126Sn, 129I, 135Cs, 151Sm). Alpha emitters are only expected to be present in trace amounts.
Toxic Chemicals: B: 9,000 ppm Pb: 22 ppm Cr tot: 18 ppm Ni: 4 ppm Hg < 0.5 ppm
very low level of complexing agents (carboxylic acids used in decontamination processes)
no reactive metallic reagents (zinc, magnesium, aluminium, uranium) will be present
Treatment: The ion exchange beads will be encapsulated in a polymer matrix (epoxy resin 60 % + amines' hardener 40 %) directly in a metallic drum. There will be no free water (blocked in the matrix). The waste will be consigned as uncompactable 200 L metallic drums transported in ISO containers for the grouting and disposal service. Mass of a drum : 223 kg (drum: 17 kg, IER: 120 kg, polymer matrix: 86 kg).

11. Are you willing to provide the necessary Quality Assurance documentation, including a relevant wastestream characterisation, for the waste to be consigned and for your operations involving the generation and subsequent handling of waste for disposal to be audited by LLW Repository Ltd as required by the Conditions for Acceptance? Yes *

12. Do you confirm that the waste will comply in all respects with the Conditions for Acceptance, including that it excludes wastes which with reasonable practicable means could be disposed of to a domestic landfill or as special precautions disposal? Yes *

13. Will Hazardous Wastes, as defined in the Hazardous Waste Regulations, be included within any consignment? Yes *

14. For wastestreams containing uranium, plutonium or thorium, has this arisen from a process or from material which is subject to EURATOM safeguards? Yes *

If "Yes", please confirm that either the amounts of these elements are below reportable levels, or that they will be reported as a Measured Discard. Below Reportable *

Waste Consignment Details

15. For each year in which it is intended to consign waste for disposal, set out below the details of the waste, giving as accurate an estimate as possible of the weight, volume and radioactive content expressed in megabecquerels.

Calendar Year		Normal Vol & Act	Max Vol & Act			Future Years
Weight (kg)	Raw waste, every 4 years	1.2E+04	2.4E+04			
Volume (m^3)	Raw waste, every 4 years	1.2E+01	2.4E+01			
Uranium (MBq)		No	No			
Radium-226 (MBq)		No	No			
Thorium-232 (MBq)		No	No			
Other alpha emitters (MBq)[1]		1.54	3.08			
Carbon-14 (MBq)		6.29E+02	1.26E+03			
Iodine-129 (MBq)		2.46E-02	4.92E-02			
Tritium (MBq)		1.09E+03	2.17E+03			
Cobalt-60 (MBq)		3.5E+04	2.15E+05			
Other radionuclides (MBq)[2]	58Co excepted	1.07E+05	2.88E+05			

Notes:

1. "Other alpha emitters" means alpha-emitting radionuclides with half-lives greater than three months excluding uranium, radium-226 and thorium-232

2. "Other radionuclides" means iron-55 and beta-emitting radionuclides with half-lives greater than three months[3] unless individually specified in this Table (i.e. excluding Carbon-14, Iodine-129, Cobalt-60 and Tritium)

3. The activity of decay products with half lives of three months or less should be included only if they are present in amounts exceeding those which could be present through radioactive decay of the accounted radionuclides. Decay products are defined as those radionuclides succeeding another radionuclide in the radioactive series in which both, or all, occur.

Customer Declaration

I declare that the information provided is true and complete to the best of my knowledge.

Name: (Please Print) Company:

Signature: Date:

FOR LLW REPOSITORY LTD USE ONLY

Received on: *Form D1 Reference Number:*

Response required by: *Status:*

LLW Repository Ltd

Form D1: Response to request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

FOR LLW REPOSITORY LTD USE ONLY

To:

Address:

Further to your recent request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository, I can confim on behalf of LLW Repository Ltd that:

1. LLW Repository Ltd **agrees** in principle to accept the waste as described in your request.

   Note: Any agreement is subject to a valid Certificate of Authorisation for disposal being issued to you from the Environment Agency and sufficient volumetric and radiological capacity being available under the Certificate of Authorisation for disposal at the Low Level Waste Repository. Allocation of volumetric and radiological capacity and disposal of the waste will be subject to your acceptance of a disposal contract with LLW Repository Ltd.

2. LLW Repository Ltd **does not agree** in principle to accept the waste as described in your request for the following reasons:

If you would like any further clarification on this decision or require any additional information, please contact the Low Level Waste Service Manager, through the Low Level Waste Customer Team, by telephone: (01946) 724834 or by e-mail: customerteam@llwrsite.com.

Authorisation by LLW Repository Ltd

Name: (Please Print) Position:

Signature: Date:

LLW Repository Ltd

Form D1: Request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

Introduction

This form is to be completed by customers seeking to dispose of radioactive waste to the Low Level Waste Repository to request agreement in principle prior to disposal of waste. The information required relates to the owner, usually a company, having title to the waste for disposal, except where stated. Please answer each question as fully as possible. If there are insufficient lines in any of the tables, please enter details on a separate sheet and indicate on the appropriate table that you have done so. (*denotes select from drop down menu).

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Please return the completed and signed form by post to: Low Level Waste Customer Team, Low Level Waste Repository Limited, Allerdale Court, Greengarth, Holmrook, Cumbria, CA19 1UL, by fax to: (01946) 722260 or by e-mail to: customerteam@llwrsite.com

Customer Details

1. Name of Waste Owner:

Operator specific data. Not available at this time.

2. Address of Company Office:

Operator specific data. Not available at this time.

3. Address of premises where the waste was / is to be generated:

Site specific data. Information not available at this time.

4. Address of premises where the waste is accumulated and from which it will be disposed:

Site specific data. Information not available at this time.

5. Job title of Head of premises named in (4):

Site specific data. Information not available at this time.

6. Name, job title, company address, telephone number and e-mail address of the day-to-day contact for this waste:

Bertrand LANTES, specialist in waste management
EDF / DPN / UTO
6, avenue Montaigne
93192 Noisy le Grand, cedex
FRANCE

7. Will the person named in (6) be considered competent and able to secure compliance with the limitations and conditions to be specified in the relevant Radioactive Substances Act Authorisation and by LLW Repository Ltd in their Conditions for Acceptance? Yes *

Customer Details (continued)

8. If the answer at (7) is "No", please provide the name, job title, company name, company address, telephone number, and e-mail address of the person who will be considered competent:

9. If persons other than the owner of the waste will handle the waste and be responsible for the disposal please provide their name, job title, company name, company address, telephone number and e-mail address:

Nature of the Waste

10. Describe the nature of the process giving rise to the radioactive waste and the type of radioactive waste generated. State the physical and chemical form of the radioactive waste and the nature of the radioactive contaminant.

Origin of the waste: Ion exchange resins will be used to purify the water recycled through the Steam Generator Blowdown System. Very low active Ion exchangers resins will be produced as a result.
Physical nature of raw waste: Made of balls or grains (diameter ranges 0.3 - 1.2mm) of organic resins with polystyrenic, phenolic, acrylic or formophenolic skeleton (cationic resins strongly acid, anionic resins strongly basic and mixed bed). Suppliers: PUROLITE, DOWEX, ROHM&HAAS. Density of raw waste = 1g/cc.
Radioactive contaminants: Activation products and fission products, beta and beta/gamma emitters (60Co,134Cs, 137Cs, 10Be, 14C, 36Cl, 41Ca, 55Fe, 59Ni, 63Ni, 79Se, 90Sr, 93Mo, 93Zr, 94Nb, 99Tc, 107Pd, 108mAg, 121mSn, 126Sn, 129I, 135Cs, 151Sm).
Chemical (raw waste) : ammonium (390 to 19,600 ppm), morpholinium (0 to 20,300 ppm), hydrazinium (0 to 5,870 ppm), Fe, Co, Ni, Cr, Na, Zn, Cu, Ca, Cl, SO4, SiO2.
Chemical toxics (raw waste): Pb: 22 ppm Cr tot: 18 ppm Ni: 4 ppm Hg < 0.5 ppm. There will be no complexing agents, and no metallic reagents (zinc, magnesium, aluminium, uranium).
Treatment: filling directly into drums (no treatment). The waste will be dewatered. The waste will be consigned as uncompactable 200 L metallic drums introduced in ISO disposal containers for grouting and disposal service. Mass of loaded drum 217 kg (drum: 17 kg, IER: 170 kg, absorbent: 30 kg).

11. Are you willing to provide the necessary Quality Assurance documentation, including a relevant wastestream characterisation, for the waste to be consigned and for your operations involving the generation and subsequent handling of waste for disposal to be audited by LLW Repository Ltd as required by the Conditions for Acceptance? Yes *

12. Do you confirm that the waste will comply in all respects with the Conditions for Acceptance, including that it excludes wastes which with reasonable practicable means could be disposed of to a domestic landfill or as special precautions disposal? Yes *

13. Will Hazardous Wastes, as defined in the Hazardous Waste Regulations, be included within any consignment? Yes *

14. For wastestreams containing uranium, plutonium or thorium, has this arisen from a process or from material which is subject to EURATOM safeguards? Yes *

    If "Yes", please confirm that either the amounts of these elements are below reportable levels, or that they will be reported as a Measured Discard. Below Reportable *

Waste Consignment Details

15. For each year in which it is intended to consign waste for disposal, set out below the details of the waste, giving as accurate an estimate as possible of the weight, volume and radioactive content expressed in megabecquerels.

Calendar Year		Normal Vol & Act	Max Vol & Act			Future Years
Weight (kg)	Per year	7.5E+03	15E+03			
Volume (m^3)	Per year	7.5E+00	15E+00			
Uranium (MBq)		No	No			
Radium-226 (MBq)		No	No			
Thorium-232 (MBq)		No	No			
Other alpha emitters (MBq)[1]						
Carbon-14 (MBq)		4.36E-01	7.29E+00			
Iodine-129 (MBq)		2.58E-04	4.32E-03			
Tritium (MBq)						
Cobalt-60 (MBq)		2.42E+01	4.05E+02			
Other radionuclides (MBq)[2]		4.18E+02	6.98E+03			

Notes:

1. "Other alpha emitters" means alpha-emitting radionuclides with half-lives greater than three months excluding uranium, radium-226 and thorium-232

2. "Other radionuclides" means iron-55 and beta-emitting radionuclides with half-lives greater than three months[3] unless individually specified in this Table (i.e. excluding Carbon-14, Iodine-129, Cobalt-60 and Tritium)

3. The activity of decay products with half lives of three months or less should be included only if they are present in amounts exceeding those which could be present through radioactive decay of the accounted radionuclides. Decay products are defined as those radionuclides succeeding another radionuclide in the radioactive series in which both, or all, occur.

Customer Declaration

I declare that the information provided is true and complete to the best of my knowledge.

Name: (Please Print) Company:

Signature: Date:

FOR LLW REPOSITORY LTD USE ONLY

Received on: *Form D1 Reference Number:*

Response required by: *Status:*

LLW Repository Ltd

Form D1: Response to request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

FOR LLW REPOSITORY LTD USE ONLY

To:

Address:

Further to your recent request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository, I can confim on behalf of LLW Repository Ltd that:

1. LLW Repository Ltd **agrees** in principle to accept the waste as described in your request.

   Note: Any agreement is subject to a valid Certificate of Authorisation for disposal being issued to you from the Environment Agency and sufficient volumetric and radiological capacity being available under the Certificate of Authorisation for disposal at the Low Level Waste Repository. Allocation of volumetric and radiological capacity and disposal of the waste will be subject to your acceptance of a disposal contract with LLW Repository Ltd.

2. LLW Repository Ltd **does not agree** in principle to accept the waste as described in your request for the following reasons:

If you would like any further clarification on this decision or require any additional information, please contact the Low Level Waste Service Manager, through the Low Level Waste Customer Team, by telephone: (01946) 724834 or by e-mail: customerteam@llwrsite.com.

Authorisation by LLW Repository Ltd

Name: (Please Print) Position:

Signature: Date:

LLW Repository Ltd

Form D1: Request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

Introduction

This form is to be completed by customers seeking to dispose of radioactive waste to the Low Level Waste Repository to request agreement in principle prior to disposal of waste. The information required relates to the owner, usually a company, having title to the waste for disposal, except where stated. Please answer each question as fully as possible. If there are insufficient lines in any of the tables, please enter details on a separate sheet and indicate on the appropriate table that you have done so. (*denotes select from drop down menu).

If you need any assistance or have any questions regarding completion of this form, please contact the Low Level Waste Customer Team, by telephone: (01946) 722252 or by e-mail: customerteam@llwrsite.com

Please return the completed and signed form by post to: Low Level Waste Customer Team, Low Level Waste Repository Limited, Allerdale Court, Greengarth, Holmrook, Cumbria, CA19 1UL, by fax to: (01946) 722260 or by e-mail to: customerteam@llwrsite.com

Customer Details

1. Name of Waste Owner:

Operator specific data. Not available at this time.

2. Address of Company Office:

Operator specific data. Not available at this time.

3. Address of premises where the waste was / is to be generated:

Site specific data. Information not available at this time.

4. Address of premises where the waste is accumulated and from which it will be disposed:

Site specific data. Information not available at this time.

5. Job title of Head of premises named in (4):

Site specific data. Information not available at this time.

6. Name, job title, company address, telephone number and e-mail address of the day-to-day contact for this waste:

Bertrand LANTES, specialist in waste management
EDF / DPN / UTO
6, avenue Montaigne
93192 Noisy le Grand, cedex
FRANCE

7. Will the person named in (6) be considered competent and able to secure compliance with the limitations and conditions to be specified in the relevant Radioactive Substances Act Authorisation and by LLW Repository Ltd in their Conditions for Acceptance? Yes *

Customer Details (continued)

8. If the answer at (7) is "No", please provide the name, job title, company name, company address, telephone number, and e-mail address of the person who will be considered competent:

9. If persons other than the owner of the waste will handle the waste and be responsible for the disposal please provide their name, job title, company name, company address, telephone number and e-mail address:

Nature of the Waste

10. Describe the nature of the process giving rise to the radioactive waste and the type of radioactive waste generated. State the physical and chemical form of the radioactive waste and the nature of the radioactive contaminant.

Origin of Waste: Active spent filter cartridges (> 2 mSv h-1) arise from the purification treatment lines of water auxiliary circuits: Chemical and Volumetric Control System (CVCS), Boron Recycle System (BRS), Liquid Waste Treatment System (LWTS), Spent Fuel Pit Treatment System (FPTS).
Waste Physical Characteristics: Cartridges are composed principally of stainless style supports with glass fibre filter and some organic materials. The amount of particulate radioactive material (metallic oxides) trapped on each filter can variable. Density of raw waste is 0.3 g/cc.
Nature of contamination: Activation products and fission products, beta and beta/gamma emitters (60Co, 58Co, 54Mn, 65Zn, 110mAg, 137Cs, 10Be, 14C, 36Cl, 41Ca, 55Fe, 59Ni, 63Ni, 79Se, 90Sr, 93Mo, 93Zr, 94Nb, 99Tc, 107Pd, 108mAg, 121mSn, 126Sn, 129I, 135Cs, 151Sm). Only trace levels of alpha emitter are expected to be present.
Chemical characteristics of raw waste: Fe, Co, Ni, Cr, organics, cellulose…(Cl: 489 ppm, SO4: 178 ppm)
Toxic chemicals present in raw waste: B: 6,000 ppm Pb: 425 ppm Cr tot: 240 ppm Ni: 210 ppm As, Sb, Hg: 5 ppm Be,Se: 0,2 ppm Cd: 11 ppm. No complexing agents or reactive metals will be present.
Treatment: Spent cartridges will be directly encapsulated into drums using a cementitious matrix. There will be no free water. Waste will be consigned as non-compactable 200 litre drums transported in ISO containers for the grouting and disposal service. SO disposal containers for grouting and disposal service. Mass of a drum: 340 kg (drum: 17 kg, cement: 286 kg, filters: 37 kg).

11. Are you willing to provide the necessary Quality Assurance documentation, including a relevant wastestream characterisation, for the waste to be consigned and for your operations involving the generation and subsequent handling of waste for disposal to be audited by LLW Repository Ltd as required by the Conditions for Acceptance? Yes *

12. Do you confirm that the waste will comply in all respects with the Conditions for Acceptance, including that it excludes wastes which with reasonable practicable means could be disposed of to a domestic landfill or as special precautions disposal? Yes *

13. Will Hazardous Wastes, as defined in the Hazardous Waste Regulations, be included within any consignment? Yes *

14. For wastestreams containing uranium, plutonium or thorium, has this arisen from a process or from material which is subject to EURATOM safeguards? Yes *

    If "Yes", please confirm that either the amounts of these elements are below reportable levels, or that they will be reported as a Measured Discard. Below Reportable *

Waste Consignment Details

15. For each year in which it is intended to consign waste for disposal, set out below the details of the waste, giving as accurate an estimate as possible of the weight, volume and radioactive content expressed in megabecquerels.

Calendar Year		Normal Vol & Act	Max Vol & Act			Future Years
Weight (kg)	Raw waste	1.79E+03	2.69E+03			
Volume (m^3)	Raw waste	5E+00	7,5E+00			
Uranium (MBq)		No	No			
Radium-226 (MBq)		No	No			
Thorium-232 (MBq)		No	No			
Other alpha emitters (MBq)[1]		7.53E-01	1.13E+00			
Carbon-14 (MBq)		5.5E+01	8.27E+01			
Iodine-129 (MBq)		2.17E-04	3.27E-04			
Tritium (MBq)		No	No			
Cobalt-60 (MBq)		1.64E+04	7.52E+03			
Other radionuclides (MBq)[2]	58Co excepted	9.00E+04	3.23E+04			

Notes:

1. "Other alpha emitters" means alpha-emitting radionuclides with half-lives greater than three months excluding uranium, radium-226 and thorium-232

2. "Other radionuclides" means iron-55 and beta-emitting radionuclides with half-lives greater than three months[3] unless individually specified in this Table (i.e. excluding Carbon-14, Iodine-129, Cobalt-60 and Tritium)

3. The activity of decay products with half lives of three months or less should be included only if they are present in amounts exceeding those which could be present through radioactive decay of the accounted radionuclides. Decay products are defined as those radionuclides succeeding another radionuclide in the radioactive series in which both, or all, occur.

Customer Declaration

I declare that the information provided is true and complete to the best of my knowledge.

Name: (Please Print) Company:

Signature: Date:

FOR LLW REPOSITORY LTD USE ONLY

Received on: *Form D1 Reference Number:*

Response required by: *Status:*

LLW Repository Ltd

Form D1: Response to request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

FOR LLW REPOSITORY LTD USE ONLY

To:

Address:

Further to your recent request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository, I can confim on behalf of LLW Repository Ltd that:

1. LLW Repository Ltd **agrees** in principle to accept the waste as described in your request.

   Note: Any agreement is subject to a valid Certificate of Authorisation for disposal being issued to you from the Environment Agency and sufficient volumetric and radiological capacity being available under the Certificate of Authorisation for disposal at the Low Level Waste Repository. Allocation of volumetric and radiological capacity and disposal of the waste will be subject to your acceptance of a disposal contract with LLW Repository Ltd.

2. LLW Repository Ltd **does not agree** in principle to accept the waste as described in your request for the following reasons:

If you would like any further clarification on this decision or require any additional information, please contact the Low Level Waste Service Manager, through the Low Level Waste Customer Team, by telephone: (01946) 724834 or by e-mail: customerteam@llwrsite.com.

Authorisation by LLW Repository Ltd

Name: (Please Print) Position:

Signature: Date:

LLW Repository Ltd

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Introduction

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Customer Details

1. Name of Waste Owner:

Operator specific data. Not available at this time.

2. Address of Company Office:

Operator specific data. Not available at this time.

3. Address of premises where the waste was / is to be generated:

Site specific data. Information not available at this time.

4. Address of premises where the waste is accumulated and from which it will be disposed:

Site specific data. Information not available at this time.

5. Job title of Head of premises named in (4):

6. Name, job title, company address, telephone number and e-mail address of the day-to-day contact for this waste:

Bertrand LANTES, specialist in waste management
EDF / DPN / UTO
6, avenue Montaigne
93192 Noisy le Grand, cedex
FRANCE

7. Will the person named in (6) be considered competent and able to secure compliance with the limitations and conditions to be specified in the relevant Radioactive Substances Act Authorisation and by LLW Repository Ltd in their Conditions for Acceptance? Yes *

Customer Details (continued)

8. If the answer at (7) is "No", please provide the name, job title, company name, company address, telephone number, and e-mail address of the person who will be considered competent:

9. If persons other than the owner of the waste will handle the waste and be responsible for the disposal please provide their name, job title, company name, company address, telephone number and e-mail address:

Nature of the Waste

10. Describe the nature of the process giving rise to the radioactive waste and the type of radioactive waste generated. State the physical and chemical form of the radioactive waste and the nature of the radioactive contaminant.

Origin of the waste: Air filters and water filters (< 2 mSv/h) arising mainly from the Gaseous Treatment System (GTS), Liquid Waste Treatment System (LWTS), Steam Generator Blowdown System (SGBS).
Waste physical characteristics: Cartridges are composed principally of stainless style supports with glass fibre filter and some organic materials. The amount of particulate radioactive material (metallic oxides) trapped on each filter may be variable. Density of raw waste is 0.4.
Nature of contamination: Activation products and fission products, beta and beta/gamma emitters (60Co, 58Co, 54Mn, 65Zn, 110mAg, 137Cs, 10Be, 14C, 36Cl, 41Ca, 55Fe, 59Ni, 63Ni, 79Se, 90Sr, 93Mo, 93Zr, 94Nb, 99Tc, 107Pd, 108mAg, 121mSn, 126Sn, 129I, 135Cs, 151Sm). Only trace amounts of alpha emitters are expected.
Chemical characterisitics of raw waste: Fe, Co, Ni, Cr, organics, cellulose…(Cl: 248 ppm, SO4: 680 ppm)
Toxic chemcials: B: 8,150 ppm Pb: 904 ppm Cr tot: 333 ppm Ni: 291 ppm As, Sb, Hg: 7 ppm Be: 0,3 ppm Se: 3 ppm Cd: 15 ppm CN-: 0.12 ppm (max [air filter/water filter] considered). No complexing agents or reactive metals will be present.
Treatment: The filters will be dismantled, shredded and dried.
Packaging: 200 L metallic drums sent directly to the high force compaction at WAMAC. Mass of a drum: 125 kg (drum: 17 kg, filters : 108 kg)

11. Are you willing to provide the necessary Quality Assurance documentation, including a relevant wastestream characterisation, for the waste to be consigned and for your operations involving the generation and subsequent handling of waste for disposal to be audited by LLW Repository Ltd as required by the Conditions for Acceptance? Yes *

12. Do you confirm that the waste will comply in all respects with the Conditions for Acceptance, including that it excludes wastes which with reasonable practicable means could be disposed of to a domestic landfill or as special precautions disposal? Yes *

13. Will Hazardous Wastes, as defined in the Hazardous Waste Regulations, be included within any consignment? Yes *

14. For wastestreams containing uranium, plutonium or thorium, has this arisen from a process or from material which is subject to EURATOM safeguards? Yes *

    If "Yes", please confirm that either the amounts of these elements are below reportable levels, or that they will be reported as a Measured Discard. Below Reportable *

Waste Consignment Details

15. For each year in which it is intended to consign waste for disposal, set out below the details of the waste, giving as accurate an estimate as possible of the weight, volume and radioactive content expressed in megabecquerels.

Calendar Year		Normal Vol & Act	Max Vol & Act			Future Years
Weight (kg)	raw waste	1.6E+03	2.4E+03			
Volume (m^3)	raw waste	4E+00	6E+00			
Uranium (MBq)		No	No			
Radium-226 (MBq)		No	No			
Thorium-232 (MBq)		No	No			
Other alpha emitters (MBq)[1]		3.54E-02	7.53E-01			
Carbon-14 (MBq)		2.6E+00	5.52E+01			
Iodine-129 (MBq)		1.03E-05	2.18E-04			
Tritium (MBq)		No	No			
Cobalt-60 (MBq)		2.36E+02	5.02E+03			
Other radionuclides (MBq)[2]	58Co excepted	7.77E+02	1.65E+04			

Notes:

1. "Other alpha emitters" means alpha-emitting radionuclides with half-lives greater than three months excluding uranium, radium-226 and thorium-232

2. "Other radionuclides" means iron-55 and beta-emitting radionuclides with half-lives greater than three months[3] unless individually specified in this Table (i.e. excluding Carbon-14, Iodine-129, Cobalt-60 and Tritium)

3. The activity of decay products with half lives of three months or less should be included only if they are present in amounts exceeding those which could be present through radioactive decay of the accounted radionuclides. Decay products are defined as those radionuclides succeeding another radionuclide in the radioactive series in which both, or all, occur.

Customer Declaration

I declare that the information provided is true and complete to the best of my knowledge.

Name: (Please Print) Company:

Signature: Date:

FOR LLW REPOSITORY LTD USE ONLY

Received on: *Form D1 Reference Number:*

Response required by: *Status:*

LLW Repository Ltd

Form D1: Response to request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

FOR LLW REPOSITORY LTD USE ONLY

To:

Address:

Further to your recent request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository, I can confim on behalf of LLW Repository Ltd that:

1. LLW Repository Ltd **agrees** in principle to accept the waste as described in your request.

   Note: Any agreement is subject to a valid Certificate of Authorisation for disposal being issued to you from the Environment Agency and sufficient volumetric and radiological capacity being available under the Certificate of Authorisation for disposal at the Low Level Waste Repository. Allocation of volumetric and radiological capacity and disposal of the waste will be subject to your acceptance of a disposal contract with LLW Repository Ltd.

2. LLW Repository Ltd **does not agree** in principle to accept the waste as described in your request for the following reasons:

If you would like any further clarification on this decision or require any additional information, please contact the Low Level Waste Service Manager, through the Low Level Waste Customer Team, by telephone: (01946) 724834 or by e-mail: customerteam@llwrsite.com.

Authorisation by LLW Repository Ltd

Name: (Please Print) Position:

Signature: Date:

LLW Repository Ltd

Form D1: Request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

Introduction

This form is to be completed by customers seeking to dispose of radioactive waste to the Low Level Waste Repository to request agreement in principle prior to disposal of waste. The information required relates to the owner, usually a company, having title to the waste for disposal, except where stated. Please answer each question as fully as possible. If there are insufficient lines in any of the tables, please enter details on a separate sheet and indicate on the appropriate table that you have done so. (*denotes select from drop down menu).

If you need any assistance or have any questions regarding completion of this form, please contact the Low Level Waste Customer Team, by telephone: (01946) 722252 or by e-mail: customerteam@llwrsite.com

Please return the completed and signed form by post to: Low Level Waste Customer Team, Low Level Waste Repository Limited, Allerdale Court, Greengarth, Holmrook, Cumbria, CA19 1UL, by fax to: (01946) 722260 or by e-mail to: customerteam@llwrsite.com

Customer Details

1. Name of Waste Owner:

Operator specific data. Not available at this time.

2. Address of Company Office:

Operator specific data. Not available at this time.

3. Address of premises where the waste was / is to be generated:

Site specific data. Information not available at this time.

4. Address of premises where the waste is accumulated and from which it will be disposed:

Site specific data. Information not available at this time.

5. Job title of Head of premises named in (4):

Site specific data. Information not available at this time.

6. Name, job title, company address, telephone number and e-mail address of the day-to-day contact for this waste:

Bertrand LANTES, specialist in waste management
EDF / DPN / UTO
6, avenue Montaigne
93192 Noisy le Grand, cedex
FRANCE

7. Will the person named in (6) be considered competent and able to secure compliance with the limitations and conditions to be specified in the relevant Radioactive Substances Act Authorisation and by LLW Repository Ltd in their Conditions for Acceptance? Yes *

Customer Details (continued)

8. If the answer at (7) is “No”, please provide the name, job title, company name, company address, telephone number, and e-mail address of the person who will be considered competent:

9. If persons other than the owner of the waste will handle the waste and be responsible for the disposal please provide their name, job title, company name, company address, telephone number and e-mail address:

Nature of the Waste

10. Describe the nature of the process giving rise to the radioactive waste and the type of radioactive waste generated. State the physical and chemical form of the radioactive waste and the nature of the radioactive contaminant.

Origin of waste: Maintenance and operational waste arising mainly during outages collected in plastic bags.
Physical nature of waste: Heterogeneous active waste (technological waste or operational waste): pieces of metal, plastic, clothes, etc., of which dose rate in contact is above 2mSv h-1 (contamination by active metallic oxides). Density of the raw waste will be 0.4 g/cc.
Radioactive contamination: activation products and fission products, beta and beta/gamma emitters (60Co, 58Co, 54Mn, 65Zn, 110mAg, 125Sb, 134Cs, 137Cs, 10Be, 14C, 36Cl, 41Ca, 55Fe, 59Ni, 63Ni, 79Se, 90Sr, 93Mo, 93Zr, 94Nb, 99Tc, 107Pd, 108mAg, 121mSn, 126Sn, 129I, 135Cs, 151Sm) and a very low amount of alpha emitters
Chemical characteristics of raw waste: Fe, Co, Ni, Cr, plastics (PVC, PE), cellulose.
Toxic chemicals in raw waste: B: 100 ppm Pb: 88 ppm Cr tot: 8 ppm Ni: 12 ppm As: 0.33 ppm Sb: 1,045 ppm Se: 0.22 ppm Cd: 5.6 ppm Be: 0.40 ppm CN-: 0.03 ppm Hg < 0.5 ppm. No complexing agents or reactive metals are expect to be present except for a limited amount of aluminium (0.1 m2/drum).
Treatment: Plastic bags are filled with waste and loaded directly into drums (there will be no pre compaction on site, due to dose rate). The waste will be dry. The waste will be consigned as non-compactable waste in 200 L metallic drums transported in ISO disposal containers for grouting and disposal service. Mass of a drum : 97 kg (drum: 17 kg, waste: 80 kg).

11. Are you willing to provide the necessary Quality Assurance documentation, including a relevant wastestream characterisation, for the waste to be consigned and for your operations involving the generation and subsequent handling of waste for disposal to be audited by LLW Repository Ltd as required by the Conditions for Acceptance? Yes *

12. Do you confirm that the waste will comply in all respects with the Conditions for Acceptance, including that it excludes wastes which with reasonable practicable means could be disposed of to a domestic landfill or as special precautions disposal? Yes *

13. Will Hazardous Wastes, as defined in the Hazardous Waste Regulations, be included within any consignment? Yes *

14. For wastestreams containing uranium, plutonium or thorium, has this arisen from a process or from material which is subject to EURATOM safeguards? Yes *

    If “Yes”, please confirm that either the amounts of these elements are below reportable levels, or that they will be reported as a Measured Discard. Below Reportable *

Waste Consignment Details

15. For each year in which it is intended to consign waste for disposal, set out below the details of the waste, giving as accurate an estimate as possible of the weight, volume and radioactive content expressed in megabecquerels.

Calendar Year		Normal Vol & Act	Max Vol & Act			Future Years
Weight (kg)		4E+02	6E+02			
Volume (m^3)		1E+00	1.5E+00			
Uranium (MBq)		No	No			
Radium-226 (MBq)		No	No			
Thorium-232 (MBq)		No	No			
Other alpha emitters (MBq)[1]		1.85E-01	2.78E-01			
Carbon-14 (MBq)		1.36E+01	2.04E+01			
Iodine-129 (MBq)		6.33E-05	9.50E-05			
Tritium (MBq)		No	No			
Cobalt-60 (MBq)		1.24E+03	1.85E+03			
Other radionuclides (MBq)[2]	58Co excepted	4.80E+03	5.33E+03			

Notes:

1. "Other alpha emitters" means alpha-emitting radionuclides with half-lives greater than three months excluding uranium, radium-226 and thorium-232

2. "Other radionuclides" means iron-55 and beta-emitting radionuclides with half-lives greater than three months[3] unless individually specified in this Table (i.e. excluding Carbon-14, Iodine-129, Cobalt-60 and Tritium)

3. The activity of decay products with half lives of three months or less should be included only if they are present in amounts exceeding those which could be present through radioactive decay of the accounted radionuclides. Decay products are defined as those radionuclides succeeding another radionuclide in the radioactive series in which both, or all, occur.

Customer Declaration

I declare that the information provided is true and complete to the best of my knowledge.

Name: (Please Print) Company:

Signature: Date:

FOR LLW REPOSITORY LTD USE ONLY

Received on: *Form D1 Reference Number:*

Response required by: *Status:*

LLW Repository Ltd

Form D1: Response to request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

FOR LLW REPOSITORY LTD USE ONLY

To:

Address:

Further to your recent request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository, I can confim on behalf of LLW Repository Ltd that:

1. LLW Repository Ltd **agrees** in principle to accept the waste as described in your request.

   Note: Any agreement is subject to a valid Certificate of Authorisation for disposal being issued to you from the Environment Agency and sufficient volumetric and radiological capacity being available under the Certificate of Authorisation for disposal at the Low Level Waste Repository. Allocation of volumetric and radiological capacity and disposal of the waste will be subject to your acceptance of a disposal contract with LLW Repository Ltd.

2. LLW Repository Ltd **does not agree** in principle to accept the waste as described in your request for the following reasons:

If you would like any further clarification on this decision or require any additional information, please contact the Low Level Waste Service Manager, through the Low Level Waste Customer Team, by telephone: (01946) 724834 or by e-mail: customerteam@llwrsite.com.

Authorisation by LLW Repository Ltd

Name: (Please Print) Position:

Signature: Date:

LLW Repository Ltd

Form D1: Request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

Introduction

This form is to be completed by customers seeking to dispose of radioactive waste to the Low Level Waste Repository to request agreement in principle prior to disposal of waste. The information required relates to the owner, usually a company, having title to the waste for disposal, except where stated. Please answer each question as fully as possible. If there are insufficient lines in any of the tables, please enter details on a separate sheet and indicate on the appropriate table that you have done so. (*denotes select from drop down menu).

If you need any assistance or have any questions regarding completion of this form, please contact the Low Level Waste Customer Team, by telephone: (01946) 722252 or by e-mail: customerteam@llwrsite.com

Please return the completed and signed form by post to: Low Level Waste Customer Team, Low Level Waste Repository Limited, Allerdale Court, Greengarth, Holmrook, Cumbria, CA19 1UL, by fax to: (01946) 722260 or by e-mail to: customerteam@llwrsite.com

Customer Details

1. Name of Waste Owner:

Operator specific data. Not available at this time.

2. Address of Company Office:

Operator specific data. Not available at this time.

3. Address of premises where the waste was / is to be generated:

Site specific data. Information not available at this time.

4. Address of premises where the waste is accumulated and from which it will be disposed:

Site specific data. Information not available at this time.

5. Job title of Head of premises named in (4):

Site specific data. Information not available at this time.

6. Name, job title, company address, telephone number and e-mail address of the day-to-day contact for this waste:

Bertrand LANTES, specialist in waste management
EDF / DPN / UTO
6 avenue Montaigne
93192 Noisy le Grand cedex
FRANCE

7. Will the person named in (6) be considered competent and able to secure compliance with the limitations and conditions to be specified in the relevant Radioactive Substances Act Authorisation and by LLW Repository Ltd in their Conditions for Acceptance? Yes *

Customer Details (continued)

8. If the answer at (7) is “No”, please provide the name, job title, company name, company address, telephone number, and e-mail address of the person who will be considered competent:

9. If persons other than the owner of the waste will handle the waste and be responsible for the disposal please provide their name, job title, company name, company address, telephone number and e-mail address:

Nature of the Waste

10. Describe the nature of the process giving rise to the radioactive waste and the type of radioactive waste generated. State the physical and chemical form of the radioactive waste and the nature of the radioactive contaminant.

Waste origin: Maintenance and operational waste arising mainly during reactor outages and are collected in plastic bags.
Physical nature of waste: Heterogeneous low active waste (technological waste or operational waste) consisting of small pieces of metal, plastic, clothes,..., of which dose rate in contact is under 2mSv h-1 (contamination by active metallic oxides). Mainly arising during outages these wastes are collected into plastic bags. 75 % of these wastes are burnable. They are all compactable. Raw waste density 0.4 g/cc.
Nature of contamination: Metallic oxide activation products and fission products, beta and beta/gamma emitters (60Co, 58Co, 54Mn, 65Zn, 110mAg, 125Sb, 134Cs, 137Cs, 10Be, 14C, 36Cl, 41Ca, 55Fe, 59Ni, 63Ni, 79Se, 90Sr, 93Mo, 93Zr, 94Nb, 99Tc, 107Pd, 108mAg, 121mSn, 126Sn, 129I, 135Cs, 151Sm) and a very low amount of alpha emitters.
Chemicals in raw waste: Fe, Co, Ni, Cr, plastics (PVC, PE), cellulose,…
Toxic chemcials in raw waste: B: 264 ppm Pb: 117 ppm Cr tot: 8 ppm Ni: 9 ppm As: 0.26 ppm Sb: 1,509 ppm Se: 0.3 ppm Cd: 4.3 ppm Be: 0.39 ppm CN-: 0.03 ppm Hg: 0.05 ppm. No complexing agents or reactive metals expected to be present except for a limited quantity of aluminium (0.1 m2/drum).
Treatment: Plastice bags will be loaded directly into drums and subject to in-drum compaction (25 te). The waste will be dry. The 200 L metallic drums will be consigned via WAMAC for supercompaction. Mass of a drum : 97 kg (drum: 17 kg, waste: 80 kg).
75 % of these wastes are combustible and could be shipped to an incinerator facility after being segregated. Then, plastic bags could be pre compacted into plastic drums instead of metallic drums (optimisation of the incineration process).

11. Are you willing to provide the necessary Quality Assurance documentation, including a relevant wastestream characterisation, for the waste to be consigned and for your operations involving the generation and subsequent handling of waste for disposal to be audited by LLW Repository Ltd as required by the Conditions for Acceptance? Yes *

12. Do you confirm that the waste will comply in all respects with the Conditions for Acceptance, including that it excludes wastes which with reasonable practicable means could be disposed of to a domestic landfill or as special precautions disposal? Yes *

13. Will Hazardous Wastes, as defined in the Hazardous Waste Regulations, be included within any consignment? Yes *

14. For wastestreams containing uranium, plutonium or thorium, has this arisen from a process or from material which is subject to EURATOM safeguards? Yes *

    If “Yes”, please confirm that either the amounts of these elements are below reportable levels, or that they will be reported as a Measured Discard. Below Reportable *

Waste Consignment Details

15. For each year in which it is intended to consign waste for disposal, set out below the details of the waste, giving as accurate an estimate as possible of the weight, volume and radioactive content expressed in megabecquerels.

Calendar Year		Normal Vol & Act	Max Vol & Act			Future Years
Weight (kg)		2E+04	3E+04			
Volume (m^3)		5E+01	7.5E+01			
Uranium (MBq)		No	No			
Radium-226 (MBq)		No	No			
Thorium-232 (MBq)		No	No			
Other alpha emitters (MBq)[1]		4.76E-01	1.73E+01			
Carbon-14 (MBq)		3.49E+01	1.26E+03			
Iodine-129 (MBq)		1.63E-04	5.89E-03			
Tritium (MBq)		No	No			
Cobalt-60 (MBq)		3.17E+03	1.15E+05			
Other radionuclides (MBq)[2]	58Co excepted	9.11E+03	3.3E+05			

Notes:

1. "Other alpha emitters" means alpha-emitting radionuclides with half-lives greater than three months excluding uranium, radium-226 and thorium-232

2. "Other radionuclides" means iron-55 and beta-emitting radionuclides with half-lives greater than three months[3] unless individually specified in this Table (i.e. excluding Carbon-14, Iodine-129, Cobalt-60 and Tritium)

3. The activity of decay products with half lives of three months or less should be included only if they are present in amounts exceeding those which could be present through radioactive decay of the accounted radionuclides. Decay products are defined as those radionuclides succeeding another radionuclide in the radioactive series in which both, or all, occur.

Customer Declaration

I declare that the information provided is true and complete to the best of my knowledge.

Name: (Please Print) Company:

Signature: Date:

FOR LLW REPOSITORY LTD USE ONLY

Received on: *Form D1 Reference Number:*

Response required by: *Status:*

LLW Repository Ltd

Form D1: Response to request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

FOR LLW REPOSITORY LTD USE ONLY

To:

Address:

Further to your recent request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository, I can confim on behalf of LLW Repository Ltd that:

1. LLW Repository Ltd **agrees** in principle to accept the waste as described in your request.

   Note: Any agreement is subject to a valid Certificate of Authorisation for disposal being issued to you from the Environment Agency and sufficient volumetric and radiological capacity being available under the Certificate of Authorisation for disposal at the Low Level Waste Repository. Allocation of volumetric and radiological capacity and disposal of the waste will be subject to your acceptance of a disposal contract with LLW Repository Ltd.

2. LLW Repository Ltd **does not agree** in principle to accept the waste as described in your request for the following reasons:

If you would like any further clarification on this decision or require any additional information, please contact the Low Level Waste Service Manager, through the Low Level Waste Customer Team, by telephone: (01946) 724834 or by e-mail: customerteam@llwrsite.com.

Authorisation by LLW Repository Ltd

Name: (Please Print) Position:

Signature: Date:

LLW Repository Ltd

Form D1: Request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

Introduction

This form is to be completed by customers seeking to dispose of radioactive waste to the Low Level Waste Repository to request agreement in principle prior to disposal of waste. The information required relates to the owner, usually a company, having title to the waste for disposal, except where stated. Please answer each question as fully as possible. If there are insufficient lines in any of the tables, please enter details on a separate sheet and indicate on the appropriate table that you have done so. (*denotes select from drop down menu).

If you need any assistance or have any questions regarding completion of this form, please contact the Low Level Waste Customer Team, by telephone: (01946) 722252 or by e-mail: customerteam@llwrsite.com

Please return the completed and signed form by post to: Low Level Waste Customer Team, Low Level Waste Repository Limited, Allerdale Court, Greengarth, Holmrook, Cumbria, CA19 1UL, by fax to: (01946) 722260 or by e-mail to: customerteam@llwrsite.com

Customer Details

1. Name of Waste Owner:

Operator specific data. Not available at this time.

2. Address of Company Office:

Operator specific data. Not available at this time.

3. Address of premises where the waste was / is to be generated:

Site specific data. Information not available at this time.

4. Address of premises where the waste is accumulated and from which it will be disposed:

Site specific data. Information not available at this time.

5. Job title of Head of premises named in (4):

6. Name, job title, company address, telephone number and e-mail address of the day-to-day contact for this waste:

Bertrand LANTES, specialist in waste management
EDF / DPN / UTO
6, avenue Montaigne
93192 Noisy le Grand, cedex
FRANCE

7. Will the person named in (6) be considered competent and able to secure compliance with the limitations and conditions to be specified in the relevant Radioactive Substances Act Authorisation and by LLW Repository Ltd in their Conditions for Acceptance? Yes *

Customer Details (continued)

8. If the answer at (7) is "No", please provide the name, job title, company name, company address, telephone number, and e-mail address of the person who will be considered competent:

9. If persons other than the owner of the waste will handle the waste and be responsible for the disposal please provide their name, job title, company name, company address, telephone number and e-mail address:

Nature of the Waste

10. Describe the nature of the process giving rise to the radioactive waste and the type of radioactive waste generated. State the physical and chemical form of the radioactive waste and the nature of the radioactive contaminant.

Origin of waste: Stainless steel waste arising from mainentance operations. This waste will be mostly generated during reactor outages.
Scraps (mainly stainless steels) with low level of contamination, of which dose rate in contact is under 2mSv h-1 (contamination by active metallic oxides). Mainly arising during outages.
Radioactive contamination: The waste metal will be contaminated with metal oxide activation products and fission products, beta and beta/gamma emitters (60Co, 58Co, 54Mn, 65Zn, 110mAg, 125Sb, 134Cs, 137Cs, 10Be, 14C, 36Cl, 41Ca, 55Fe, 59Ni, 63Ni, 79Se, 90Sr, 93Mo, 93Zr, 94Nb, 99Tc, 107Pd, 108mAg, 121mSn, 126Sn, 129I, 135Cs, 151Sm). Only trace levels of alpha emitters are expected.
Toxic chemicals: Pb: 10 ppm Cr tot: 1 ppm Ni: 1.35 ppm As: 0.02 ppm Cd: 0.22 ppm Hg: 0.02 ppm. No complexing agents or reactive metals will be present in the waste.
Treatment: waste will be placed into metallic boxes or metallic drums. The waste will be dry. The waste will be consigned in uncompactable 1 m3 metallic boxes or uncompactable 200 L metallic drums transported in an ISO disposal container for grouting and disposal service. Mass of a box: 592 kg (box: 92 kg, scraps: 500 kg), mass of a drum: 117 kg (drum: 17kg, scraps: 100 kg). Waste bulk density = 0.5 g/cc.

Remarks: Metal wastes could be consigned to a melting facility if available. Very low level contaminated scraps could be segregated and shipped to a recycling facility.

11. Are you willing to provide the necessary Quality Assurance documentation, including a relevant wastestream characterisation, for the waste to be consigned and for your operations involving the generation and subsequent handling of waste for disposal to be audited by LLW Repository Ltd as required by the Conditions for Acceptance? Yes *

12. Do you confirm that the waste will comply in all respects with the Conditions for Acceptance, including that it excludes wastes which with reasonable practicable means could be disposed of to a domestic landfill or as special precautions disposal? Yes *

13. Will Hazardous Wastes, as defined in the Hazardous Waste Regulations, be included within any consignment? Yes *

14. For wastestreams containing uranium, plutonium or thorium, has this arisen from a process or from material which is subject to EURATOM safeguards? Yes *

    If "Yes", please confirm that either the amounts of these elements are below reportable levels, or that they will be reported as a Measured Discard. Below Reportable *

Waste Consignment Details

15. For each year in which it is intended to consign waste for disposal, set out below the details of the waste, giving as accurate an estimate as possible of the weight, volume and radioactive content expressed in megabecquerels.

Calendar Year		Normal Vol & Act	Max Vol & Act			Future Years
Weight (kg)		3E+03	4.5E+03			
Volume (m^3)		6E+00	9E+00			
Uranium (MBq)		No	No			
Radium-226 (MBq)		No	No			
Thorium-232 (MBq)		No	No			
Other alpha emitters (MBq)[1]		1.67E-02	5.39E-01			
Carbon-14 (MBq)		1.22E+00	3.95E+01			
Iodine-129 (MBq)		5.71E-06	1.84E-04			
Tritium (MBq)		No	No			
Cobalt-60 (MBq)		1.11E+02	3.59E+03			
Other radionuclides (MBq)[2]	58Co excepted	3.19E+02	1.03E+04			

Notes:

1. "Other alpha emitters" means alpha-emitting radionuclides with half-lives greater than three months excluding uranium, radium-226 and thorium-232

2. "Other radionuclides" means iron-55 and beta-emitting radionuclides with half-lives greater than three months[3] unless individually specified in this Table (i.e. excluding Carbon-14, Iodine-129, Cobalt-60 and Tritium)

3. The activity of decay products with half lives of three months or less should be included only if they are present in amounts exceeding those which could be present through radioactive decay of the accounted radionuclides. Decay products are defined as those radionuclides succeeding another radionuclide in the radioactive series in which both, or all, occur.

Customer Declaration

I declare that the information provided is true and complete to the best of my knowledge.

Name: (Please Print) Company:

Signature: Date:

FOR LLW REPOSITORY LTD USE ONLY

Received on: *Form D1 Reference Number:*

Response required by: *Status:*

LLW Repository Ltd

Form D1: Response to request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

FOR LLW REPOSITORY LTD USE ONLY

To:

Address:

Further to your recent request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository, I can confim on behalf of LLW Repository Ltd that:

1. LLW Repository Ltd **agrees** in principle to accept the waste as described in your request.

   Note: Any agreement is subject to a valid Certificate of Authorisation for disposal being issued to you from the Environment Agency and sufficient volumetric and radiological capacity being available under the Certificate of Authorisation for disposal at the Low Level Waste Repository. Allocation of volumetric and radiological capacity and disposal of the waste will be subject to your acceptance of a disposal contract with LLW Repository Ltd.

2. LLW Repository Ltd **does not agree** in principle to accept the waste as described in your request for the following reasons:

If you would like any further clarification on this decision or require any additional information, please contact the Low Level Waste Service Manager, through the Low Level Waste Customer Team, by telephone: (01946) 724834 or by e-mail: customerteam@llwrsite.com.

Authorisation by LLW Repository Ltd

Name: (Please Print) Position:

Signature: Date:

LLW Repository Ltd

Form D1: Request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

Introduction

This form is to be completed by customers seeking to dispose of radioactive waste to the Low Level Waste Repository to request agreement in principle prior to disposal of waste. The information required relates to the owner, usually a company, having title to the waste for disposal, except where stated. Please answer each question as fully as possible. If there are insufficient lines in any of the tables, please enter details on a separate sheet and indicate on the appropriate table that you have done so. (*denotes select from drop down menu).

If you need any assistance or have any questions regarding completion of this form, please contact the Low Level Waste Customer Team, by telephone: (01946) 722252 or by e-mail: customerteam@llwrsite.com

Please return the completed and signed form by post to: Low Level Waste Customer Team, Low Level Waste Repository Limited, Allerdale Court, Greengarth, Holmrook, Cumbria, CA19 1UL, by fax to: (01946) 722260 or by e-mail to: customerteam@llwrsite.com

Customer Details

1. Name of Waste Owner:

Operator specific data. Not available at this time.

2. Address of Company Office:

Operator specific data. Not available at this time.

3. Address of premises where the waste was / is to be generated:

Site specific data. Information not available at this time.

4. Address of premises where the waste is accumulated and from which it will be disposed:

Site specific data. Information not available at this time.

5. Job title of Head of premises named in (4):

Site specific data. Information not available at this time.

6. Name, job title, company address, telephone number and e-mail address of the day-to-day contact for this waste:

Bertrand LANTES, specialist in waste management
EDF / DPN / UTO
6, avenue Montaigne
93192 Noisy le Grand, cedex
FRANCE

7. Will the person named in (6) be considered competent and able to secure compliance with the limitations and conditions to be specified in the relevant Radioactive Substances Act Authorisation and by LLW Repository Ltd in their Conditions for Acceptance? Yes *

Customer Details (continued)

8. If the answer at (7) is "No", please provide the name, job title, company name, company address, telephone number, and e-mail address of the person who will be considered competent:

9. If persons other than the owner of the waste will handle the waste and be responsible for the disposal please provide their name, job title, company name, company address, telephone number and e-mail address:

Nature of the Waste

10. Describe the nature of the process giving rise to the radioactive waste and the type of radioactive waste generated. State the physical and chemical form of the radioactive waste and the nature of the radioactive contaminant.

Origin of waste: Wet sludges arise from the cleaning of active liquor tanks (Liquid Waste Treatment System, Liquid Effluents Release System…) and sumps.
Nature of contamination: activation products and fission products, beta and beta/gamma emitters (3H, 60Co, 58Co, 54Mn, 65Zn, 110mAg, 125Sb, 134Cs, 137Cs, 10Be, 14C, 22Na, 36Cl, 41Ca, 55Fe, 59Ni, 63Ni, 79Se, 90Sr, 93Mo, 93Zr, 94Nb, 99Tc, 107Pd, 108mAg, 121mSn, 126Sn, 129I, 135Cs, 151Sm) and a very low amount of alpha emitters
Chemical characteristics of raw waste: Fe, Co, Ni, Cr, Ca, Na, carbonates, borates,…
Toxic chemcals in wet sludges: B: 1,000 ppm Pb: 335 ppm Cr tot: 189 ppm Ni: 165 ppm As, Sb, Hg: 4 ppm. Very low level of complexing agents may be present from carboxylic acids used in decontamination processes. No reactive metals will be present.
Treatment: Sludges will be encapsulated in a mortar matrix (cement, sand, lime, water). The will be no free water present in the packaged waste.
Packaging: Waste will be loaded into 200 L metallic transported in ISO disposal containers to the LLWR for the grouting and disposal service. Mass of a drum: 397 kg (drum: 17 kg, sludges: 80 kg, mortar: 300 kg). Density of raw waste: 1.2

11. Are you willing to provide the necessary Quality Assurance documentation, including a relevant wastestream characterisation, for the waste to be consigned and for your operations involving the generation and subsequent handling of waste for disposal to be audited by LLW Repository Ltd as required by the Conditions for Acceptance? Yes *

12. Do you confirm that the waste will comply in all respects with the Conditions for Acceptance, including that it excludes wastes which with reasonable practicable means could be disposed of to a domestic landfill or as special precautions disposal? Yes *

13. Will Hazardous Wastes, as defined in the Hazardous Waste Regulations, be included within any consignment? Yes *

14. For wastestreams containing uranium, plutonium or thorium, has this arisen from a process or from material which is subject to EURATOM safeguards? Yes *

    If "Yes", please confirm that either the amounts of these elements are below reportable levels, or that they will be reported as a Measured Discard. Below Reportable *

Waste Consignment Details

15. For each year in which it is intended to consign waste for disposal, set out below the details of the waste, giving as accurate an estimate as possible of the weight, volume and radioactive content expressed in megabecquerels.

Calendar Year		Normal Vol & Act	Max Vol & Act			Future Years
Weight (kg)		1.2E+03	2.4E+03			
Volume (m^3)		1E+00	2.E+00			
Uranium (MBq)		No	No			
Radium-226 (MBq)		No	No			
Thorium-232 (MBq)		No	No			
Other alpha emitters (MBq)[1]		5.26E-01	1.05E+00			
Carbon-14 (MBq)		3.86E+01	7.72E+01			
Iodine-129 (MBq)		1.80E-04	3.59E-04			
Tritium (MBq)	(fixed : 1E+03/m3	8.16E+02	1.63E+03			
Cobalt-60 (MBq)		3.51E+03	7.02E+03			
Other radionuclides (MBq)[2]	58Co excepted	1.44E+04	2.88E+04			

Notes:

1. "Other alpha emitters" means alpha-emitting radionuclides with half-lives greater than three months excluding uranium, radium-226 and thorium-232

2. "Other radionuclides" means iron-55 and beta-emitting radionuclides with half-lives greater than three months[3] unless individually specified in this Table (i.e. excluding Carbon-14, Iodine-129, Cobalt-60 and Tritium)

3. The activity of decay products with half lives of three months or less should be included only if they are present in amounts exceeding those which could be present through radioactive decay of the accounted radionuclides. Decay products are defined as those radionuclides succeeding another radionuclide in the radioactive series in which both, or all, occur.

Customer Declaration

I declare that the information provided is true and complete to the best of my knowledge.

Name: (Please Print) Company:

Signature: Date:

FOR LLW REPOSITORY LTD USE ONLY

Received on: *Form D1 Reference Number:*

Response required by: *Status:*

LLW Repository Ltd

Form D1: Response to request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository

FOR LLW REPOSITORY LTD USE ONLY

To:

Address:

Further to your recent request for Agreement in Principle to dispose of radioactive waste at the Low Level Waste Repository, I can confim on behalf of LLW Repository Ltd that:

1. LLW Repository Ltd **agrees** in principle to accept the waste as described in your request.

   Note: Any agreement is subject to a valid Certificate of Authorisation for disposal being issued to you from the Environment Agency and sufficient volumetric and radiological capacity being available under the Certificate of Authorisation for disposal at the Low Level Waste Repository. Allocation of volumetric and radiological capacity and disposal of the waste will be subject to your acceptance of a disposal contract with LLW Repository Ltd.

2. LLW Repository Ltd **does not agree** in principle to accept the waste as described in your request for the following reasons:

If you would like any further clarification on this decision or require any additional information, please contact the Low Level Waste Service Manager, through the Low Level Waste Customer Team, by telephone: (01946) 724834 or by e-mail: customerteam@llwrsite.com.

Authorisation by LLW Repository Ltd

Name: (Please Print) Position:

Signature: Date:

LLW Repository Ltd

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Introduction

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4. Address of premises where the waste is accumulated and from which it will be disposed:

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5. Job title of Head of premises named in (4):

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6. Name, job title, company address, telephone number and e-mail address of the day-to-day contact for this waste:

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7. Will the person named in (6) be considered competent and able to secure compliance with the limitations and conditions to be specified in the relevant Radioactive Substances Act Authorisation and by LLW Repository Ltd in their Conditions for Acceptance? Yes *

Customer Details (continued)

8. If the answer at (7) is "No", please provide the name, job title, company name, company address, telephone number, and e-mail address of the person who will be considered competent:

9. If persons other than the owner of the waste will handle the waste and be responsible for the disposal please provide their name, job title, company name, company address, telephone number and e-mail address:

Nature of the Waste

10. Describe the nature of the process giving rise to the radioactive waste and the type of radioactive waste generated. State the physical and chemical form of the radioactive waste and the nature of the radioactive contaminant.

Waste origin: Concentrates arise from the evaporator bottoms of the Liquid Waste Treatment System.
Radioactive contamination: activation products and fission products, beta and beta/gamma emitters (3H, 60Co, 58Co, 54Mn, 65Zn, 110mAg, 125Sb, 134Cs, 137Cs, 10Be, 14C, 22Na, 36Cl, 41Ca, 55Fe, 59Ni, 63Ni, 79Se, 90Sr, 93Mo, 93Zr, 94Nb, 99Tc, 107Pd, 108mAg, 121mSn, 126Sn, 129I, 135Cs, 151Sm) and a very low amount of alpha emitters
Chemical characteristics of raw waste: Borates, carbonates, Na, Fe, Co, Ni, Cr,…
Toxic chemicals: B: 42,160 ppm Pb: 335 ppm Cr tot: 6 ppm Ni: 8 ppm As: 4 ppm, Sb: 2 ppm, Hg, Be, Cd, Se: 0.4 ppm. Very low level of complexing agents (carboxylic acids used in decontamination processes). No reactive metals present.
Treatment: Waste will be encapsulated in a mortar matrix (cement, sand, lime, water). No free water will be present. Waste will be consigned in non-compactable 200 L metallic drums transported in ISO containers for grouting and disposal service. Mass of a drum: 382 kg (drum: 17 kg, concentrates: 87 kg, mortar: 278 kg). Density of raw waste: 1.1

Remark: Concentrates could be incinerated with combustible dry active waste if incineration option was available.

11. Are you willing to provide the necessary Quality Assurance documentation, including a relevant wastestream characterisation, for the waste to be consigned and for your operations involving the generation and subsequent handling of waste for disposal to be audited by LLW Repository Ltd as required by the Conditions for Acceptance? Yes *

12. Do you confirm that the waste will comply in all respects with the Conditions for Acceptance, including that it excludes wastes which with reasonable practicable means could be disposed of to a domestic landfill or as special precautions disposal? Yes *

13. Will Hazardous Wastes, as defined in the Hazardous Waste Regulations, be included within any consignment? Yes *

14. For wastestreams containing uranium, plutonium or thorium, has this arisen from a process or from material which is subject to EURATOM safeguards? Yes *

    If "Yes", please confirm that either the amounts of these elements are below reportable levels, or that they will be reported as a Measured Discard. Below Reportable *

Waste Consignment Details

15. For each year in which it is intended to consign waste for disposal, set out below the details of the waste, giving as accurate an estimate as possible of the weight, volume and radioactive content expressed in megabecquerels.

Calendar Year		Normal Vol & Act	Max Vol & Act			Future Years
Weight (kg)		3.3E+03	6.6E+03			
Volume (m^3)		3E+00	6E+00			
Uranium (MBq)		No	No			
Radium-226 (MBq)		No	No			
Thorium-232 (MBq)		No	No			
Other alpha emitters (MBq)[1]		3.02E-01	3.75E+00			
Carbon-14 (MBq)		2.21E+01	2.75E+02			
Iodine-129 (MBq)		1.03E-04	1.28E-03			
Tritium (MBq)	(fixed: 1E+03/m3	3.E+03	6.E+03			
Cobalt-60 (MBq)		2.01E+03	2.50E+04			
Other radionuclides (MBq)[2]	58Co excepted	5.76E+03	7.18E+04			

Notes:

1. "Other alpha emitters" means alpha-emitting radionuclides with half-lives greater than three months excluding uranium, radium-226 and thorium-232

2. "Other radionuclides" means iron-55 and beta-emitting radionuclides with half-lives greater than three months[3] unless individually specified in this Table (i.e. excluding Carbon-14, Iodine-129, Cobalt-60 and Tritium)

3. The activity of decay products with half lives of three months or less should be included only if they are present in amounts exceeding those which could be present through radioactive decay of the accounted radionuclides. Decay products are defined as those radionuclides succeeding another radionuclide in the radioactive series in which both, or all, occur.

Customer Declaration

I declare that the information provided is true and complete to the best of my knowledge.

Name: (Please Print) Company:

Signature: Date:

FOR LLW REPOSITORY LTD USE ONLY

Received on: *Form D1 Reference Number:*

Response required by: *Status:*

LLW Repository Ltd

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   Note: Any agreement is subject to a valid Certificate of Authorisation for disposal being issued to you from the Environment Agency and sufficient volumetric and radiological capacity being available under the Certificate of Authorisation for disposal at the Low Level Waste Repository. Allocation of volumetric and radiological capacity and disposal of the waste will be subject to your acceptance of a disposal contract with LLW Repository Ltd.

2. LLW Repository Ltd **does not agree** in principle to accept the waste as described in your request for the following reasons:

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Authorisation by LLW Repository Ltd

Name: (Please Print) Position:

Signature: Date: