

Application to the relevant hazardous substances authority (planning authority)

The Planning (Hazardous Substances) Act 1990 - Section 7(1)

England - The Planning (Hazardous Substances) Regulations 2015 (Regulation 5)

Wales - The Planning (Hazardous Substances) (Wales) Regulations 2015 (Regulation 5)

Application for Hazardous Substances Consent

1	Applicant	Sellafield Limited
	Address	Sellafield
		Seascale
		CUMBRIA
	Post code	CA20 1PG
Telephone number		
	Person in control of the land to which the application relates, if different to above	Development Control Team
	Address	Sellafield Limited, Albion Square One, Albion Street,
		Whitehaven, Cumbria
	Post code	CA28 7NE
	Telephone number	
2	Address or other location details of application site	Sellafield Site
		Seascale
		CUMBRIA
	Post code	CA20 1PG
	OS grid ref	303417, 504803

3 Hazardous substance(s) covered by the application

- (a) List named substances falling within Part 2 of Schedule 1 to the Regulations first, then list any substances falling within the categories in Part 1 of that Schedule; finally list substances falling within the description in Part 3.

- (b) Substances falling within Parts 1 or 3 of Schedule 1 to the Regulations may be listed under the relevant category or description or named specifically. Where a substance falls within Part 1 and 2 list under Part 2 only; where a substance falls within more than one category in Part 1 list under the category which has the lowest controlled quantity. Where a substance falling within Part 1 or 2 also falls within Part 3 list under the Part which has the lowest controlled quantity. The “controlled quantity” means the quantity specified for that substance in column 2 of Parts 1, 2 or 3 of Schedule 1 to the Regulations.

Note: The addition rule as set out in the schedule to the regulations should be applied to determine whether consent is required for substances below the Controlled Quantity. Examples are given in the associated planning guidance. The Planning (Hazardous Substances) (Amendment) Regulations 2017 are relevant to the use of the addition rule in England only. The Planning (Hazardous Substances) (Amendment) Regulations 2015 are relevant to Q* (addition rule) for LPG, and relevant to notes about ammonium nitrate.

Table A

<i>Name, or relevant category or description of substance</i>	<i>Part number in Schedule 1 to the Regulations, and entry number if Part 2, category if Part 1, identity if Part 3</i>	<i>Do you have a current PHS consent* in respect of this substance? (Yes/No)</i>	<i>If "yes", state quantity for which consent granted</i>	<i>Maximum quantity proposed to be present in tonnes</i>
Hydrogen	Part 2 – 15, Part 1 - P2	Yes	0.7	0.7
LPG	Part 2 – 18, Part 1 - P2	Yes	11.0	11.0
Acetylene	Part 2 – 19, Part 1 - P2	Yes	0.2	0.2
Oxygen	Part 2 – 25, Part 1 - P4	Yes	130.0	130.0
Petroleum Products	Part 2 – 34, Part 1 - P5c, E2	Yes	7,500.0	7,550.0
Sodium Hypochlorite	Part 2 – 41, Part 1 - E1	Yes	4.5	20.0
Nitric Acid	Part 1 - H2	No	-	1,240.0
Nitrogen Dioxide	Part 1 – H1, P4	Yes	3.0	3.0
Sodium Nitrite	Part 1 - H2, P8, E1	Yes	85.0	85.0
Hydrazine Nitrate	Part 1 - H2, E1	Yes	30.0	30.0
Barium Nitrate	Part 1 - P8	Yes	2.7	2.7
Gadolinium Nitrate	Part 1 - P8	Yes	8.1	8.1
Calcine Product	Part 1 - P8	Yes	1.0	1.0
Mixed Metal Nitrates	Part 1 - P8	Yes	20.0	20.0
Sodium Nitrate	Part 1 - P8	Yes	2.3	10.0
Hydroxylamine Nitrate	Part 1 - E1	Yes	45.0	45.0

*a hazardous substances consent

Where in Table A consent is sought for any substance below the relevant Control Quantity, give the reason in the box below including the calculation for each relevant type of hazard (health, physical and/or environmental) with the q/Q fractions that add to greater than or equal to 1.

Sodium Nitrate

Applying Physical properties additions aggregation as inventory:

$10/50$ (Sodium Nitrate) + $0.7/5$ (Hydrogen) + $11/50$ (LPG) + $0.2/5$ (Acetylene) + $130/200$ (Oxygen) + $3/50$ (Nitrogen Dioxide) + $2.7/50$ (Barium Nitrate) + $1/50$ Calcine Product + $20/50$ (Mixed Metal Nitrates) + $8.1/50$ (Gadolinium Nitrate) = 1.946

Sodium Hypochlorite

Applying Environmental properties additions aggregation as inventory:

$15/100$ (Sodium Hypochlorite) + $30/100$ (Hydrazine Nitrate) + $45/100$ (Hydroxylamine Nitrate) + $85/100$ (Sodium Nitrite) = 1.75

4 Manner in which substance(s) are to be kept and used

For each substance, category or description of substance, covered by the application, provide the following information, referring to the substance location plan where appropriate.

“vessel” means any container designed or adapted to contain hazardous substances which is affixed to the land, and includes a container which forms part of plant or machinery which is affixed to the land but does not include a pipeline.

“Buried” or “Mounded” vessel includes a vessel which is only partially buried or partially mounded.

“moveable container” means any container designed or adapted to contain hazardous substances other than a vessel.

- (a) Tick one box below to show whether the substance(s) will be present for storage only **or** will be stored and involved in a manufacturing, treatment or other industrial process:

Table B

<i>Substance including Part no. in Sch. 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3</i>	<i>Storage only</i>	<i>Stored and involved in an industrial process</i>
Hydrogen - Part 2 – 15, Part 1 - P2		
LPG - Part 2 – 18, Part 1 - P2		✓
Acetylene - Part 2 – 19, Part 1 - P2		
Oxygen - Part 2 – 25, Part 1 - P4		✓
Petroleum Products - Part 2 – 34 Part 1 - P5c, E2		✓
Sodium Hypochlorite - Part 2 – 41, Part 1 - E1		✓
Nitric Acid - Part 1 - H2		✓
Nitrogen Dioxide - Part 1 – H1, P4		
Sodium Nitrite - Part 1 - H2, P8, E1		✓
Hydrazine Nitrate - Part 1 - H2, E1		✓
Barium Nitrate - Part 1 - P8		✓
Gadolinium Nitrate - Part 1 - P8		✓
Calcine Product - Part 1 - P8		✓
Mixed Metal Nitrates - Part 1 - P8		✓
Sodium Nitrate - Part 1 - P8		✓
Hydroxylamine Nitrate - Part 1 - E1		✓

Note: Hydrogen, Acetylene and Nitrogen Dioxide were previously stored or involved in industrial processes on site but are not currently but may be stored/used in the future.

Nitrogen Dioxide is a potential bi-product of a number of accident scenarios involving Nitric Acid.

(b) For each vessel to be used for **storing** the substance(s) give the following information:

Table C (i)

<i>Vessel No*</i>	<i>Substance including Part no. in Sch. 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3</i>	<i>Installed above ground† (Yes/No)</i>	<i>Buried (Yes/No)</i>	<i>Mounded (Yes/No)</i>	<i>Maximum capacity (cubic metres)</i>	<i>Highest vessel design temperature °C</i>	<i>Highest vessel design pressure (bar absolute)</i>
A17 Pipeline	Natural Gas - Part 2, 18, Part 1 P2	Yes Not Bunded	Yes (Buried in parts above ground in other places)	No	21.36	60	34
A19	Oxygen - Part 2, 25, Part 1 - P2	Yes Not Bunded	No	No	47.18	50	16.5
A20	Oxygen - Part 2, 25, Part 1 - P2	Yes Not Bunded	No	No	60.39	50	13.62
A23 & A24	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	45	Ambient	Atmospheric
A25 & A26	Petroleum Products - Part 2, 34 (a)	No Not Bunded	Yes	No	45	Ambient	Atmospheric
A27, A28, A29 & A30	Petroleum Products - Part 2, 34 (c)	No	Yes	No	600	Ambient	Atmospheric
A31, A32, A33 & A34	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	11.2	Ambient	Atmospheric
A35 & A36	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	25	Ambient	Atmospheric
A39	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	22.5	Ambient	Atmospheric
A40	Petroleum Products - Part 2, 34 (b)	Yes Bunded	No	No	50	Ambient	Atmospheric

A41	Petroleum Products - Part 2, 34 (b)	Yes Bunded	No	No	4.5	Ambient	Atmospheric
A42	Petroleum Products - Part 2, 34 (b)	Yes Bunded	No	No	1	Ambient	Atmospheric
A43	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	23.10	65	1.7
A114	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	474	Ambient	Atmospheric
A115	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	471.2	Ambient	Atmospheric
A116	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	469	Ambient	Atmospheric
A117	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	57	Ambient	Atmospheric
A118	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	57	Ambient	Atmospheric
A119	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	57	Ambient	Atmospheric
A120	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	57	Ambient	Atmospheric
A121	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	57	Ambient	Atmospheric
A122	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	57	Ambient	Atmospheric
A123	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	57	Ambient	Atmospheric

A124	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	57	Ambient	Atmospheric
A125	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	57	Ambient	Atmospheric
A126	Petroleum Products - Part 2, 34 (c)	Yes Bunded	No	No	57	Ambient	Atmospheric
A45	Sodium Hypochlorite - Part 2 – 41, Part 1 - E1	Yes Bunded	No	No	2.9	Ambient	Atmospheric
A46	Sodium Hypochlorite - Part 2 – 41, Part 1 - E1	Yes Bunded	No	No	1.0	Ambient	Atmospheric
A47	Hydrazine Nitrate - Part 1, H2, E1	Yes Bunded	No	No	2.44	50	Atmospheric
A48	Hydrazine Nitrate - Part 1, H2, E1	Yes Bunded	No	No	0.5	20	1.111
A103	Hydrazine Nitrate - Part 1, H2, E1	Yes Bunded	No	No	2	40	Atmospheric
A104	Hydrazine Nitrate - Part 1, H2, E1	Yes Bunded	No	No	2	40	Atmospheric
A50	Nitric Acid - Part 1, H2	Yes Bunded	No	No	1.2	40	Atmospheric
A51	Nitric Acid - Part 1, H2	Yes Bunded	No	No	1.2	40	Atmospheric
A52	Nitric Acid - Part 1, H2	Yes Bunded	No	No	3.1	32	2.18
A53	Nitric Acid - Part 1, H2	Yes Bunded	No	No	4.78	150	4.59

A54	Nitric Acid - Part 1, H2	Yes Bunded	No	No	7.09	Ambient	Atmospheric
A55	Nitric Acid - Part 1, H2	Yes Bunded	No	No	610	Ambient	Atmospheric
A56	Nitric Acid - Part 1, H2	Yes Bunded	No	No	1.3	Ambient	Atmospheric
A57	Nitric Acid - Part 1, H2	Yes Bunded	No	No	1.7	Ambient	Atmospheric
A58	Nitric Acid - Part 1, H2	Yes Bunded	No	No	1.22	Ambient	Atmospheric
A59	Nitric Acid - Part 1, H2	Yes Bunded	No	No	3.68	Ambient	Atmospheric
A60	Nitric Acid - Part 1, H2	Yes Bunded	No	No	6	Ambient	Atmospheric
A61	Nitric Acid - Part 1, H2	Yes Bunded	No	No	30	Ambient	Atmospheric
A62	Nitric Acid - Part 1, H2	Yes Bunded	No	No	3.5	Ambient	Atmospheric
A63	Nitric Acid - Part 1, H2	Yes Bunded	No	No	18.65	Ambient	Atmospheric
A64	Nitric Acid - Part 1, H2	Yes Bunded	No	No	8.15	50	Atmospheric
A65	Nitric Acid - Part 1, H2	Yes Bunded	No	No	1.08	20	Atmospheric
A66	Nitric Acid - Part 1, H2	Yes Bunded	No	No	1.18	30	1.32

A67	Nitric Acid - Part 1, H2	Yes Bunded	No	No	7.2	45	1.45
A68	Nitric Acid - Part 1, H2	Yes Bunded	No	No	7.2	45	1.45
A69	Nitric Acid - Part 1, H2	Yes Bunded	No	No	7.2	45	1.45
A70	Nitric Acid - Part 1, H2	Yes Bunded	No	No	5.5	45	Atmospheric
A71	Nitric Acid - Part 1, H2	Yes Bunded	No	No	2	40	Atmospheric
A72	Nitric Acid - Part 1, H2	Yes Bunded	No	No	6.61	50	Atmospheric
A73	Nitric Acid - Part 1, H2	Yes Bunded	No	No	6.61	50	Atmospheric
A74	Nitric Acid - Part 1, H2	Yes Bunded	No	No	6.61	50	Atmospheric
A75	Nitric Acid - Part 1, H2	Yes Bunded	No	No	0.92	60	Atmospheric
A76	Nitric Acid - Part 1, H2	Yes Bunded	No	No	0.825	30	Atmospheric
A77	Nitric Acid - Part 1, H2	Yes Bunded	No	No	0.032	30	Atmospheric
A78	Nitric Acid - Part 1, H2	Yes Bunded	No	No	5.82	25	Atmospheric
A79	Nitric Acid - Part 1, H2	Yes Bunded	No	No	38	100	6.8

A80	Nitric Acid - Part 1, H2	Yes Bunded	No	No	11.7	80	5.6
A81	Nitric Acid - Part 1, H2	Yes Bunded	No	No	17	80	4
A82	Nitric Acid - Part 1, H2	Yes Bunded	No	No	17	80	4
A83	Nitric Acid - Part 1, H2	Yes Bunded	No	No	17	80	4
A84	Nitric Acid - Part 1, H2	Yes Bunded	No	No	17	80	4
A85	Nitric Acid - Part 1, H2	Yes Bunded	No	No	1.7	80	5.6
A86	Nitric Acid - Part 1, H2	Yes Bunded	No	No	17	80	5.6
A87	Nitric Acid - Part 1, H2	Yes Bunded	No	No	1.7	80	5.6
A88	Nitric Acid - Part 1, H2	Yes Bunded	No	No	17	80	5.6
A89	Nitric Acid - Part 1, H2	Yes Bunded	No	No	17	80	5.6
A91	Nitric Acid - Part 1, H2	Yes Bunded	No	No	0.03	40	0.5
A92	Nitric Acid - Part 1, H2	Yes Bunded	No	No	12.7	40	0.43
A93	Nitric Acid - Part 1, H2	Yes Bunded	No	No	0.17	40	0.4

A94	Sodium Nitrite - Part 1, H2, P8, E1	Yes Bunded	No (Tank Capacity Limited)	No	40	Ambient	Atmospheric
A95	Sodium Nitrite - Part 1, H2, P8, E1	Yes Bunded	No	No	1.2	Ambient	Atmospheric
A96	Sodium Nitrite - Part 1, H2, P8, E1	Yes Bunded	No	No	1.9	Ambient	Atmospheric
A97	Sodium Nitrite - Part 1, H2, P8, E1	Yes Bunded	No	No	6.6	50	Atmospheric
A98	Sodium Nitrite - Part 1, H2, P8, E1	Yes Bunded	No	No	8.15	50	Atmospheric
A99	Sodium Nitrite - Part 1, H2, P8, E1	Yes Bunded	No	No	4	45	Atmospheric
A100	Sodium Nitrite - Part 1, H2, P8, E1	Yes Bunded	No	No	0.3	50	Atmospheric
A110	Mixed Metal Nitrates - Part 1, P8	Yes Bunded	No	No	20	Ambient	Atmospheric
A102	Sodium Nitrate - Part 1, P8	Yes Bunded	No	No	2	Ambient	Atmospheric
A106	Hydroxylamine Nitrate - Part 1, E1	Yes Bunded	No	No	2.4	50	Atmospheric
A55 & A94 fault scenarios	Nitrogen Dioxide / Nitric Oxide - Part 3, H1	N/A	N/A	N/A	N/A	N/A	N/A

* identify by reference to substance location plan

† if "Yes", specify whether or not it will be provided with full secondary containment

(c) For each substance, category, or description of substance, state the largest size (capacity in cubic metres) of any **moveable** container(s) to be used for that substance, category, or description of substances:

Table C (ii)

<i>Substance including Part no. in Sch. 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3</i>	<i>Storage area on site*</i>	<i>Maximum capacity (cubic metres) of individual moveable containers</i>
LPG - Part 2, 18, Part 1 - P2	A2	0.61
LPG - Part 2, 18, Part 1 - P2	A3, A4	0.61
LPG - Part 2, 18, Part 1 - P2	A5	0.61
LPG - Part 2, 18, Part 1 - P2	A9, A10	0.61
LPG - Part 2, 18, Part 1 - P2	A11, A15	0.53
LPG - Part 2, 18, Part 1 - P2	A12, A13, A14, A16	0.53
Oxygen - Part 2, 25, Part 1 - P2	A22	0.05
Hydrazine Nitrate - Part 1, H2, E1	A49	1
Barium Nitrate - Part 1, P8	A101	0.0077
Calcine Product - Part 1 - P8	A109	1
Sodium Hypochlorite - Part 2 – 41, Part 1 - E1	A44	1
Sodium Hypochlorite - Part 2 – 41, Part 1 - E1	A7, A8 & A128	0.0315
Sodium Nitrate - Part 1, P8	A6	0.0315
Sodium Nitrate - Part 1, P8	A127	1
Hydroxylamine Nitrate - Part 1, E1	A105	1

* identify by reference to substance location plan

- (d) Where a substance, category or description of substance is to be used in a **manufacturing, treatment or other industrial process(es)**, give a general description of the process(es), describe the major items of plant which will contain the substance(s); and state the maximum quantity (in tonnes) which is liable to be present in the major items of the plant, and the maximum temperature (°C) and pressure (bar absolute) at which the substance, category or description of substance is liable to be present:

Table D

<i>Substance including Part no. in Schedule 1 to the Regs, and entry no. if Part 2, category if Part 1, identity if Part 3</i>	<i>Description of process(es)</i>	<i>Major items of plant*</i>	<i>Max. quantity (tonnes)</i>	<i>Max. temp. (°C)</i>	<i>Max. pressure (bar absolute)</i>
LPG - Part 2, 18, Part 1 - P2	Decommissioning Activities	A2	0.22	Ambient	8.96
LPG - Part 2, 18, Part 1 - P2	Nuclear Fuel Reprocessing & Support Activities	A3, A4	0.20	Ambient	Atmospheric
LPG - Part 2, 18, Part 1 - P2	Nuclear Fuel Reprocessing & Support Activities	A5	0.05	Ambient	Atmospheric
LPG - Part 2, 18, Part 1 - P2	Nuclear Fuel Reprocessing & Support Activities	A9, A10	0.06	Ambient	2
LPG - Part 2, 18, Part 1 - P2	Nuclear Fuel Reprocessing & Support Activities	A11, A15	1.34	30	200
LPG - Part 2, 18, Part 1 - P2	Nuclear Fuel Reprocessing & Support Activities	A12, A13, A14, A16	1.78	30	200
Natural Gas - Part 2, 18, Part 1 P2	Steam Generation	A17	0.51	40	34
Oxygen - Part 2, 25, Part 1 - P4	Nuclear Fuel Reprocessing	A19	57.64	50	16.5
Oxygen - Part 2, 25, Part 1 - P4	Nuclear Fuel Reprocessing	A20	67.83	50	11
Oxygen - Part 2, 25, Part 1 - P4	Nuclear Fuel Reprocessing	A22	0.05	Ambient	230
Petroleum Products - Part 2, 34 (c)	Transport	A23, A24	38.50	Ambient	Atmospheric

Petroleum Products - Part 2, 34 (a)	Transport	A25, A26	32.27	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical/Heat Generation and Transport	A27, A28, A29, A30	504.44	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical/Heat Generation and Transport	A31, A32, A33, A34	9.40	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical/Heat Generation and Transport	A35, A36	21.00	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical/Heat Generation	A114	412.38	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical/Heat Generation	A115	409.94	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical/Heat Generation	A116	417.43	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical Generation	A117	47.90	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical Generation	A118	47.90	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical Generation	A119	47.90	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical Generation	A120	47.90	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical Generation	A121	47.90	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical Generation	A122	47.90	Ambient	Atmospheric

Petroleum Products - Part 2, 34 (c)	Electrical Generation	A123	47.90	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical Generation	A124	47.90	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical Generation	A125	47.90	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (c)	Electrical Generation	A126	47.90	Ambient	Atmospheric
Petroleum Products - Part 2, 35 (c)	Nuclear Fuel Reprocessing	A39	20.00	Ambient	Atmospheric
Petroleum Products - Part 2, 36 (b)	Nuclear Fuel Reprocessing	A40	42.89	Ambient	Atmospheric
Petroleum Products - Part 2, 37 (b)	Nuclear Fuel Reprocessing	A41	3.68	Ambient	Atmospheric
Petroleum Products - Part 2, 34 (b)	Nuclear Fuel Reprocessing	A42	0.80	Ambient	Atmospheric
Petroleum Products - Part 2, 35 (c)	Nuclear Fuel Reprocessing	A43	20.33	Ambient	Atmospheric
Sodium Hypochlorite - Part 2 – 41	Disinfection and control of legionella	A44	2.16	Ambient	Atmospheric
Sodium Hypochlorite - Part 2 – 41, Part 1 - E1	Disinfection and control of legionella	A45	4.41	Ambient	Atmospheric
Sodium Hypochlorite - Part 2 – 41, Part 1 - E1	Disinfection and control of legionella	A46	0.5	Ambient	Atmospheric
Sodium Hypochlorite - Part 2 – 41, Part 1 - E1	Disinfection and control of legionella	A128	1.0	Ambient	Atmospheric

Nitrogen Dioxide - Part 1, H1, P4	Storage	A112	2.00	50	43
Nitrogen Dioxide - Part 1, H1, P4	Nuclear Fuel Reprocessing	A113	1.00	50	43
Hydrazine Nitrate - Part 1, H2, E1	Nuclear Fuel Reprocessing	A47	2.86	50	Atmospheric
Hydrazine Nitrate - Part 1, H2, E1	Nuclear Fuel Reprocessing	A48	0.59	20	1.111
Hydrazine Nitrate - Part 1, H2, E1	Storage	A49	12.87	Ambient	Atmospheric
Hydrazine Nitrate - Part 1, H2, E1	Nuclear Fuel Reprocessing	A103	2.46	40	Atmospheric
Hydrazine Nitrate - Part 1, H2, E1	Nuclear Fuel Reprocessing	A104	2.34	40	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A50	1.70	Ambient	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A51	1.70	Ambient	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A52	4.40	Ambient	2.18
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A53	6.70	105	2.18
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A54	9.69	Ambient	Atmospheric
Nitric Acid - Part 1, H2	Storage	A55	830.00	Ambient	Atmospheric

Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A56	1.78	Ambient	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A57	2.06	Ambient	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A58	1.50	Ambient	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A59	5.05	Ambient	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A60	8.20	Ambient	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A61	40.95	Ambient	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A62	3.5	Ambient	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A63	18.65	Ambient	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A64	11.30	50	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A65	1.50	20	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A66	1.64	30	1.32
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A67	9.00	45	1.45
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A68	9.00	45	1.45

Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A69	9.00	45	1.45
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A70	6.55	45	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A71	2.30	40	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A72	9.17	50	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A73	9.17	50	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A74	9.17	50	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A75	1.15	60	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A76	0.96	30	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A77	0.04	30	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A78	7.25	25	Atmospheric
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A79	46.00	100	6.8
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A80	14.20	80	5.6
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A81	20.60	80	4

Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A82	20.60	80	4
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A83	20.60	80	4
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A84	20.60	80	4
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A85	2.06	80	5.6
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A86	20.60	80	5.6
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A87	2.06	80	5.6
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A88	20.60	80	5.6
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A89	20.60	80	5.6
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A91	0.04	40	0.5
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A92	17.20	40	0.43
Nitric Acid - Part 1, H2	Nuclear Fuel Reprocessing	A93	0.23	40	0.4
Sodium Nitrite - Part 1, H2, P8, E1	Storage	A94	52.34	Ambient	Atmospheric
Sodium Nitrite - Part 1, H2, P8, E1	Nuclear Fuel Reprocessing	A95	1.65	Ambient	Atmospheric

Sodium Nitrite - Part 1, H2, P8, E1	Nuclear Fuel Reprocessing	A96	2.43	Ambient	Atmospheric
Sodium Nitrite - Part 1, H2, P8, E1	Nuclear Fuel Reprocessing	A97	9.19	50	Atmospheric
Sodium Nitrite - Part 1, H2, P8, E1	Nuclear Fuel Reprocessing	A98	10.20	50	Atmospheric
Sodium Nitrite - Part 1, H2, P8, E1	Nuclear Fuel Reprocessing	A99	5.11	45	Atmospheric
Sodium Nitrite - Part 1, H2, P8, E1	Nuclear Fuel Reprocessing	A100	0.60	50	Atmospheric
Barium Nitrate - Part 1, P8	Nuclear Fuel Reprocessing Stored prior to use	A101	2.70	Ambient	Atmospheric
Calcine Product - Part 1, P8	Nuclear Fuel Reprocessing R&D	A109	1.00	Ambient	Atmospheric
Mixed Metal Nitrates - Part 1, P8	Nuclear Fuel Reprocessing R&D	A110	20.00	Ambient	Atmospheric
Sodium Nitrate - Part 1, P8	Corrosion inhibition of cooling water systems	A102	3.00	Ambient	Atmospheric
Sodium Nitrate - Part 1, P8	Storage	A6	1.125	Ambient	Atmospheric
Sodium Nitrate - Part 1, P8	Corrosion inhibition of cooling water systems	A127	3.00	Ambient	Atmospheric
Hydroxylamine Nitrate - Part 1, E1	Storage	A105	24.57	Ambient	Atmospheric
Hydroxylamine Nitrate - Part 1, E1	Nuclear Fuel Reprocessing	A106	2.85	50	Atmospheric

Nitrogen Dioxide / Nitric Oxide - Part 3, H1	Intermixing - Loss of Control	A55 & A94			
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* identify by reference to substance location plan

5 Additional Information

- (a) If you have an existing PHS consent(s) as referred to in Table A, **attach a copy of each consent** to this application.
- (b) **List the maps or plans** or any explanatory scale drawings of plant/buildings submitted with this application (**as a minimum submit a site map and a substance location plan** – see **Notes** below).

Sellafield Site Map – scale 1:10,000

Substance Location Plan - scale 1:2,500 identifying areas of land intended to be used for the storage of the substances and where the substances are to be used in nuclear reprocessing, remediation and associated processes. Location of the major storage vessels, identification of access points to and from the land and set routes to off-load points for deliveries.

- (c) Provide a brief overview description of the **main activities** carried out or proposed to be carried out on the land to which the application relates.

Sellafield Limited operates a number of processes on the Sellafield nuclear licensed site some of which involve the storage and use of hazardous substances. Following discussions with the relevant regulator (HSE), Sellafield Ltd wishes to apply for a variation to the existing Hazardous Substances Consent.

The substances, which are the subject of the application, have been used on the Sellafield site for many years. Accordingly, there is minimal change to the types or volumes of hazardous substances used on the Sellafield site marked by the submission of this application. This application is formalisation of the HSE request to include further hazardous substances used at the Sellafield site on the consent.

The application is intended to address four things:

- i) Seek a consent for the storage of nitric acid on the site. This is not a new activity and has been the case for more than 60 years and pre-dates the planning regulation requirements. The consent is being sought now, as historically Sellafield Ltd believed it had “deemed consent” for nitric acid as its presence on the site in the current quantities predated the regulations. The question of consent for this material has come to light recently due to a question being raised by the Control of Major Accident Hazards (COMAH) Competent Authority (CA) during a CA review of the recently submitted Sellafield COMAH Safety Report. The report was produced by Sellafield Ltd following the Sellafield site becoming an “Upper Tier COMAH Site” due to the reclassification of the hazard category for nitric acid. Hence, Sellafield Ltd now wishes to apply for a consent for this material.

The nitric acid is being used to support major hazard reduction activities across the Sellafield site, including:

- The MAGNOX Operating Programme (MOP) which covers the reprocessing of irradiated MAGNOX fuel from the first generation of UK civil nuclear power stations. This process converts the fuel into a safer and more manageable form suitable for long term storage. This programme is currently due to conclude in 2022.
- Conversion of highly active waste from a liquid form into sold vitrified glass, making the waste safer and more manageable in the long term. This process is likely to continue until about 2028.
- Post Operational Clean Out (POCO) of redundant plants and facilities, prior to them being put into safe care and maintenance or being decommissioned. This will be an on-going programme for some years to come.

ii) To seek an increase to the consent for the quantity of sodium hypochlorite held on the Sellafield Site. The material is predominantly used in the disinfection of cooling water systems and its use has increased due to improvements made to legionella management regimes across the site.

iii) To seek an increase to the consent for the quantity of sodium nitrate held on the Sellafield Site. The material is used as an additive to cooling water systems as a corrosion inhibitor, and has seen an increased usage due to the commissioning of new plant which are required to support major hazard reduction programmes such as the processing and vitrification of highly active wastes.

Whilst it is recognised that these substances are hazardous in nature, they have been stored, managed and used safely on the Sellafield site for many years. They are essential for enabling major hazard reduction programmes and, in the case of sodium hypochlorite, for managing the risk of legionella to both persons on-site and off-site from cooling water systems in plants which are used to support major hazard reduction activities.

- (d) Provide details of how each relevant substance is proposed to be transported to and from the land to which the application relates, for example the size and frequency of vehicle deliveries, the size or maximum flow rate of pipeline imports/exports.

Substance including Part number in Schedule 1 to the Regulations, and entry number if Part 2, category if Part 1, identity if Part 3	How, and other details such as frequency and quantity, transported to and from the land to which the application relates	
	Transported to site	Transported from site
Hydrogen - Part 2 – 15	Not currently used on site	N/A
LPG Part 2 – 18	Provided as and when required to replenish stock	N/A
Natural Gas - Part 2 – 18	Pipeline approx. 44000 ltrs/min	N/A
Acetylene - Part 2 – 19	Not currently used on site	N/A

Oxygen Part 2 – 25	13,000 m ³ , 2-3 deliveries / month via tanker to B500	N/A
Petroleum Products - Part 2 – 34 (c) (A114, A115 & A116)	38,000 ltrs, approx. 6/year via tanker	N/A
Petroleum Products - Part 2 – 34 (c) (A23, A24)	Diesel 15,000 ltrs, approx. 1/month via tanker	N/A
Petroleum Products - Part 2 – 34 (a) (A25, A26)	Petrol 6,000 ltrs, approx. 2/year via tanker	N/A
Petroleum Products - Part 2 – 34 (c) (A27, A28, A29, A30, A31, A32, A33, A34)	35,000 ltrs, approx. 10 deliveries / year via tanker	N/A
Petroleum Products - Part 2 – 34 (c) (A117, A118, A119, A120, A121, A122)	60,000 ltrs / month via tanker	N/A
Petroleum Products - Part 2 – 34 (c) (A123, A124, A125, A126)	40,000 ltrs / month via tanker	N/A
Sodium Hypochlorite - Part 2 – 41	1245KG 10 deliveries / annum via pressure bin	N/A
Sodium Hypochlorite - Part 2 – 41, Part 1 - E1	5000KG / month via HGV to B927	N/A
Nitric Acid - Part 1 - H2	28 tonne, 5 deliveries / week, via tanker to B500	N/A
Nitrogen Dioxide - Part 1 – H1, P4	Not currently used on site	N/A
Sodium Nitrite - Part 1 - H2, P8, E1	28 tonne, 1 delivery / month, via tanker to B500	N/A
Hydrazine Nitrate - Part 1 - H2, E1	Not currently used on site	N/A
Barium Nitrate - Part 1 - P8	Not ordered since 2019	N/A
Gadolinium Nitrate - Part 1 - P8	No longer purchased	N/A
Calcine Product - Part 1 - P8	Product of a process stored on site	N/A
Metal Mixed Nitrates - Part 1 - P8	10 m ³ / annum	N/A
Sodium Nitrate - Part 1 - P8	1068KG, 6 deliveries /annum via pressure bin to B376	N/A
Sodium Nitrate - Part 1 - P8	300KG / month via HGV to B927	N/A
Hydroxylamine Nitrate - Part 1 - E1	Not currently used on site	N/A

- (e) Provide details of the vicinity of the land to which the application relates, where such details are relevant to the risks or consequences of a major accident (relevant details include numbers of people in neighbouring developments that could be affected by a major accident and details about environmentally sensitive receptors).

The land immediately surrounding the site is predominantly farmland and there are a number of farm buildings and smallholdings. The River Calder flows north east to south west through the site to the sea. At a point south of to the village of Braystones, at an elevation of 20m above ordnance datum, the River Ehen begins to flow south-east, parallel to the coast, for a distance of approximately 3 km towards High Sellafeld. The River Ehen flows adjacent and parallel to the southern boundary of the site until it reaches the confluence with the River Calder.

The PIZ (Public Information Zone) is 1.1 km from the centre of the Inactive Tank Farm (A94). Within this zone there is a population of approximately 15 people off-site.

There are no statutory designated sites of nature conservation interest within 2 km of the Sellafeld site. South of the site there is a managed habitat for Natterjack Toads, a European Protected Species.

- (f) Provide a brief overview of the measures taken or proposed to be taken to limit the consequences of a major accident.

Sellafeld Ltd ensures compliance with chemical industry “relevant good practice” and the COMAH regulations. The Site has a COMAH safety report covering all the plant areas which have chemical major accident hazards. The implementation of the safeguards contained in this report seek to ensure that the risk of a major accident hazard is reduced to levels that are as low as reasonably practicable. The company also complies with all relevant legislation such as the Control of Substances Hazardous to Health (COSHH) Regulations and the Dangerous Substances and Explosive Atmospheres (DSEAR) Regulations as well as a series of environmental authorisations and permits.

All materials are transported in compliance with the Carriage of Dangerous Goods and Transportable of Pressure Equipment Regulations (CDG) and the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) requirements. Likewise, should any of these materials be transported off the site as surplus material or waste the same standards apply.

- (g) Give any further information which you consider to be relevant to the determination of this application. (For example, details about any exempted established substances on site or a copy of any notification about ‘other establishments’/exempted established substances if already submitted).

Natural Gas and Nitrogen Dioxide / Nitric Oxide are considered to be ‘established substances’ under the terms of Schedule 2 paragraphs 13 and 14 (noting the change to the pipeline exemption available in the 1992 Regulations).

Natural Gas has been located on site for approximately 30 years (and during the “establishment period” as per the 2015 Regulations) and the quantities do not exceed the maximum quantity of the relevant substances which was present on, over, or under the land at any one time during the establishment period.

Nitrogen Dioxide could be generated through fault scenarios involving nitric acid which have existed over the past approximately 60 years and the estimated quantities which could be produced do not exceed the maximum quantity of the relevant substances which was present on, over, or under the land at any one time during the establishment period.

I/We hereby apply for hazardous substances consent in accordance with the proposals described in the application

Signed
.....

on behalf of ... Sellafield Limited
(insert name of person in control of the land if different to applicant)

Date 1st July 2022

To be accompanied by the notices and certificates required by regulations 6 and 7 of the Regulations.

Notes

“Site map” is a map, reproduced from, or based on, an Ordnance Survey map with a scale of not less than 1:10,000, which identifies the land to which the application relates and shows National Grid lines and reference numbers.

“Substance location plan” is a plan of the land to which the application relates, drawn to a scale of not less than 1:2,500, which identifies-

- (a) any area of land intended to be used for the storage of the substance;
- (b) where the substance is to be used in a manufacturing, treatment or other industrial process, the location of the major items of plant involved in that process in which the substance will be present; and
- (c) access points to and from the land.