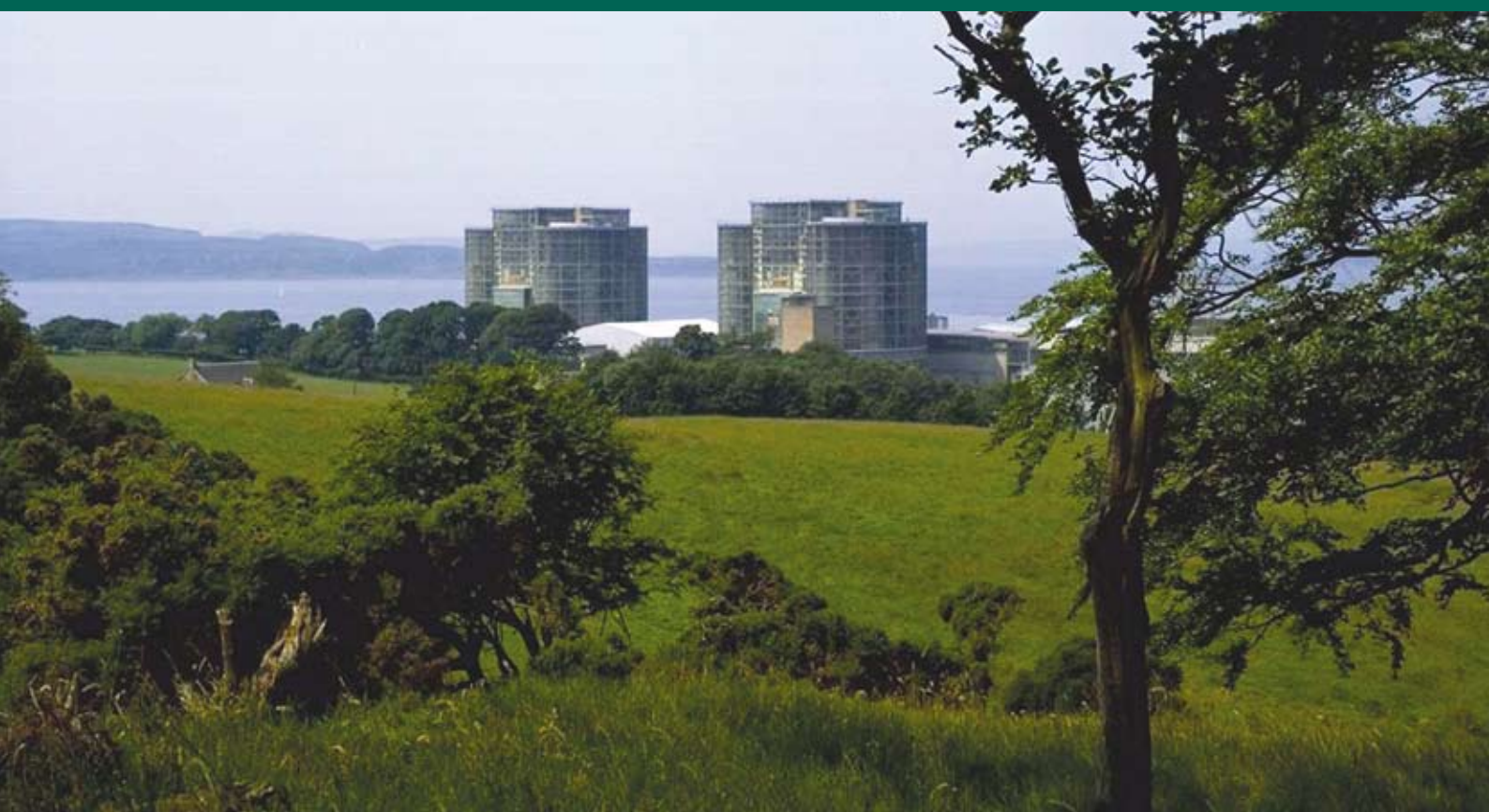


Hunterston A Site Summary

Lifetime Plan

PSWBS Site ref.: **25**

2006/07 Lifetime Plan



Lifetime Plan Overview

The Lifetime Plan describes all the activities in terms of scope, schedule and cost to be undertaken on the Hunterston A site in the remaining period of its lifecycle from 1 April 2006 to the end of Final Site Clearance.

Reduction in hazard and environmental remediation is the primary focus of the Hunterston A team. The scope of work proposed in this Lifetime Plan reflects this prioritisation and includes all activities necessary to secure the optimum route that will lead, ultimately, to Final Site Clearance (FSC).

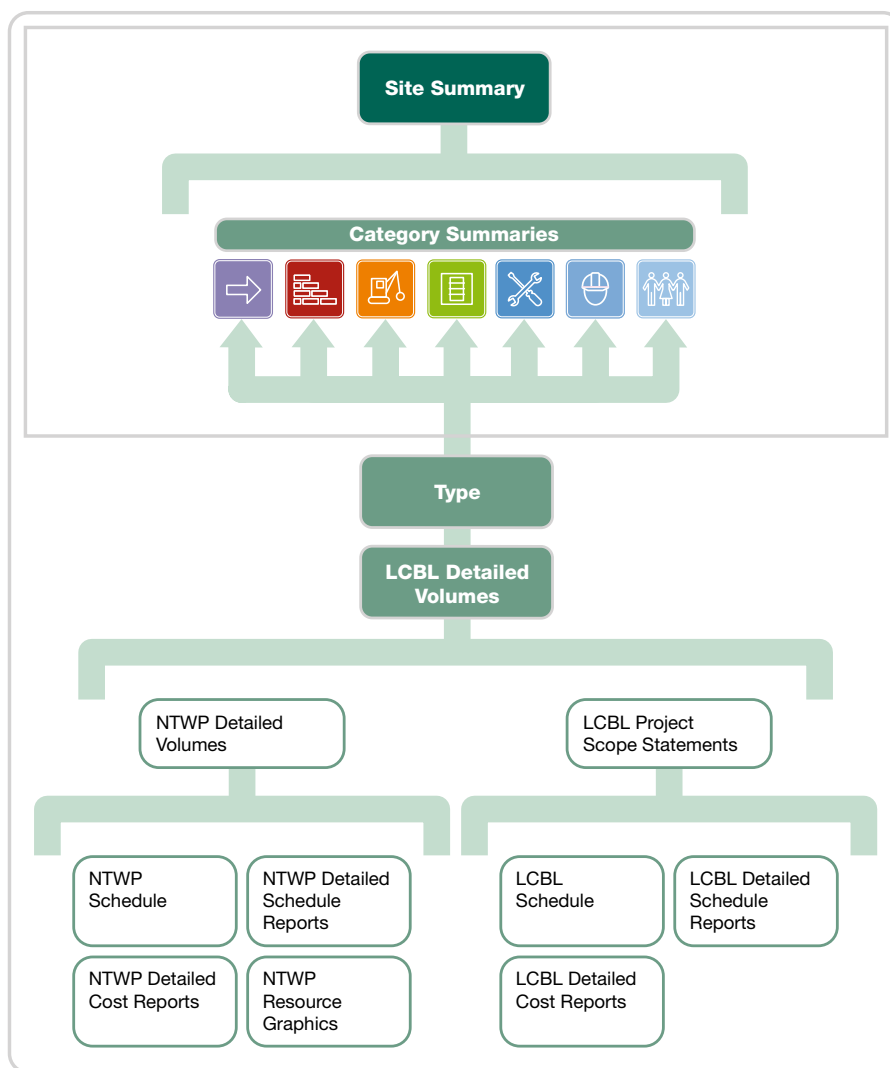
The Lifetime Plan encompasses the information formally presented separately in the Hunterston A Near Term Work Plan (NTWP), and the Lifecycle Baseline (LCBL). This Lifetime Plan encompasses the NTWP 2006 and updates information presented in LCBL 2005.

The NTWP element addresses the work planned to be undertaken from April 2006 to March 2009 and the LCBL element describes the work from April 2009 to FSC in 2090. The overall strategy is in line with the proposals that were subject to Quinquennial Review by the Health and Safety Executive and reported by them in 2002 as being 'appropriate'.

The Nuclear Decommissioning Authority (NDA) funding limits are used as the basis for the Lifetime Plan.

This Lifetime Plan Site Summary describes the activities in terms of scope, schedule and cost under this category on the Hunterston A site in the remaining period of its lifecycle from 1 April 2006 to FSC.

Figure 25-1 – Hunterston A Lifetime Plan structure



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Site Overview

Hunterston A is the site of a twin reactor Magnox power station that is now shut down and being decommissioned. It is located 30 miles south-west of Glasgow on the Clyde coast.

Figure 25-2 – Hunterston A key facts

Basics	Location:	Ayrshire
	Nearby towns/cities:	West Kilbride (2½ miles), Glasgow (30 miles)
	Site area:	36 hectares
	Number of current employees:	135 core/41 agency
Key dates	Construction start:	1957
	Construction end:	1964
	Start operation:	1964
	End operation:	2090
	Defuelling start:	1990
	Defuelling end:	1995
	Care & Maintenance Preparations start:	1995
	Care & Maintenance Preparations end:	2016
Plant description	Reactor type:	Magnox
	Number of reactors:	2
	Number of fuel channels per reactor:	3,284
	Number of fuel elements per channel:	10
	Number of control rods:	128
	Fuel material:	Natural uranium
	Reactor coolant:	Carbon dioxide
	Number of turbo generators:	6
	Electrical output – design (net):	360 MW
	Electrical output – current (net):	300 MW
	Station lifetime output to date:	73 TWh
Previous operators:	South of Scotland Electricity Board/Magnox Electric/BNFL	
Adjacent nuclear power station:	British Energy's Hunterston B	
Unique factor	Unlike any other Magnox power station, Hunterston A refuelled from the bottom of the reactors.	



Part of the immediate surroundings is designated as a Site of Special Scientific Interest.

Figure 25-3 – Prioritisation logic

Key Phase	Focus Areas	NDA Priority Area			Current Site Focus/Priority
		1	2	3	
1. Generation	Statutory requirements	✓	✓		Past
	Generation		✓		
	Generation throughput improvements			✓	
2. Defuelling	Statutory requirements	✓	✓		
	Defuelling preps		✓		
	Defuelling		✓		
3. Care & Maintenance Preparations	Statutory requirements	✓			1
	Waste removal or packaging			✓	2
	Facility clean-up			✓	3
4. Care & Maintenance	Statutory requirements	✓			1
	Monitoring			✓	3
	Remedial work			✓	3
5. Final Site Clearance	Statutory requirements	✓			Future
	Demolition and Clearance			✓	
	Land Remediation			✓	

1. Non-discretionary 2. Operations 3. Discretionary

This table shows the major current and near future activities for this site and how they relate to the NDA led National Prioritisation Working Group priority areas.

Priority area 1, Non-discretionary work is that necessary to maintain legal compliance and prescribed and agreed levels of safety and security.

Priority area 2, Operations activities are based on electricity generation commitments.

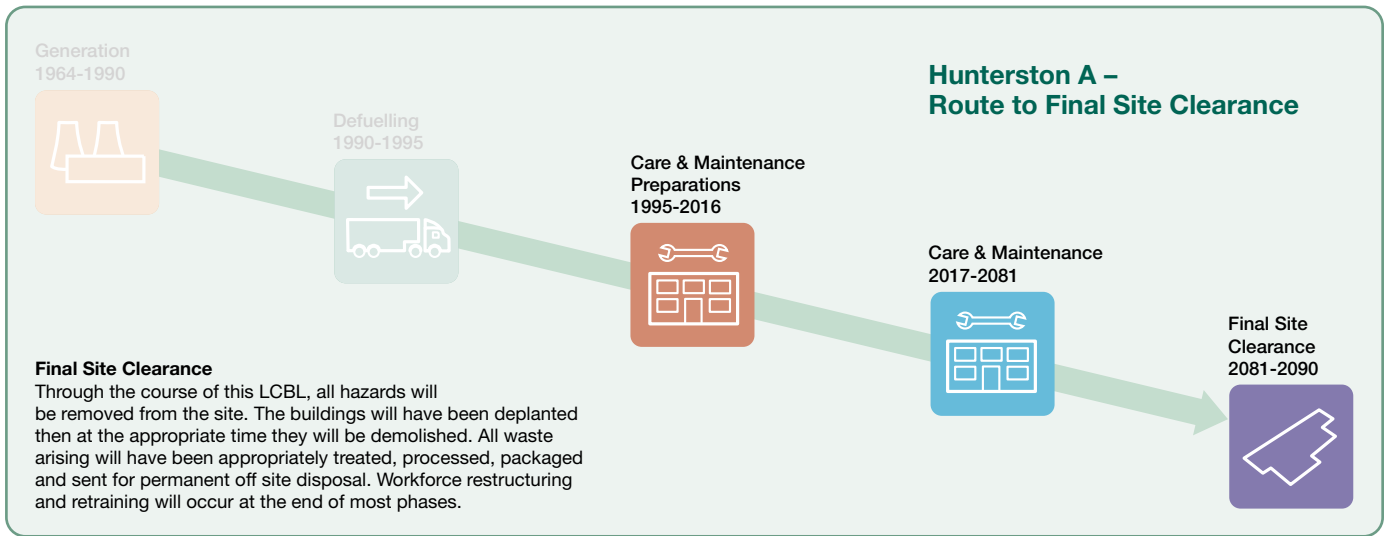
Priority area 3, Discretionary work is that which will allow achievement and acceleration of decommissioning and all other work.

Current site focus/priority indicates the priority that each focus area will have when funds are being allocated.

Hunterston A Lifecycle Baseline Key Phases

The lifecycle of Hunterston A can be described in terms of five time-based phases. Hunterston A is midway through the third phase, Care & Maintenance Preparations phase, of the site decommissioning programme.

Figure 25-4 – Route to Final Site Clearance



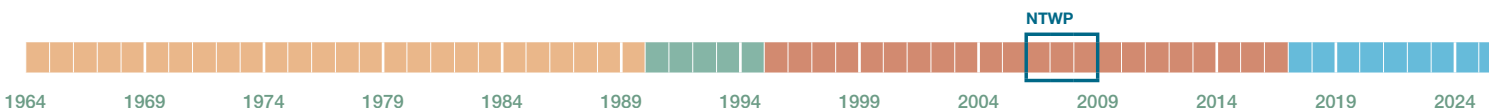
Hunterston A power station rated at 360MW, had an exceptional generation record throughout its 25 year life. The first Hunterston A reactor was shut down permanently on 31 December 1989, followed by the second reactor on 30 March 1990.

1. Generation – 1964-1990

Hunterston A ceased generation in 1990.

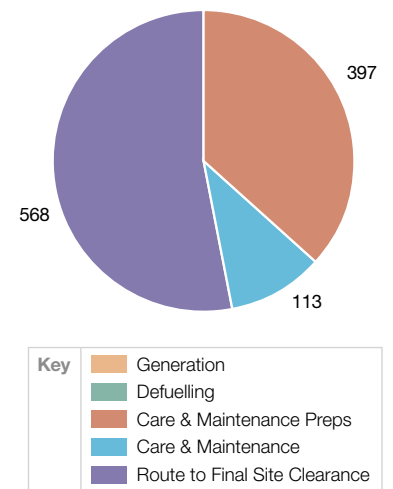
2. Defuelling – 1990-1995

Defuelling was completed in 1995.



The Hunterston A team’s objective is to deliver a cost effective decommissioning programme without comprising safety security or care for the environment. This will be achieved by progressively removing or reducing hazards, focusing initially on the more significant in line with the nationally agreed prioritisation logic. Subsequent priority will then be given to projects on or close to critical path in the Site’s programme. The critical path is defined as that series of activities that dictates the overall length of the programme. If one can work faster on these critical path activities the overall decommissioning programme can be shortened accordingly.

Figure 25-5 – Total cost distribution by key phase for LCBL (£m)



3. Care & Maintenance Preparations – 1995-2016

Preparations to put the site into the Care & Maintenance (C&M) phase are currently ongoing. Dismantling, demolition and waste management work is being undertaken to remove radioactive and selected non-radioactive plant and buildings.

Accumulated operational Intermediate Level Waste (ILW) is to be retrieved, processed, packaged and stored in a purpose-built store which is currently being constructed.

On completion the reactor buildings and ILW store are to be put into a passively safe and secure state for the C&M phase.

4. Care & Maintenance – 2017-2081

The site will remain in a passive state for approximately 65 years, throughout which the facilities will be monitored to ensure safety and environmental integrity are maintained using cost-effective arrangements. Significant dismantling work will not be undertaken.

5. Final Site Clearance – 2081-2090

At the end of the C&M phase, the site will be cleared of all remaining buildings, landscaped and delicensed, available for reuse.



Scope of Work: Care & Maintenance Preparations

The aim of Care & Maintenance Preparations is to make the site passively safe and minimise the amount of surveillance and maintenance required during the Care & Maintenance phase.

The Magnox Electric Strategy for decommissioning former Magnox reactor sites, was set out by Magnox Electric to be consistent with UK Government policy as set out in Commandment (Cmd) 2919; this strategy has been adopted for the decommissioning of Hunterston A.

During the Care & Maintenance Preparations (C&M Preps) phase all buildings other than the reactor buildings are to be de-planted and demolished. The reactor buildings are to have the auxiliary plant and all glass cladding removed and will be re-clad keeping them weather tight and safe. This is the Weather Envelope project.

The accumulated operational ILW is to be retrieved, processed, packaged and stored in a purpose-built ILW store which is currently being constructed.

On completion of the C&M Preps phase the reactor buildings and ILW store are to be put into a passively safe and secure state for the C&M phase.

To gain the benefits of natural radioactive decay the reactors and boilers will remain in a quiescent state with dismantling not taking place until FSC.

Application of innovations and accelerations has enabled the site to maintain the scheduled date for this phase completion by 2016.

Exploring and developing scope for further safety improvements, acceleration and cost savings while maintaining and improving safety performance of Hunterston A is an essential element of the activities during the lifecycle of Hunterston. It is important to reflect the NDA Strategy to identify opportunities. This will focus on the management of ILW, which dictates the extent of the current programme. This will be done with close involvement of regulators.

Five key project areas have been identified as having the greatest potential to minimise the timescales to reach C&M.

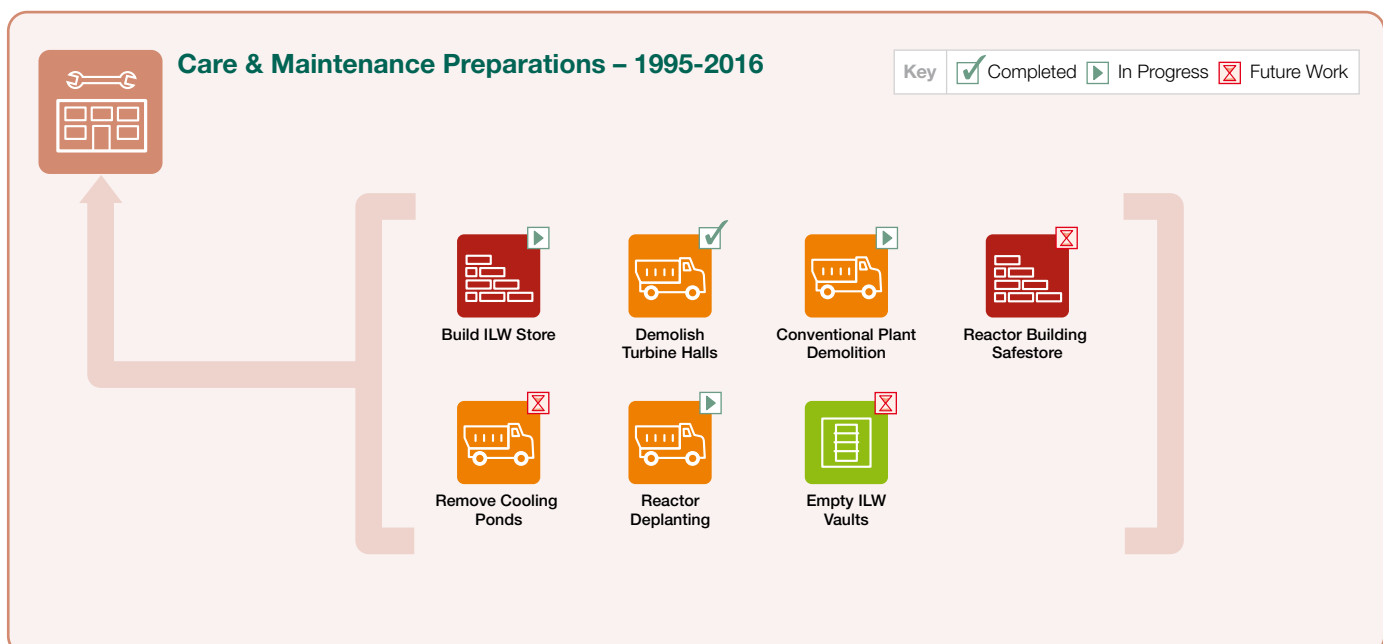
These are:

1. Construction of the ILW store.
2. Recovery and packaging of solid ILW.
3. The recovery, stabilisation and packaging of the wet ILW.
4. Emptying, cleaning and demolition of the fuel storage pond.
5. The installation of the mobile active effluent treatment plant.

Work is currently ongoing in these five key areas. In addition, preparations are underway to demonstrate the safety and effectiveness of a simplified solid ILW retrieval process. It is intended that the new process will lead to a simplified packaging operation. This gives advantages through reduced operator radiation exposure and through retaining options for final disposal as part of an integrated strategy with reactor decommissioning.

A key feature of this life time plan is to retain, where possible, flexibility to change the overall site strategy to reflect any changes which may emanate from the NDA's draft strategy for earlier FSC.

Figure 25-6 – Care & Maintenance Preparations scope of work





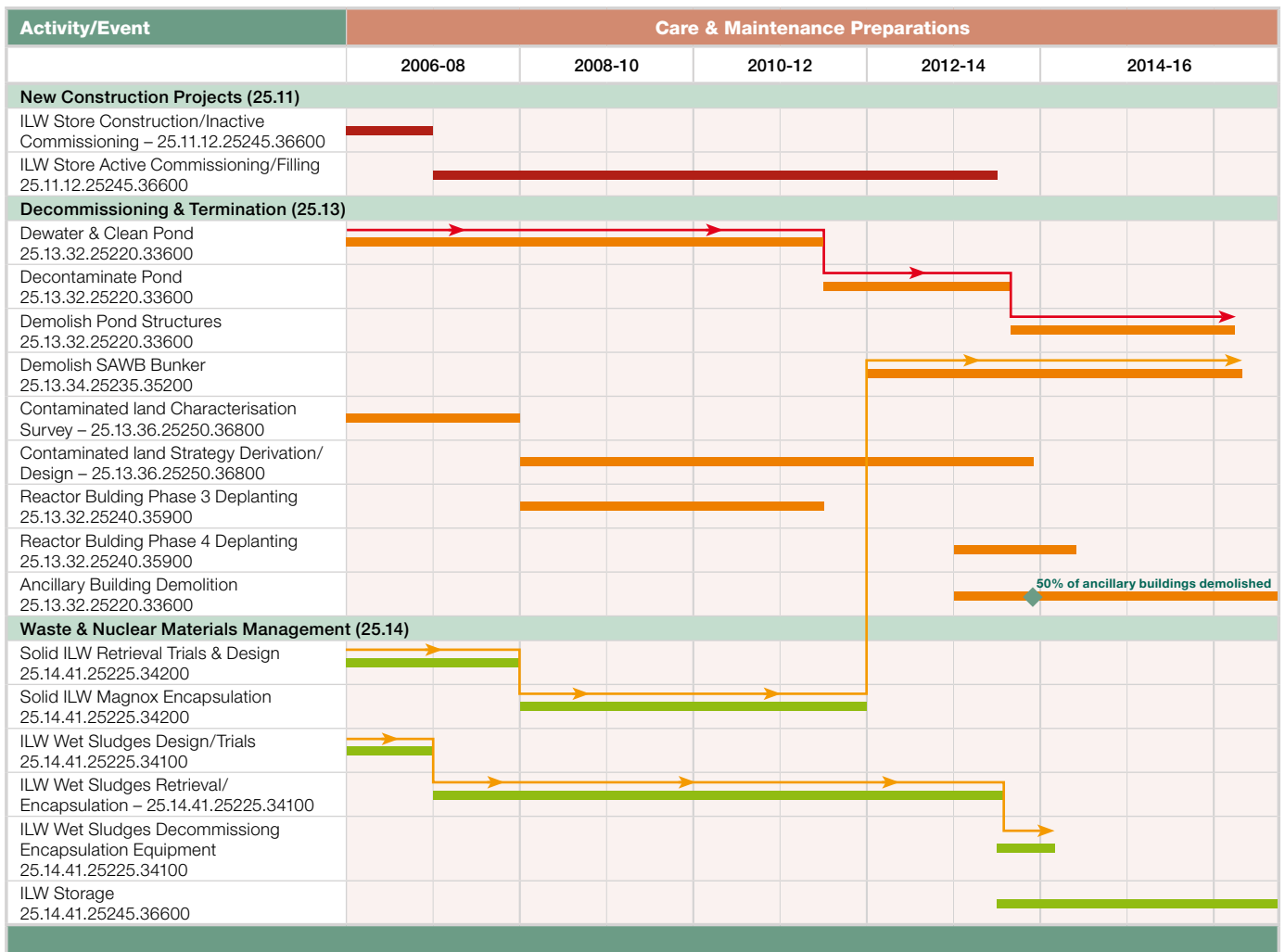
Activities involving the cartridge cooling pond, have the aim of ensuring potential hazards on site are removed.



New construction is required on site to facilitate decommissioning such that the ultimate aim of final site clearance can be achieved.

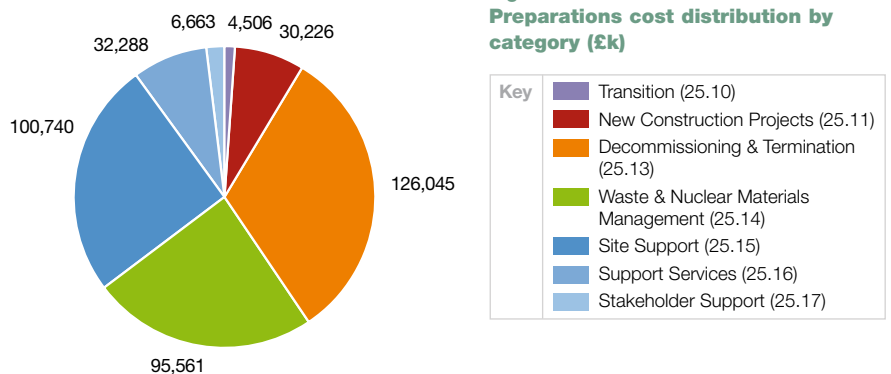
Key	
	Critical Path
	Other Paths of Concern
	Regulatory Milestone
	Other Milestone

Figure 25-7 – Care & Maintenance Preparations summary work programme



All date ranges are in Financial Years

Figure 25-8 – Care & Maintenance Preparations cost distribution by category (£k)



Care & Maintenance

In the Care & Maintenance phase the site will remain in a passive state for a prolonged period the length of which will be dictated by the rate of radioactive decay in the reactors.

It is intended that the reactors will be dismantled approximately 90 years after shut down to gain the benefits of natural radioactive decay. During the interim period the site will remain in a quiescent state under a C&M regime.

It is currently planned for C&M to be split into two periods: 'Initial' and 'Main'.

During the 'Initial' period the site is to remain continuously staffed. With site security, safety and building weather-tightness being continually monitored to ensure the integrity of structures, services and security arrangements.

The 'Main' period covers the remainder of the C&M phase. During this period the staffing on site is to be reduced to a level appropriate to maintain safety and security.

During the C&M phase all buildings are to be maintained commensurate with the hazards and risks arising from the

plant housed within. In addition ground maintenance is to be undertaken to keep the site tidy; to prevent the spread of undergrowth; security blind spots; and minimise potential fire and personnel access hazards.

The buildings are to be inspected on a periodic basis, or following severe weather, ensuring the integrity of the weather-tight envelope.

In addition to routine inspections, periodic structural and civil surveys are to be conducted by suitably qualified and experienced engineers.

The extent and frequency of the inspection and maintenance programme are derived from relevant safety cases and the associated site Maintenance Schedule.

It is anticipated that there may be a need to periodically replace external cladding to maintain a weatherproof structure. It

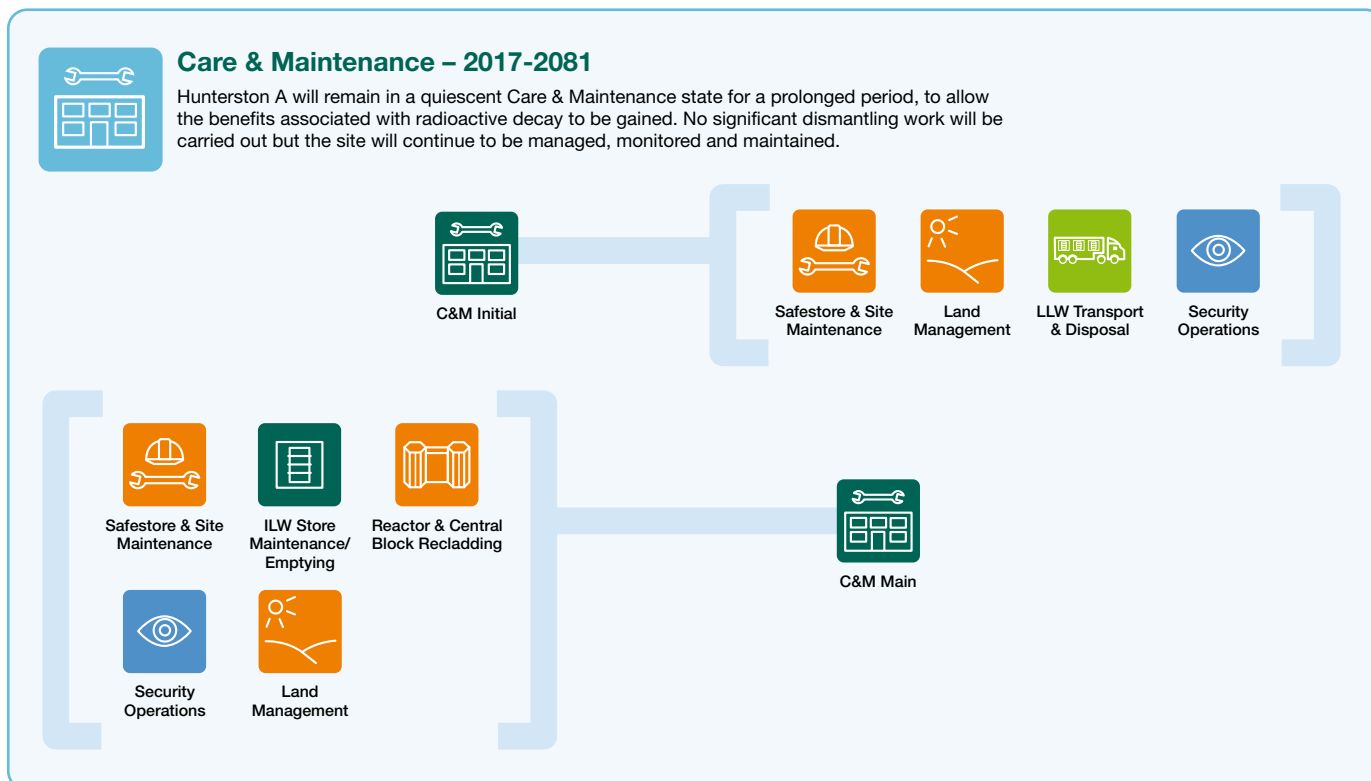
is assumed for the purposes of financial planning, that the building cladding will be replaced/refurbished every 30 years.

Radioactivity levels are to be monitored during C&M to demonstrate contamination control and compliance with authorised discharge limits.

Onsite radiological information is to be obtained during the internal inspection visits through the use of portable active or passive air sampling equipment; taking swab measurements, fixed point and general area radiation surveys.

In addition to the onsite monitoring, an offsite monitoring programme will be performed. This will consist of annual sampling and testing of green vegetation gathered from the locality to demonstrate that there has been no increases to the ambient levels of radioactivity in the surrounding environment.

Figure 25-9 – Care & Maintenance scope of work





The safety and security of the site will be maintained throughout the Care & Maintenance period.



Storage facilities allow safe and secure storage of ILW until the Final Site Clearance phase.

Key	→ Critical Path
	→ Other Paths of Concern
	◇ Regulatory Milestone
	◆ Other Milestone

Figure 25-10 – Care & Maintenance summary work programme

Activity/Event	Care & Maintenance					
	2017-27	2027-37	2037-47	2047-57	2057-67	2067-81
Decommissioning & Termination (25.13)						
Monitoring of Contaminated Land 25.13.33.25250.36900	[Orange bar spanning 2017-27 to 2067-81]					
Reactor Building Care & Maintenance 25.13.33.25240.36300	[Orange bar spanning 2017-27 to 2067-81]					
1st Replacement Reactor Cladding 25.13.33.25240.36300			[Orange bar]			
2nd Replacement Reactor Cladding 25.13.33.25240.36300					[Orange bar]	
Waste & Nuclear Materials Management (25.14)						
ILW Storage of Encapsulated & Containerised Waste 25.14.41.25245.36600	[Green bar spanning 2017-27 to 2037-47]					
Transfer of Encapsulated Waste to ILW Repository – 25.14.41.25245.36700			[Green bar]			
ILW Storage of Containerised Waste 25.14.41.25245.36600				[Green bar spanning 2047-57 to 2067-81]		

All date ranges are in Financial Years

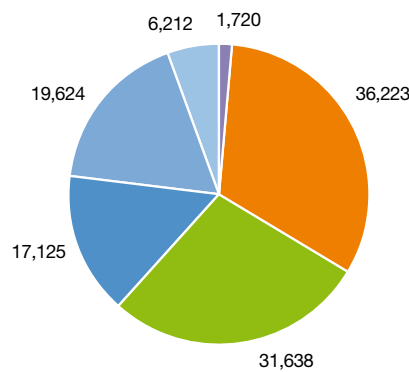


Figure 25-11 – Care & Maintenance cost distribution by category (£k)

Key	■ Transition (25.10)
	■ New Construction Projects (25.11)
	■ Decommissioning & Termination (25.13)
	■ Waste & Nuclear Materials Management (25.14)
	■ Site Support (25.15)
	■ Support Services (25.16)
	■ Stakeholder Support (25.17)

Final Site Clearance

After the Care & Maintenance phase, final decommissioning will commence and the site will be cleared of all remaining buildings and delicensed to make it available for reuse.

The FSC phase consists of activities to achieve the following End State:

- All Radioactive material above background (or to agreed level) removed from site.
- Reactors dismantled and removed from site.
- All buildings demolished and cleared from the site.
- Remedial work to the grounds and foreshore completed and landscaped as required.
- Waste will have been appropriately treated, packaged and sent for disposal off site.
- The licensed area of the site will have been released from its nuclear site license and the site made available for alternative use.

The following provides an overview of the activities to be performed based on current technology and policy.

The FSC phase is due to commence in 2081. The initial tasks include the reinstatement of the site infrastructure and entrance to the buildings will be gained in order to carry out preliminary structural and radiological surveys of buildings to confirm area safety prior to commencement of further activities.

A Waste Management Facility (WMF) is to be established to process the waste arising from FSC. Wastes are to be transferred in a controlled manner from the workface to the WMF where they will be monitored and sentenced to the appropriate waste route. Active waste is to be packaged in waste disposal boxes for off site transport and disposal.

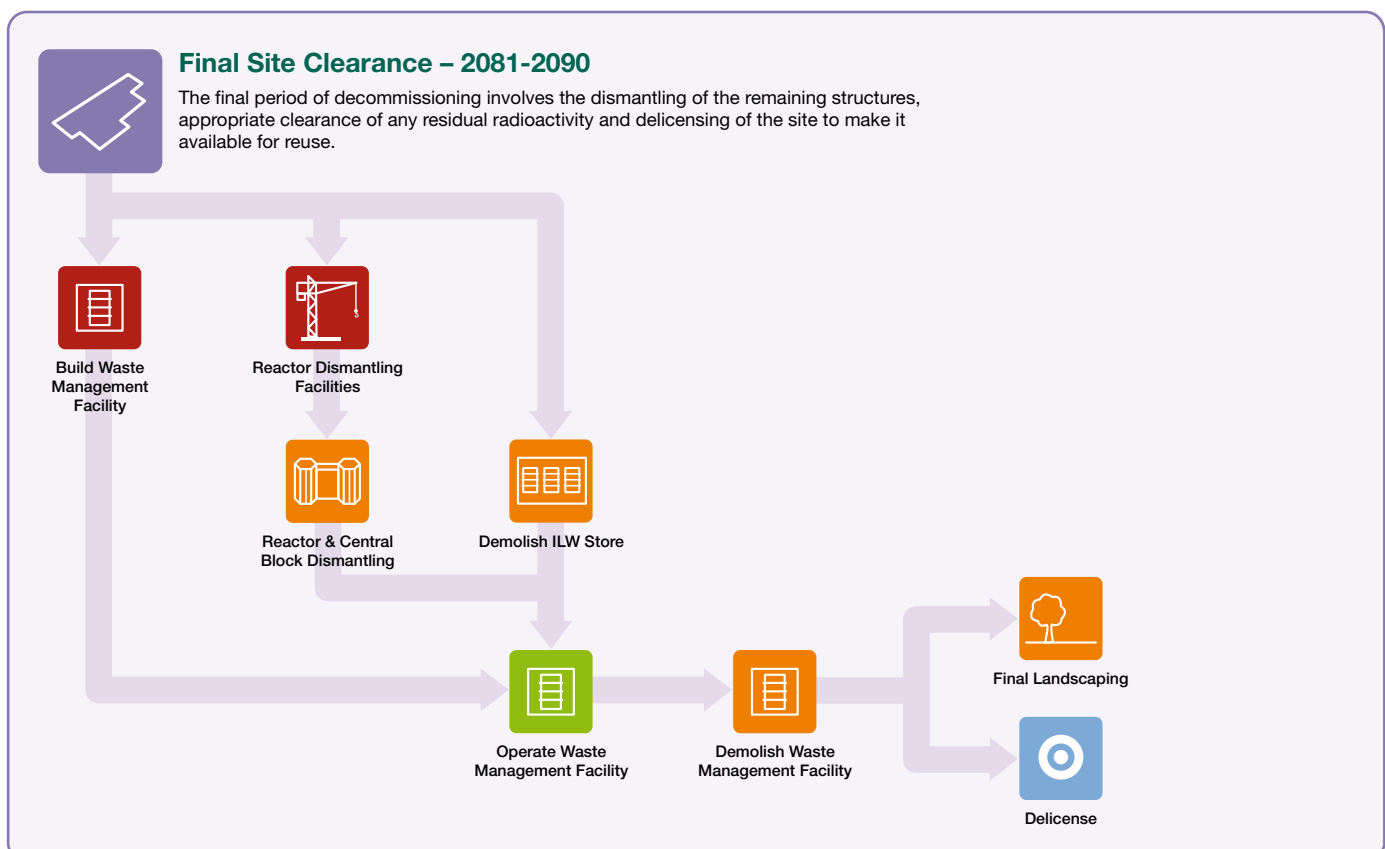
Each reactor is to be completely dismantled by removing the core from the reactor, taking apart the pressure vessel and diagrid, dismantling the other reactor structures and removing activated biological shield material.

Once all active plant and contamination has been removed from the reactor buildings remaining structures are to be demolished and voids below ground level backfilled.

The ILW Store is to be emptied and stored waste transferred to the national ILW repository. Once emptied this building may be used for storage during the later stages of FSC before being demolished.

As demolition nears completion, total clearance of the site commences. Remaining infrastructure will be removed and the site is then to be landscaped to a standard that enables the area to be delicensed and made fit for reuse.

Figure 25-12 – Final Site Clearance scope of work





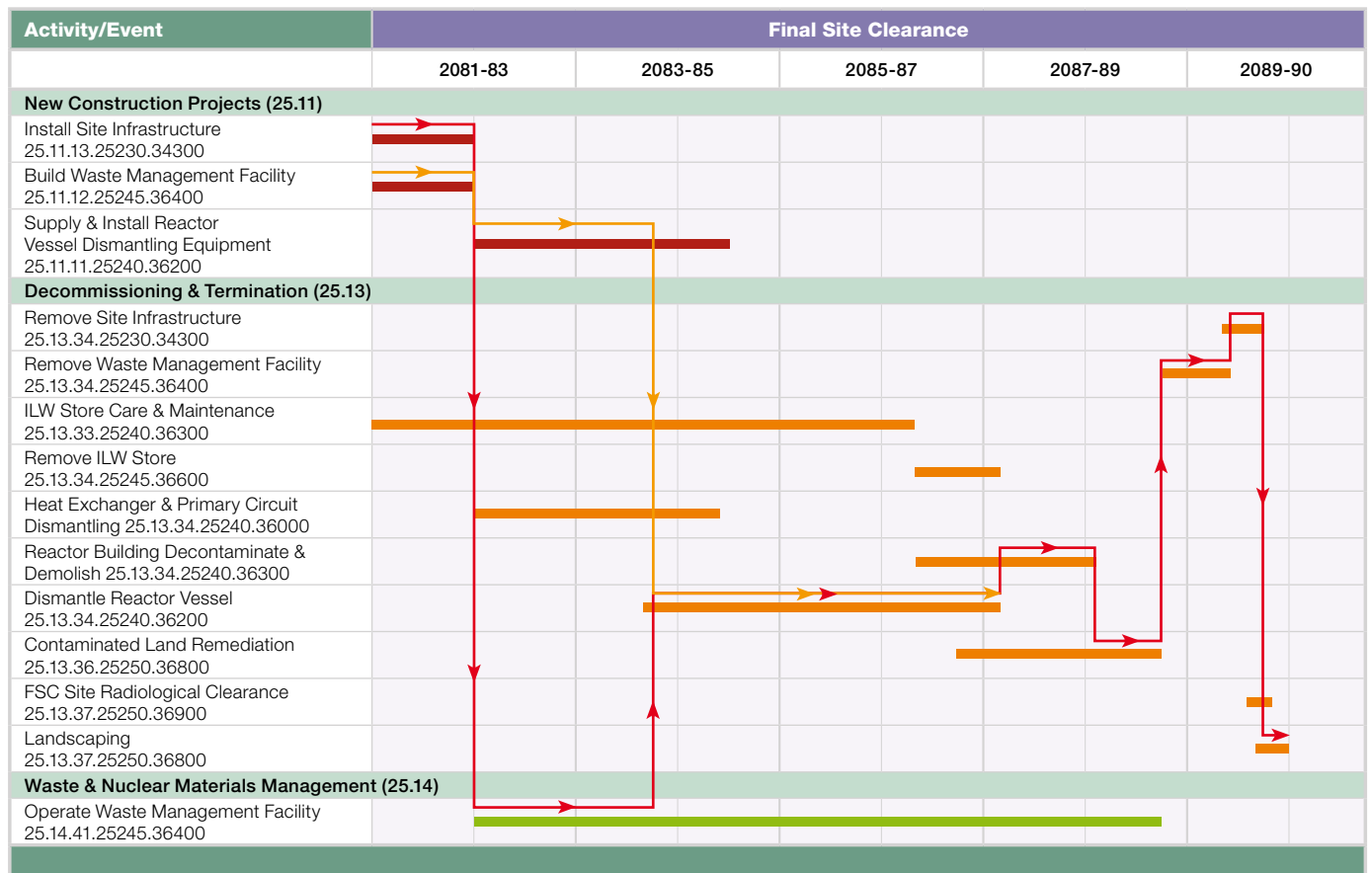
Waste management operations will be undertaken to segregate the waste to maximise the volume available for free release.



The goal of the Hunterston A team is to continue the site decommissioning process, such that the site is available for reuse.

Key	Symbol	Description
	Red arrow	Critical Path
	Yellow arrow	Other Paths of Concern
	Green diamond	Regulatory Milestone
	Blue diamond	Other Milestone

Figure 25-13 – Final Site Clearance summary work programme



All date ranges are in Financial Years

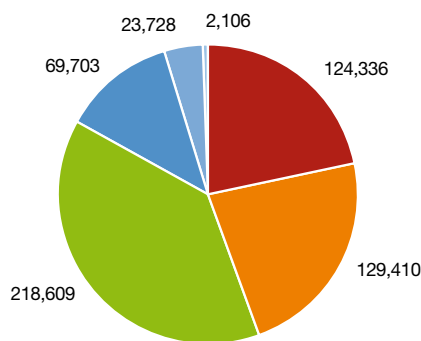


Figure 25-14 – Final Site Clearance cost distribution by category (£k)

Key	Color	Description
	Light Blue	Transition (25.10)
	Red	New Construction Projects (25.11)
	Orange	Decommissioning & Termination (25.13)
	Green	Waste & Nuclear Materials Management (25.14)
	Dark Blue	Site Support (25.15)
	Light Blue	Support Services (25.16)
	Light Blue	Stakeholder Support (25.17)

Near Term Work Plan (Years 1 to 3)

High priority projects will continue to be progressed towards the objective of achieving a safe, secure and environmentally sensitive site.

Throughout the duration of the NTWP period the work to be undertaken on the Hunterston A site is in line with the approval national prioritisation logic. Ongoing hazard removal or reduction has the highest priority, followed by projects critical to achieving the start of C&M.

A key hazard reduction project is deplanting and demolition of the precipitator tower. This is part of the liquid radioactive effluent treatment its removal will significantly reduce radiation exposure hazard.

There are several projects critical to the completion of the C&M phase of the decommissioning programme.

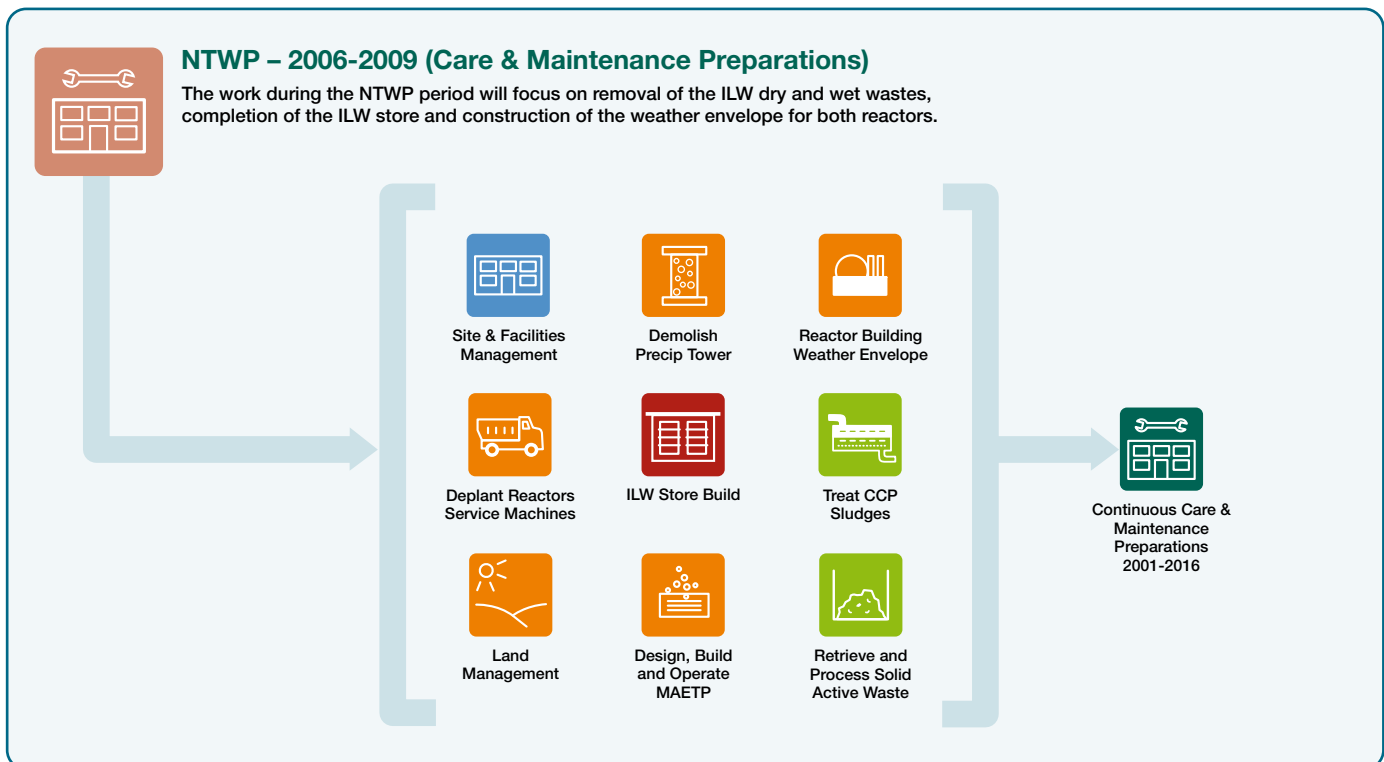
- Retrieval and packaging of solid ILW.
- The recovery and packaging of the wet ILW. Currently this material is stored in underground concrete tanks.

- Completion of construction and the commissioning of the onsite ILW store. The store will receive pre-packaged ILW.
- Installation of the Modular Active Effluent Treatment Plant (MAETP) which will enable emptying, cleaning and demolition of the fuel storage pond and its containment building.
- Design, procurement and installation activities required to remove CCP skips from the pond and decontaminate them to reduce the waste classification from ILW to Low Level Waste (LLW).
- Following removal of the skips and associated equipment work will commence to clean and drain the pond. This will involve decontamination of the pond walls and floor following dewatering.

While the Hunterston A team are carrying out decommissioning activities, continued monitoring of programme and strategy will be undertaken in order to optimise the site resources allowing the benefits of reducing the overall programme duration with attendant cost savings.

Essential maintenance and plant operation will continue to be undertaken to support all site decommissioning projects thus ensuring that all safety and security related plant is kept in a fit for purpose state and in full compliance with the Site Licence and Maintenance Schedule.

Figure 25-15 – NTWP (Years 1 to 3) scope of work





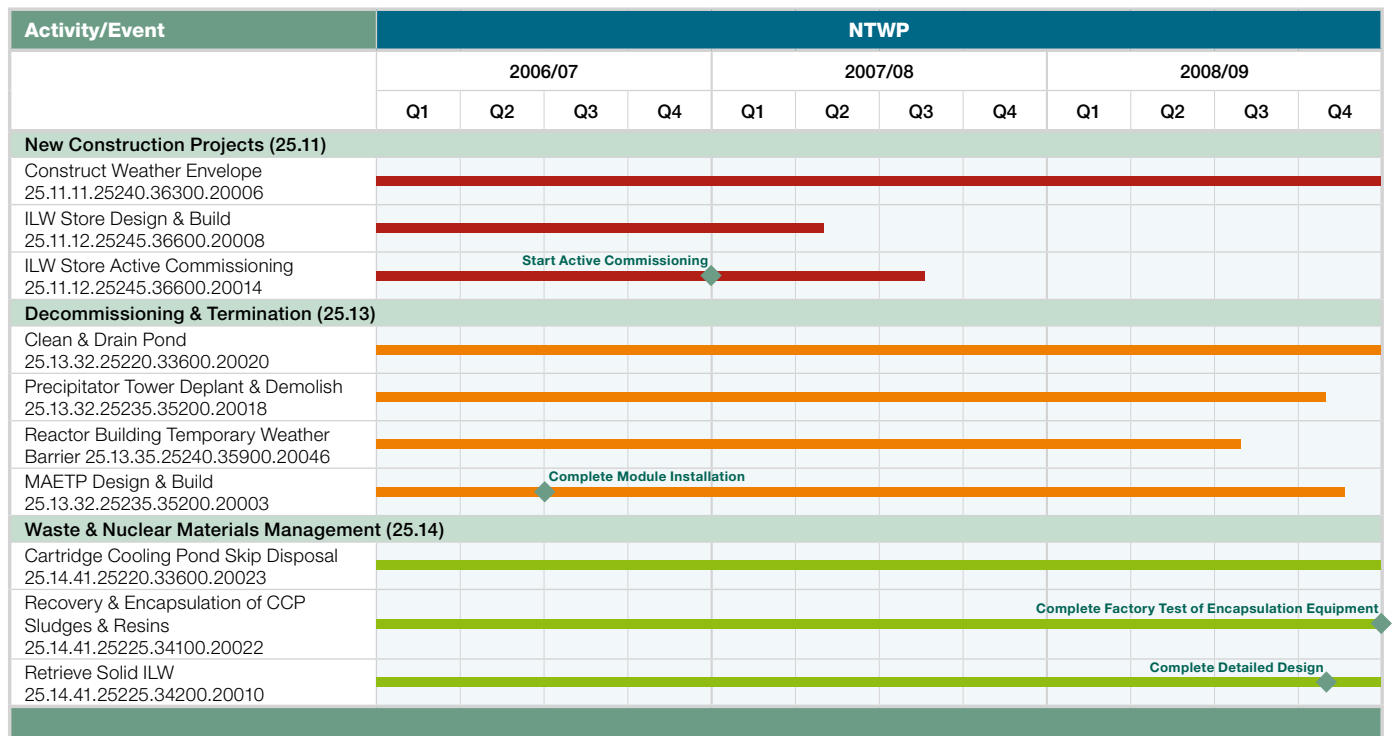
Decommissioning requires a wide range of skills and technical support in which many local firms are engaged.



The replacement weather envelope will provide the environment necessary to demonstrate the continued safety of the reactor buildings.

Key	Symbol	Description
	Red arrow	Critical Path
	Orange arrow	Other Paths of Concern
	Green diamond	Regulatory Milestone
	Blue diamond	Other Milestone

Figure 25-16 – NTWP (Years 1 to 3) summary work programme



All date ranges are in Financial Years

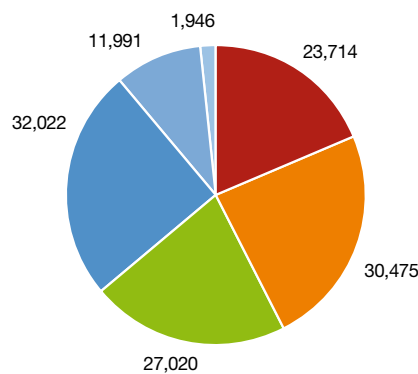


Figure 25-17 – NTWP (Years 1 to 3) cost distribution by category (£k)

Key	Color	Description
	Purple	Transition (25.10)
	Red	New Construction Projects (25.11)
	Orange	Decommissioning & Termination (25.13)
	Green	Waste & Nuclear Materials Management (25.14)
	Blue	Site Support (25.15)
	Light Blue	Support Services (25.16)
	Light Blue	Stakeholder Support (25.17)

Major Assumptions & Exclusions

Assumptions provide positive bounding to the scope of work to be performed and are predicated on what an experienced contractor would reasonably expect to occur.

Figure 25-18 – Major assumptions by category

PSWBS	Assumptions	Justification	Applies to:	
			LCBL	NTWP
Cross Category 25				
25	Government policy, standards, legislative and regulatory environment remain significantly unchanged, or changes pending have no significant impact.	No significant proposed changes have been identified.	✓	✓
	NDA requirements for reporting and monitoring remain generally as at present.	Arrangements agreed and no indication of need for change.	✓	✓
New Construction Projects Category 25.11				
25.11	All necessary approvals, consents and authorisations are obtained in the time scheduled.	Time allowed is taken from recent & past experience.	✓	✓
Decommissioning and Termination Category 25.13				
25.13	Future decommissioning activities will be carried out utilising known technologies.	No possible means of predicting future technological advances.	✓	✓
	Across the Magnox fleet there will be a rolling programme for the commencement of Final Site Clearance (FSC activities).	The corporate strategy and provisions for FSC work are based on such a rolling programme.	✓	✓
PSWBS	Exclusions	Justification		
Cross Category 25				
25	All costs relating to Scottish Power Plant and Equipment on the Hunterston A Site is excluded from the Hunterston A plan.	The liability for this equipment is with other parties.	✓	
	There is no Scope, Schedule or Cost in support of any NDA competition process.	No definitive information upon which to plan received from the client.	✓	✓

The above figure contains the major assumptions by category upon which the scope of work is based in this plan. These assumptions, along with those defined in the supporting documentation are intended to clarify the boundaries of the work, which has been planned and costed.

They will be addressed as and when they arise. This approach will allow the efficient costing and planning of work.

All work in this LCBL has been based on the following assumptions:

- The NDA's 'Key technical and strategic assumptions' issued as guidance.
- Current Government Policy, Legislative and Regulatory, remains constant with the Regulators adopting a consistent and proportionate approach.
- Current waste disposal and environmental discharge authorisations remain unchanged.

Risk Management

Risk management is a key feature of effective project management of the Hunterston A decommissioning project and is used both qualitatively and quantitatively to ensure the adherence to budgets and programme timescales.

Figure 25-19 – Risk summary

	Risks	Applies to:	
		LCBL	NTWP
PSWBS 25 – Cross Category			
Description	External stakeholders support is lost.		
Possible Impact	Additional cost and time delays incurred whilst issue addressed and resolved.		
Mitigation Activities	Continue assessment of the impact of potential changes to strategy and identify critical actions/conflicts and continue current arrangements with regard to Stakeholder group meetings, public consultation and monitoring of feedback from interested parties.	✓	✓
PSWBS 25.14 – Waste & Nuclear Materials Management Category			
Description	The case for not grouting solid ILW, other than Magnox, is not accepted.		
Possible Impact	Additional cost and time delays incurred whilst issue addressed and resolved.	✓	✓
Mitigation Activities	Continued communications with regulators and Nirex.		
PSWBS 25.14 – Waste & Nuclear Materials Management Category			
Description	Changes to the current decommissioning strategy may lead to a requirement for a submission under the Environmental Impact Assessment (Decommissioning) Regulations.		
Possible Impact	Significant delays while submission is prepared and processed.	✓	✓
Mitigation Activities	Dialogue with Regulators to give assurance that any requirement for a possible Environmental Impact Assessment for Decommissioning (EIAD) submission is identified at the earliest possible opportunity. Early consideration to EIAD submission.		
PSWBS 25.14 – Waste & Nuclear Materials Management Category			
Description	Current measures to restore Cartridge Cooling Pond water quality prove to be not fully effective.		
Possible Impact	Delays to pond skips and pond emptying programme.	✓	✓
Mitigation Activities	Arrangements are being made to cope with increased burden on water treatment plant facilities. Actions identified through review of similar processes on other sites are being implemented at Hunterston A.		
PSWBS 25.14 – Waste & Nuclear Materials Management Category			
Description	NII Improvement Notice date of 2013 to have bunkers cleared of Magnox and non-Magnox ILW waste will not be achieved.		
Possible Impact	NII apply penalty.	✓	✓
Mitigation Activities	Engage with Nuclear Installations Inspectorate to review date and existing strategy.		
Opportunity			
PSWBS 25.14 – Waste & Nuclear Materials Management Category			
Description	The case for not grouting solid Magnox is accepted.		
Possible Impact	Early delivery of project.	✓	✓
Mitigation Activities	Continued communications with regulators and Nirex.		

A structured approach is adopted to identifying and managing both threats to objectives and opportunities for improvement. A manager is identified for each threat/opportunity and the likelihood of occurrence and potential impact on cost and programme are assessed; the risk is then quantified. In some cases mitigation measures may be considered necessary and these are implemented. A register of risks is maintained and is used as the basis for routine reviews.

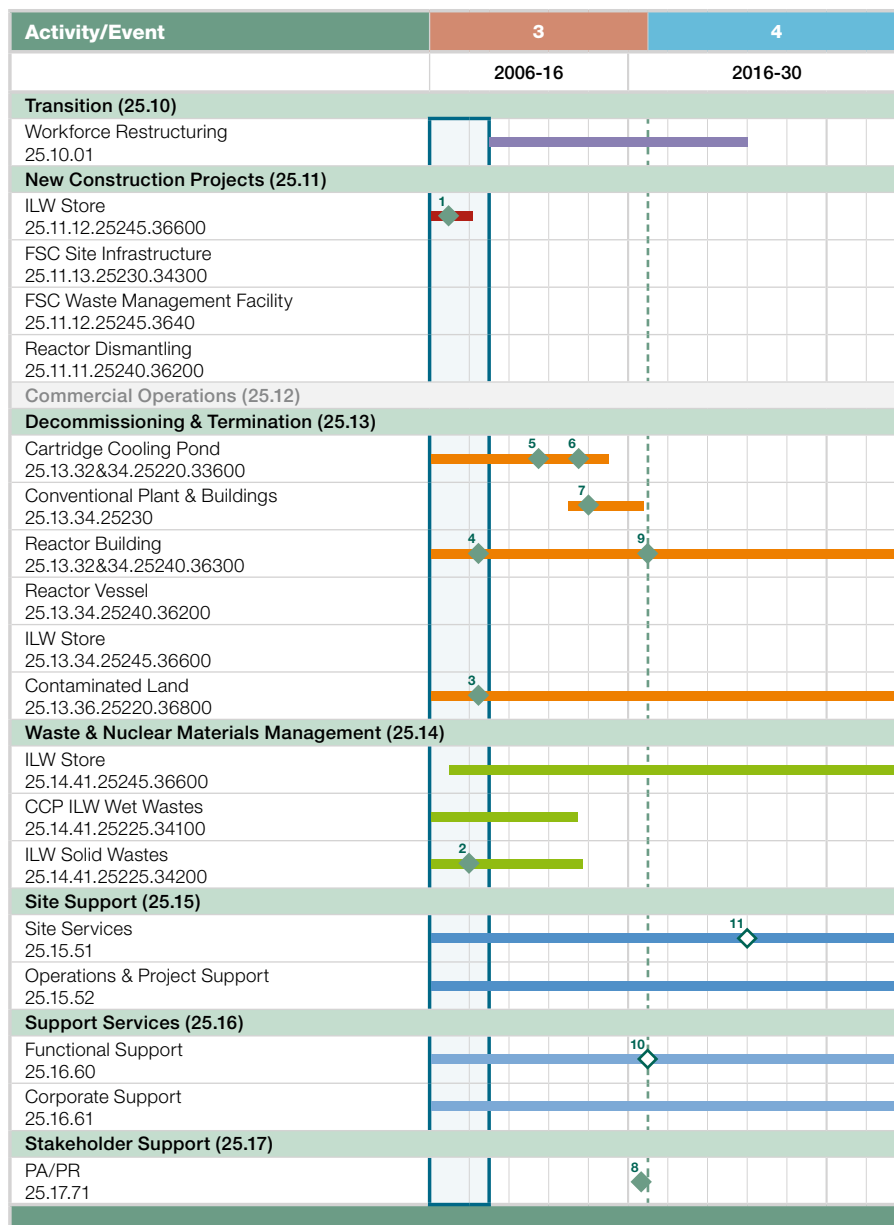
Summary Milestone Schedule

The milestone schedule shown below represents the key milestones to be delivered during the Hunterston A Lifetime Plan.

Key milestones

	Date	Description
◇	Regulatory	
10	01-01-2017	NII approve management of change
11	01-03-2022	OCNS approve site security plan for C&M
13	01-04-2081	OCNS approve site security plan for FSC
◆	Other	
1	01-05-2007	Commence mechanical installation
2	01-04-2008	Commence encapsulation of Magnox
3	01-10-2008	Complete contaminated land characterisation survey
4	22-10-2008	Reactor building temporary weather protection completed
5	01-09-2011	Complete pond dewatering
6	01-11-2013	Complete decontamination of structure
7	01-03-2014	50% of buildings demolished
8	01-12-2016	Complete Care & Maintenance preparations
9	01-01-2017	Commence period of Care & Maintenance
12	01-04-2043	Commence transfer of encapsulated waste to ILW repository
14	01-04-2081	Commence Final Site Clearance
15	01-02-2086	Commence demolition
16	01-05-2087	ILW store demolished
17	01-01-2090	Commence remediation

Figure 25-20 – Lifecycle milestone schedule



All date ranges are in Financial Years

NTWP

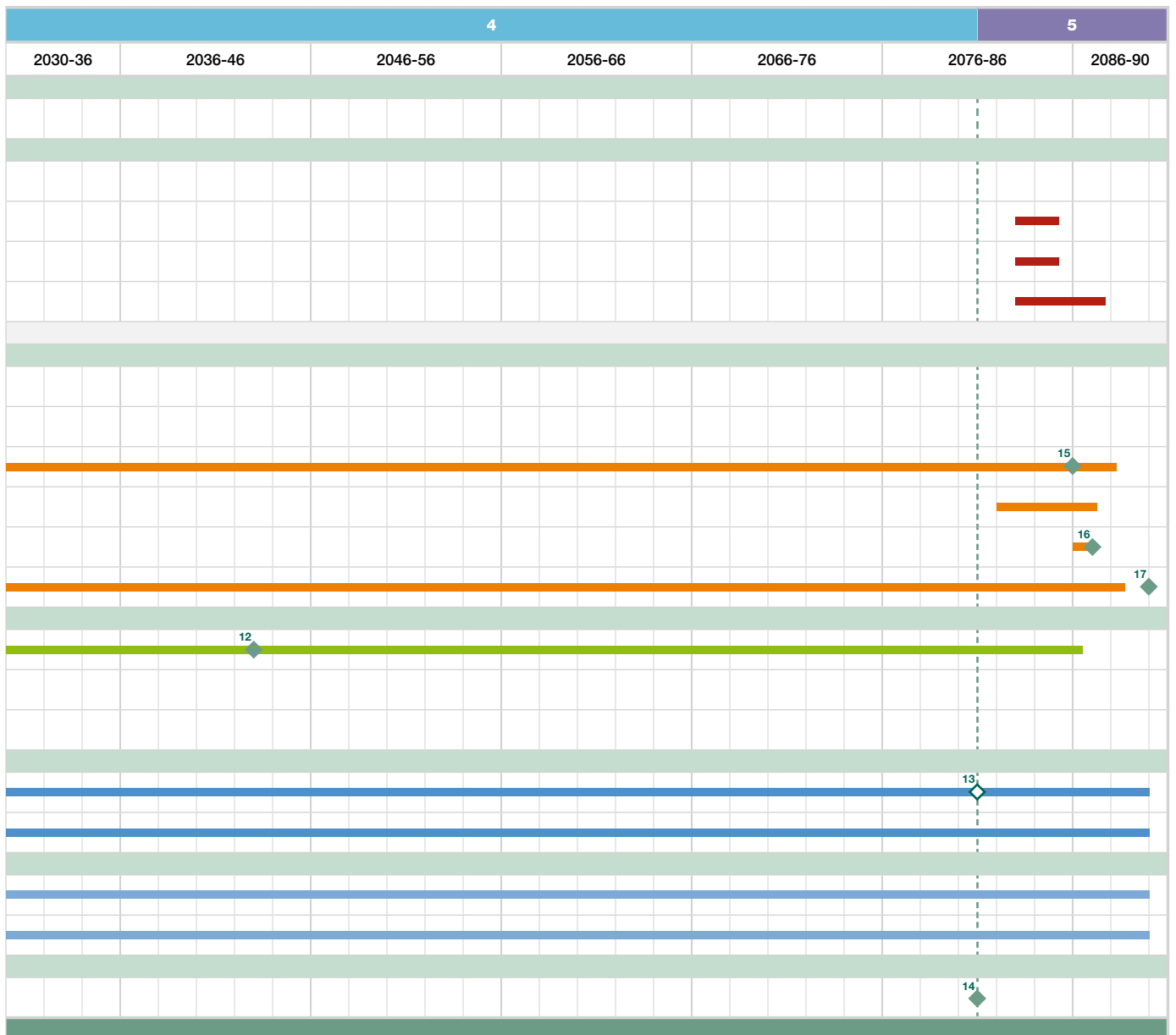


Strong leadership and effective management coupled with rigorous planning and project control is key to continued success.



Effective programme delivery is complemented by development of innovative decommissioning techniques to minimise programme duration.

Lifecycle milestone schedule – continued



3. Care & Maintenance Preparations 4. Care & Maintenance 5. Final Site Clearance

Lifetime Plan Value

The summary tables and graphs show the present day, escalated and discounted values for the site over the Hunterston A Lifetime Plan. Activities have been prioritised and selected to comply with funding constraints.

Figure 25-21 – Summary of costs – present day, escalated and discounted values

Category	Prior years cost to date (£k)	FYs 2006/07-10/11				
		Year 1 (£k)	Year 2 (£k)	Year 3 (£k)	Year 4 (£k)	Year 5 (£k)
Transition (25.10)	330	0	0	0	992	0
New Construction Projects (25.11)	13,192	9,027	4,922	9,765	5,443	1,069
Commercial Operations (25.12)						
Decommissioning & Termination (25.13)	12,327	11,207	12,341	6,927	2,873	8,402
Waste & Nuclear Materials Management (25.14)	4,813	5,004	12,393	9,623	17,646	13,679
Site Support (25.15)	10,356	10,739	10,681	10,602	11,223	10,897
Support Services (25.16)	3,557	4,229	3,881	3,881	3,303	3,238
Stakeholder Support (25.17)	426	649	649	649	477	715
Fee (25.18)						
NDA Funded (25.19)						
Subtotal	45,001	40,855	44,867	41,447	41,958	37,999
Escalated value			46,257	44,057	45,982	42,935
Discounted value			43,901	39,682	39,306	34,831
Revenue Income (25.20)						

All date ranges are in Financial Years

NTWP

The major costs are associated with the construction of the ILW Store and the recovery and packaging of the solid ILW, decommissioning and clearance of the site in readiness for C&M and the installation of site infrastructure for FSC. Significant cost is also associated with final decommissioning and waste disposal.

The costs associated with the latter years of the lifecycle will rapidly reduce to zero as the site progresses towards removal of site infrastructure.

Figure 25-22 – NTWP (Years 1 to 3) cost distribution by category (£k)

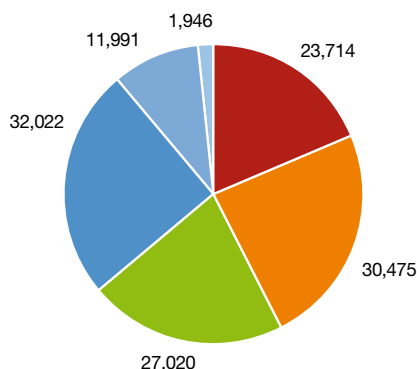


Figure 25-23 – Years 1 to 5 cost distribution by category (£k)

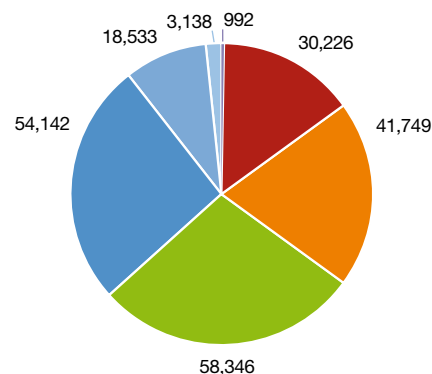


Figure 25-24 – Budgeted cost of work scheduled (BCWS) profile curve

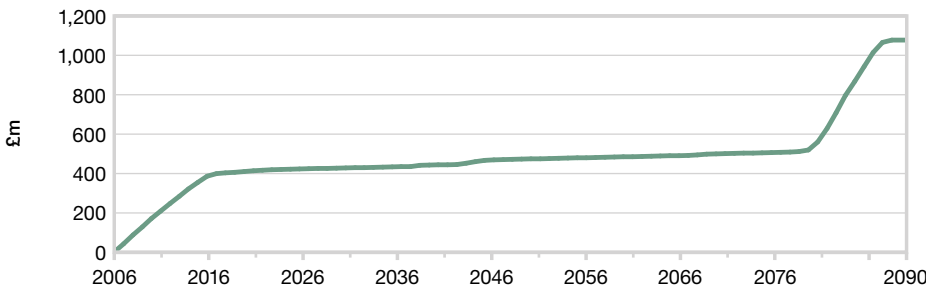


Figure 25-24 shows the budgeted cost of work scheduled profile curve. This illustrates how the total costs will be spread over the remainder of the site lifecycle.

Summary of costs – present day, escalated and discounted values – continued

Subtotal years 1-5 (£k)	FYs 2010/11-15/16					Subtotal years 1-10 (£k)	Lifecycle balance years 11+ (£k)	Total lifecycle cost (£k)
	Year 6 (£k)	Year 7 (£k)	Year 8 (£k)	Year 9 (£k)	Year 10 (£k)			
992	0	732	198	678	882	3,481	2,746	6,227
30,226	0	0	0	0	0	30,226	124,336	154,562
41,749	10,753	11,150	17,060	20,466	19,426	120,605	171,073	291,678
58,346	12,710	11,560	6,757	2,855	2,958	95,186	250,623	345,809
54,142	10,613	10,211	9,256	7,510	5,153	96,885	90,683	187,568
18,533	3,154	2,980	2,468	2,079	1,634	30,847	44,793	75,640
3,138	715	684	588	552	491	6,168	8,813	14,980
207,126	37,945	37,317	36,327	34,140	30,543	383,399	693,066	1,076,465
220,086	44,202	44,819	44,982	43,585	40,201	437,877	6,705,651	7,143,528
198,576	34,033	32,749	31,194	28,685	25,111	350,348	165,836	516,184

Figure 25-25 – Years 1 to 10 cost distribution by category (£k)

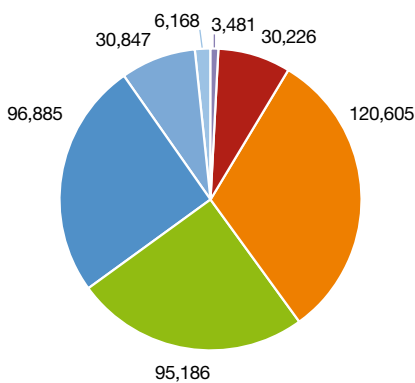
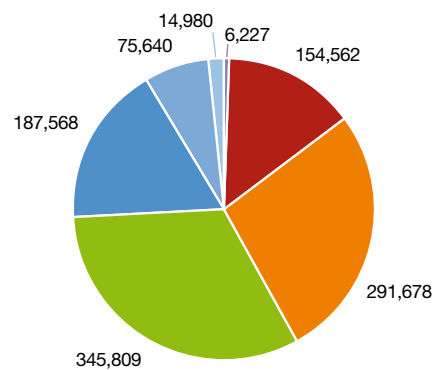


Figure 25-26 – LCBL cost distribution by category (£k)



Key	Category
Light Blue	Transition (25.10)
Red	New Construction Projects (25.11)
Orange	Decommissioning & Termination (25.13)
Green	Waste & Nuclear Materials Management (25.14)
Dark Blue	Site Support (25.15)
Light Blue	Support Services (25.16)
Light Blue	Stakeholder Support (25.17)

Reconciliation of Costs

The table below compares the 80% confidence values for the Lifetime Plan with values from the LCBL 2005/06 submission over the same period uplifted to September 2006 money values.

Figure 25-27 – Reconciliation of costs

Category/Type	Lifetime Plan 2006/07 (£k)	LCBL 2005/06 (£k)	Variance (£k)	Justification
Transition (25.10)				
Workforce Restructuring (25.10.01)	6,227	7,895	-1,668	Reduction in Central Support Costs.
New Construction Projects (25.11)				
Decommissioning (25.11.11)	119,132	96,379	22,753	Transfer of Weather Envelope from Category 13.
Decommissioning & Termination (25.13)				
Interim Decommissioning (25.13.32)	68,779	105,314	-36,535	Transfer of Weather Envelope to Cat 13 and Re-categorisation of selected projects to Final Decommissioning.
Final Decommissioning (25.13.34)	119,410	95,794	22,937	Re-categorisation of selected projects to Final Decommissioning.
Waste & Nuclear Materials Management (25.14)				
ILW Operations (25.14.41)	222,720	230,539	-7,239	Re-estimate of Solid & Liquid ILW processing costs.
LLW Operations (25.14.43)	123,089	118,801	4,288	Increased LLW Disposal costs. Enhanced Escalation for C&M and FSC activities.
Site Support (25.15)				
Site Services (25.15.51)	142,402	131,636	10,766	Increased staffing costs.
Operations & Project Support (25.15.52)	45,166	46,395	-1,229	Reduction in Central Support costs.
Support Services (25.16)				
Functional Support (25.16.60)	74,296	71,773	2,523	Increased staffing costs.

Categories included by exception where significant changes exist.

The significant areas of change across categories are as follows:

- Transfer of the majority of central support costs to Chapelcross.
- Enhanced escalation of C&M and FSC base costs.
- Increased site staffing levels commencing 2006/07 for the period of C&M Preps.
- Transfer of the Weather Envelope project from category 13 (Decommissioning & Termination) to category 11 (New Construction Projects).

Other significant changes within Category are as follows:

Category 13:

- Additional Scope to Address Pond Chemistry issues.
- Increase scope complexity and Precipitator Building removal work package.
- Revise estimate for Clean and Drain Pond project resulting in increased cost.

Category 14:

- Revise estimate for SAWB Retrieval project resulting in significant reduction in costs.
- Additional costs for ILW wet wastes processing due to improved scope definition.
- Increased cost for LLW disposal resulting from increased quantities for the first three years and higher disposal charges.

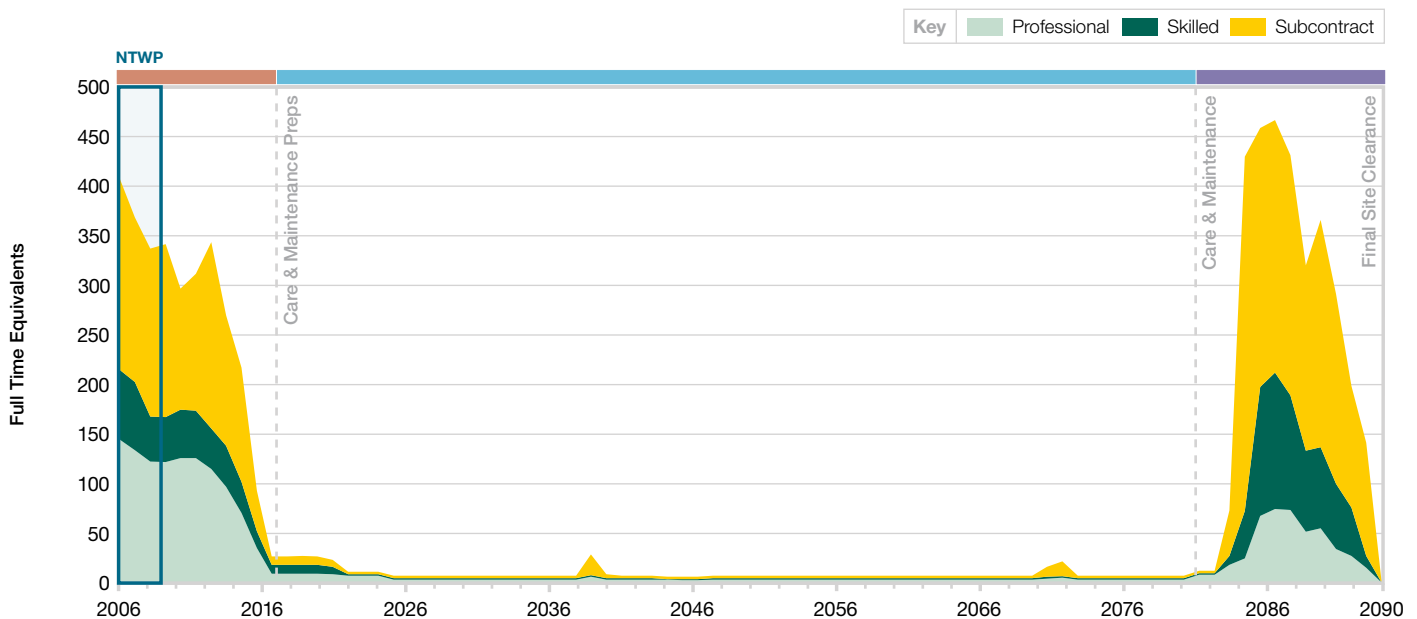
Category 15:

- Additional scope to execute strategy development work package.

Staffing Curve

Staff resource requirements are subject to rigorous planning and critical analysis to ensure that the required skill mix and staff numbers are always commensurate with the activities to be undertaken on site.

Figure 25-28 – Staffing profile curve against time and key phases



LCBL Staffing

Staff numbers on the Hunterston A site will vary in accordance with each particular Lifecycle phase:

There will be a general decline of staff numbers as the site moves towards C&M. There will also be changes in the skill mix required, with increases and decreases of some staff grades to meet the changing site requirements.

Throughout the C&M phase, the site will remain in a passive state. During which time sufficient staff will be provided to sustain the security, monitoring and routine maintenance functions with the exception of occasional small increases to perform major activities such as building recladding.

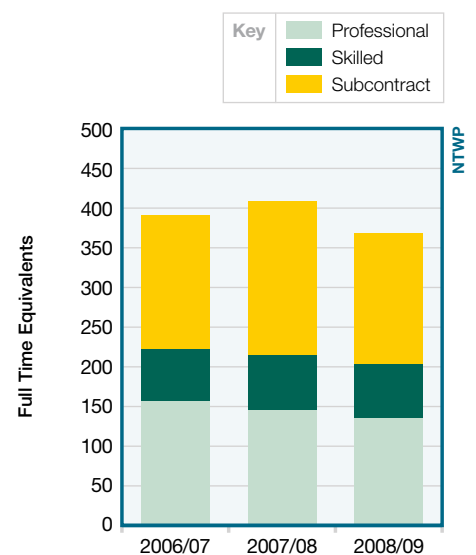
The FSC phase will see a rapid increase of staff numbers initially to install the site infrastructure. An additional increase for final decommissioning followed by a gradual reduction to zero is likely, as the site progresses towards removal of site infrastructure, landscaping and site delicensing.

NTWP Staffing

Over the three year NTWP period the overall staffing levels will remain relatively consistent.

The separation into skill categories allows for more detailed resource planning and staff training to meet future needs.

Figure 25-29 – NTWP (Years 1 to 3) staffing profile against time



Metrics & Key Quantity Curves

Monitoring of the LCBL decommissioning project is achieved through a number of key quantities which have been identified to provide a clear indication of the ongoing programme progress.

LCBL Key Metrics

Figure 25-30

ILW Store emptying and filling operations.

Figure 25-31

Number of Maintenance Schedule Routines to be carried out.

Figure 25-32

Volume of buildings demolished during C&M Preps.

Figure 25-33

Lifecycle cost distribution by category.

Figure 25-30 – ILW Store emptying and filling operations

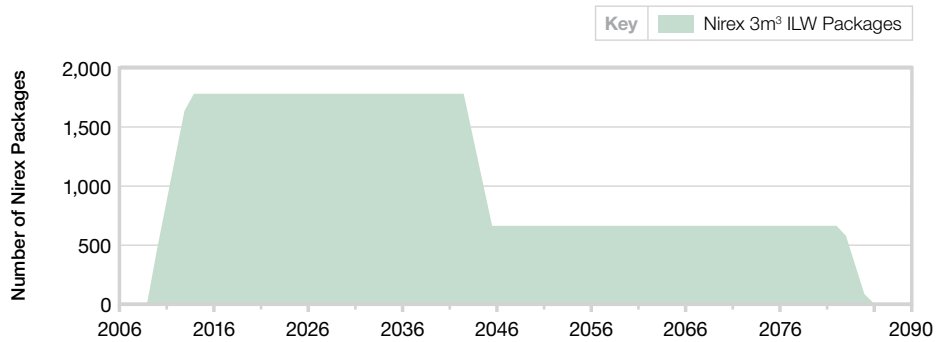


Figure 25-31 – Anticipated annual Statutory Maintenance Schedule routines

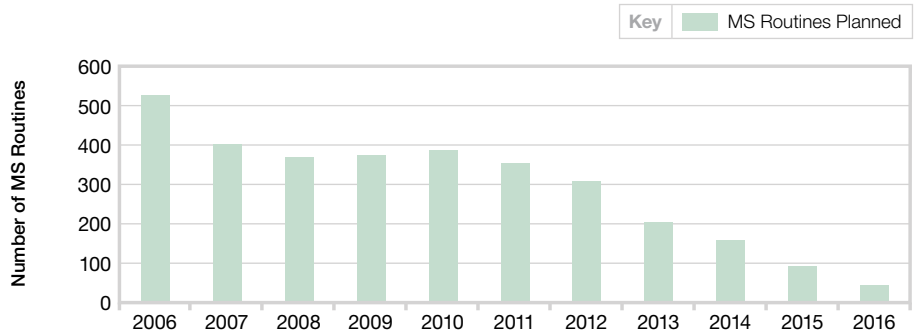


Figure 25-33 – Lifecycle cost distribution by category (£k)

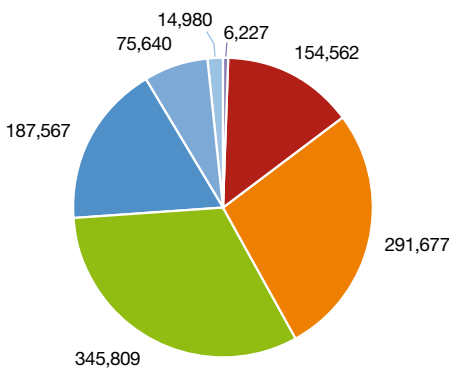
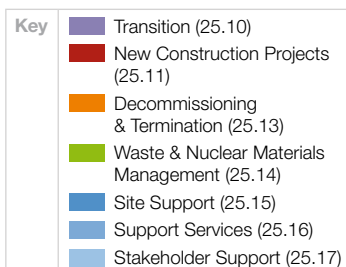
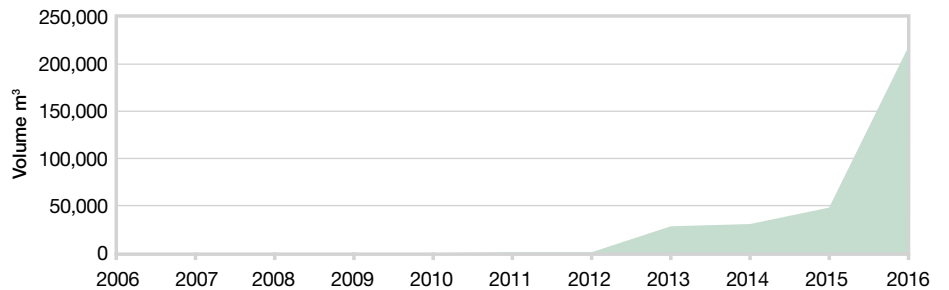


Figure 25-32 – Cumulative Volume of buildings demolished during Care & Maintenance Preparations



Performance measurement against the metrics plays an important role in:

- Identifying and tracking progress against the Hunterston A team’s goals.
- Identifying opportunities for improvement.

NTWP Key Metrics

Figure 25-34

Removal of Weather Barrier – quantities of material removed from site.

Figure 25-35

ILW Store – Area of cladding constructed.

Figure 25-36

CCP Sludges and Resins Recovery – waste quantities.

Figure 25-37

Local area charity, sponsorship and socio-economic development – breakdown of projected spend (£) – 2006/07.

Figure 25-34 – Removal of weather barrier – material removed from site

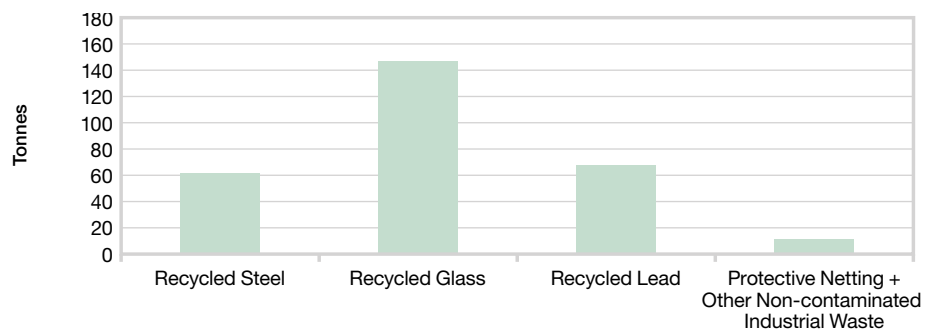


Figure 25-35 – ILW Store – area of cladding constructed

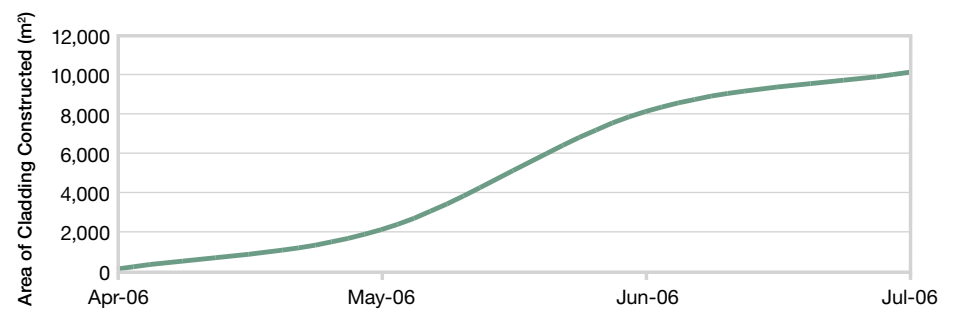


Figure 25-36 – Waste quantities held on site awaiting recovery as part of the Cartridge Cooling Pond Sludges and Resins Project.

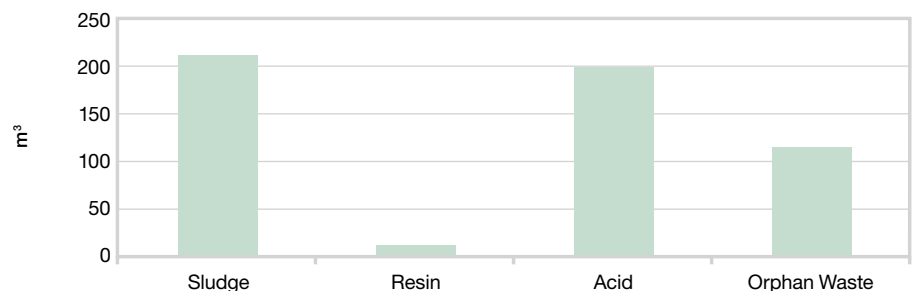
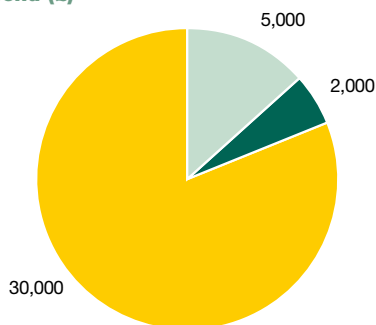


Figure 25-37 – Breakdown of local area charity, sponsorship and socio-economic development projected spend (£)



Key	Description
Light Green	Charity and Donations
Dark Green	Sponsorship Requests
Yellow	Socio-Economic Development Funding

Conclusion

This Lifetime Plan details the work required to complete the decommissioning of Hunterston A and demonstrates commitment to the continued management of a safe, secure and environmentally responsible site at Hunterston A Site with robust plans to complete the decommissioning project on the earliest possible timescale.

Decommissioning and clean-up of the Hunterston A Site represents complex and challenging work. The scope, schedule and costs for individual work elements have been described in this plan, together with assumptions that have had to be made where information is incomplete. The plan identifies risks and opportunities that may arise during the work.

The current focus for the site is the development of facilities to enable the retrieval, processing, packaging and storage of ILW.

Due allowance has been made within the plan to maintain the high standards of safety, security and care for the environment that has been associated with Hunterston A throughout its life and is expected by stakeholders.

Effective programme delivery is complemented by development of innovative decommissioning techniques to minimise programme duration and provide cost-effective discharge of liabilities and value for the customer.

Socio-Economic development in the local community is important for the Hunterston A Management Team in all decision making.



The main new construction project is the provision of an ILW Store. The Store will enable packaged operational ILW to be stored on site until transport to a national ILW repository during the FSC phase of decommissioning.



One of the significant hazard reduction opportunities at Hunterston A is the deplanting and decontamination of the Precipitator Tower followed by the demolition of the building.



Recovery and packaging of Solid ILW. This project is currently seen as a significant activity on the programme critical path.



The installation of the MAETP followed by emptying, cleaning and demolition of the pond and its containment building are major works which offer significant safety and environmental hazard reduction.



During the Care & Maintenance phase the site will be in a passive state, allowing natural radiation decay to reduce the radiological hazards within the reactors.



On completion of the FSC phase the site will be cleared of all structures, landscaped and grassed allowing its reuse.



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