



MINISTRY OF DEFENCE

Defence Equipment & Support Nuclear Weapons IPT

**UK ENRICHED URANIUM (EU) CAPABILITY
INVESTMENT APPRAISAL**



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DPA/NW/PGL/101/319/01/IA

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Table of Contents

OBJECTIVES OF THE INVESTMENT 6

EXPLANATION OF THE REQUIREMENT 6

 MATERIAL AGEING, LIFE PREDICTION AND SURVEILLANCE 6

 COMPONENT MANUFACTURE (INC. RESEARCH AND DEVELOPMENT) 6

 NAVAL FUEL FEEDSTOCK MATERIAL **ERROR! BOOKMARK NOT DEFINED.**

 STORAGE OF SPECIAL NUCLEAR MATERIAL (SNM) 6

BACKGROUND 6

SPECIALIST ADVICE 7

POSSIBLE OPTIONS 7

SCOPE OF OPTIONS 7

 OPTION A1 - 'DO NOTHING' 7

 Scope 8

 Analysis 8

 OPTION A2 – DO NOTHING EXTRA 9

 Scope 9

 Analysis 9

 OPTION A3 STRETCH CURRENT CAPABILITY 10

 Scope 10

 Analysis 10

 OPTION B – REFURBISH 11

 Scope 11

 Analysis 11

 OPTION C. 'NEW BUILD' 12

 Scope 12

 Analysis 12

 OPTION D. 'PROCURE EU PRODUCTS FROM ELSEWHERE' 13

 Scope 13

 Analysis 13

 OPTION E. 'COMBINED CAPABILITY' 14

 Scope 14

 Analysis 14

 OPTION F. RATIONALISE UK EU CAPABILITY 14

 Scope 14

 Analysis 14

SHORTLIST OF THE OPTIONS 15

SUMMARY OF COSTS 16

WHOLE LIFE COSTS (OPTION C) 16

OPTIMISM BIAS 16

SENSITIVITY ANALYSIS 17

RISK..... 17

CONFIDENCE MODELLING OF OPTION C..... 17

 COST CONFIDENCE MODEL (OPTION C ASSESSMENT PHASE) 18

 SCHEDULE CONFIDENCE MODEL (OPTION C ASSESSMENT PHASE) 18

 COST CONFIDENCE MODEL (OPTION C WHOLE PROJECT) 18

 SCHEDULE CONFIDENCE MODEL (OPTION C WHOLE PROJECT) 19

AFFORDABILITY 19

PLAN FOR POST PROJECT EVALUATION 19

RECOMMENDATION 19

SUMMARY OF COSTS 20

WHOLE LIFE COSTS (SUMMARY)..... 21

WHOLE LIFE COSTS..... 23

PLAN FOR POST PROJECT EVALUATION (ASSESSMENT PHASE)..... 24

MASTER DATA ASSUMPTIONS LIST (MDAL)..... 25

OBJECTIVES OF THE INVESTMENT

1. The objective of this investment is part of the overall objectives of the Nuclear Warhead Capability Sustainment Programme (NWCSP). The particular objective is to retrieve and restore an enduring capability to fulfil the requirements below, in respect of Enriched Uranium.

EXPLANATION OF THE REQUIREMENT

2. The requirements below are traceable to the MoD Nuclear Weapons Integrated Project Team (NW IPT) System Requirements Document (SRD) ref NWIPT/04/35/01 Issue 2 March 2006, which in turn is traceable back to the Nuclear Warhead Programme User Requirements Document (URD) version 5.1, October 2005.

Material Ageing, Life Prediction and Surveillance

3. The URD articulates the need to underwrite the safety and performance of the warhead.

[REDACTED]

Component Manufacture (Inc. Research and development)

4. [REDACTED]

Naval Fuel Feedstock Material

5. NW IPT is committed to the supply of [REDACTED] for the Naval Nuclear Propulsion Programme [REDACTED]

[REDACTED]

Storage of Special Nuclear Material (SNM)

6. The URD has a continuing requirement for the safe and secure storage of the Enriched Uranium inventory. Suitable and sufficient storage arrangements compatible with projected programme throughputs and stock levels will be an enduring requirement of the EU capability.

BACKGROUND

7. The [REDACTED] Facility Complex, located at AWE Aldermaston, is the sole current Enriched Uranium storage and processing capability supporting the UK Nuclear Deterrent. The facility was initially constructed in the 1950's and has seen various extensions over its 50 year life to support various programmes. [REDACTED]

[REDACTED] closure and decommissioning which was planned to commence in 2006 with NII approval of the AWE Decommissioning

Plan. The closure and replacement of [REDACTED] was an assumption of the original AWEML bid for the AWE Maintenance and Operating (M&O) Contract.

8. Since the agreement of the M&O contract the Nuclear Warheads Capability Sustainment Programme has been instituted [REDACTED]. In order to meet the NWCSP and to meet the requirements of Nuclear Installations Inspectorate (NII) Licence Condition 15, the [REDACTED] facility has undergone a Periodic Review of Safety (PRS), which reported in December 2006. The PRS justified a further ten years of operational life until 2016 subject to the rectification of certain shortfalls.

9. Design Acceptance Reports are currently being prepared which will report the facility condition, highlighting shortfalls against applicable modern standards for engineering and nuclear safety. [REDACTED]

SPECIALIST ADVICE

10. Several sources of specialist advice have been utilised in the compilation of this Investment Appraisal. AWE has provided technical information and costings of the options. Pricing and Forecasting Group (PFG) have validated the cost and schedule models and the scrutineer community in general have given feedback and guidance throughout this phase of the approvals process.

POSSIBLE OPTIONS

11. Eight options are considered within this document:
- A1 Do nothing
 - A2 Do nothing extra
 - A3 Stretch current capability
 - B Refurbish
 - C New build
 - D Procure EU products from elsewhere.
 - E Combine capability [REDACTED]
 - F Rationalise UK EU Capability.

SCOPE OF OPTIONS

Option A1, A2 and A3 overview

12. Though there are subtle differences between them, Option A1, A2 and A3 are variants on the Do Nothing option. However the result is the same in each case; i.e. that the existing facility must be re-kitted and achieve the award of a further Authority to Operate to permit operations until 2016. [REDACTED]

[REDACTED] In addition all three options require the building of a new storage facility to store the resulting

inventory of EU. This storage would be for an indefinite period as the half life of Uranium is 713,000,000 years. The whole life costs and in particular the operating costs of the store have been projected out to 2051 purely as an illustration, to enable a direct comparison to the operating costs of Option C.

Option A1 - 'Do Nothing'

Scope

13. The 'Do nothing' option is to do no work on the existing AWE Enriched Uranium facility. This means that the status of the existing facility would remain as it is today (i.e. no investment on re-kitting or refurbishment) and allow the Operating License to lapse in 2006. It is assumed that the facility will begin POCO (Post Operative Clean Out), decommissioning and demolition to a brown-field site as soon as practicable from this point.

14. The scope of this option can therefore be summarised as:

- a. Carry out necessary work to extend life of facility to 2016
- b. Prepare and seek regulatory approval of safety case for short term 'Care and Maintenance'
- c. Create decommissioning Safety Case and obtain agreement from NII
- d. Enduring storage of the Enriched Uranium stockpile in a new store
- e. Post Operative Clean Out (POCO)
- f. Carry out necessary pre-works
- g. Decommission
- h. Demolish
- i. Remediate site back to a brown-field status.

Analysis

15. [Redacted]

16. [Redacted]

17. [Redacted]

- a. [Redacted]

- b. [REDACTED]
- c. [REDACTED]
- d. [REDACTED]
- e. [REDACTED]
- f. [REDACTED]
- g. [REDACTED]

18. Option A1 Do nothing is not a recommended option.

Option A2 – Do Nothing Extra

Scope

19. This option can be described as maintaining current investment in existing capability accepting a decline over time. The scope of this option is therefore:

- a. Continue operations at the present level
- b. Carry out Periodic Review of Safety but do not invest in improvements required.

Analysis

20. [REDACTED]

21. [REDACTED]

22. [REDACTED]

23. [REDACTED]
- a. [REDACTED]
 - b. [REDACTED]
 - c. [REDACTED]
 - d. [REDACTED]
 - e. [REDACTED]
 - f. [REDACTED]
 - g. [REDACTED]

24. Option A2 Do nothing extra is not a recommended option.

Option A3 Stretch Current Capability

Scope

25. This option can be described as maintaining current investment in existing facility whilst

- a. Maintain the current capability but utilise it for as long as possible whilst minimising investment.
- b. Carry out Periodic Review of Safety but do not invest in improvements required.
- c.

Analysis

26.

- a.
- b.
- c.
- d.
- e.

27.

28. Option A3 Stretch Current Capability is not a recommended option.

Option B – Refurbish

Scope

29. This option is to refurbish the current AWE EU capabilities to deliver an enduring EU capability. The scope of this option is described as

- a. Provide a facility with the capability to deliver all Enriched Uranium products and services for the Warhead Programme.
- b. Deliver a Nuclear licensable storage and processing facility with civil structure meeting modern standards.
- c. Deliver a modern facility in which all processes will conform to Best Practical Means (BPM) and Best Practical Environmental Option (BPEO).

Analysis

30. [Redacted]

31. [Redacted]

32. [Redacted]

33. [Redacted]

- a. [Redacted]
- b. [Redacted]
- c. [Redacted]
- d. [Redacted]

e.

34. Option B Refurbish is not a recommended option

Option C. 'New Build'

Scope

35. This option is to build a new EU facility on a brown-field site at AWE Aldermaston.

Analysis

36. This option will fully satisfy the requirements of the NW IPT SRD and hence the URD. The new facility will be designed and built to satisfy all relevant legislation and be environmentally sustainable in accordance with the MoD Sustainability Handbook. The design will also facilitate safe and efficient decommissioning when required.

37. Option C Requirement/Capacity Graph

38. [REDACTED]

39. [REDACTED]

40. [REDACTED]

41. [REDACTED]

42. Option C, New Build is the recommended option.

Option D. 'Procure EU products from elsewhere'.

Scope

43. This option involves the procurement of EU products by MoD from sources other than AWE. This procurement would only satisfy part of the requirements of the SRD and URD. Additional capabilities would need to be provided to satisfy the other requirements.

Analysis

44. [REDACTED]

a. [REDACTED]

b. [REDACTED]

c. [REDACTED]

d. [REDACTED]

45. [REDACTED]

[REDACTED]

46. Option D, Procure EU products from elsewhere is not a recommended option

Option E. 'Combined Capability'

Scope

47. This option involves the combination of the capability to satisfy many requirements of the SRD and URD, [REDACTED] in one facility at AWE.

Analysis

48. [REDACTED]

- a. [REDACTED]
- b. [REDACTED]
- c. [REDACTED]
- d. [REDACTED]
- e. [REDACTED]
- f. [REDACTED]
- g. [REDACTED]

49. [REDACTED]

51. Option E, Combine facilities is not a recommended option.

Option F. Rationalise UK EU Capability

Scope

52. This option would involve examining other sites within the UK and investigating the possible rationalisation of facilities on these sites to include an EU capability.

Analysis

53. [REDACTED]

54.

- a.
- b.
- c.
- d.
- e.
- f.
- g.
- h.
- i.
- j.

55.

- a.
- b.
- c.
- d.

56.

- a.
- b.
- c.
- d.
- e.
- f.
- g.
- h.
- i.
- j.

SHORTLIST OF THE OPTIONS

57. A full and comprehensive analysis of the options above is provided in the Options Analysis Document ref DPA/NW/PGL/101/319/01 dated 20/11/06. This document concluded that Option C, New Build is the recommended option, however the core of this analysis is repeated in this document for completeness.

58. This Investment Appraisal will provide detailed costs associated with options A1, A2, A3, B and C. Confidence Modelling for Option C has been carried out and the results recorded in this document. The costs for Option D are based on the costs for Option C. An assumption has been made that the difference between these options is that a reduced manufacturing capability would be required within the facility for Option D. The cost of Option D has therefore been estimated as being 98% of the cost of Option C. However, the cost of procurement of the products inherent in Option D can only be estimated and is shown in square brackets in the table. As this results in a rough order of magnitude cost for Option D, net present value has not been calculated

59. Option E and F have not been costed in this Investment Appraisal. The Option Analysis document has fully explored these options and discounted them.

SUMMARY OF COSTS

60. Below is a summary of the costs associated with each option at 2006 prices and expressed as Net Present Value (NPV). A fuller breakdown of these costs is shown at Annex A. Assumptions implicit in the compilation of these costs are detailed in the Master Data Assumptions List (MDAL) at Annex E.

	£ REAL @ 2006 PRICES	£ NPV @3.5%
OPTION A1 - DO NOTHING		
OPTION A2 - DO NOTHING EXTRA		
OPTION A3 - STRETCH CAPABILITY		
OPTION B - FULL REFURBISHMENT		
OPTION C - NEW BUILD FACILITY		
OPTION D- PROCURE EU PRODUCTS		
OPTION E -COMBINE CAPABILITY		
OPTION F -RATIONALISE UK EU CAPABILITY		

WHOLE LIFE COSTS (OPTION C)

61. Whole life costs for Option C are tabulated at Annex C

OPTIMISM BIAS

62. An Optimism Bias check has been conducted by Pricing and Forecasting Group (PFG) on capital cost and schedule date estimates to In Service Date (ISD). To obtain a single deterministic figure without risk, the indicative risk allowance of [redacted] contained within the facility build base estimate has been removed. Using responses from the NW

IPT EU project team the confidence figures pass the Optimism Bias check for both time and schedule indicating that the estimates include an appropriate provision for risk and uncertainty. It should be noted that the Optimism Bias exercise has been carried out against the Equipment Model due to the nature of the process equipment and building design. This is a more stringent assessment than the Non-Standard Building assessment model. The results generated are shown in the tables below. These costs are for the combined assessment and demonstration/manufacture stage but exclude the AWE fee

Optimism Bias check results - Cost

	Single Deterministic Figure + OB Factor	90% Confidence Value
Anticipated Business Case status at submission stage		

Optimism Bias check results - Schedule

	Single Deterministic Figure + OB Factor	90% Confidence Value
Anticipated Business Case status at submission stage	July 2016	Feb 2017

SENSITIVITY ANALYSIS

63. The Option Analysis Document ref DPA/NW/PGL/101/319/01 dated 20/11/06 has detailed the merits and demerits of each option and has concluded the only feasible option to be Option C. On that basis Sensitivity Analysis would not produce meaningful results and has not been carried out.

RISK

64. Risk registers have been produced by for options A, B and C, and are detailed in document ref DMP/EUP/LL/19098944 version 9.

PROCUREMENT STRATEGY

65. The IAB approved the procurement strategy for NWCSP in February 2005, this provided for the continuation of the contract with AWE Management Limited (AWEML) under a firm target cost incentive fee price (subject to maximum price), with revisions to the terms and conditions for a 3-year period to March 2008. The EU project assessment phase will be conducted under this contract within the existing price.

66. The NWCSP approval required a review note to consider the contractual arrangements beyond March 2008. [REDACTED]
 [REDACTED] This review note has been approved by the IAB and is awaiting Ministerial and HM Treasury endorsement.

67. The NWCSP approval provided for the demonstration and manufacture phases of selected major projects to be separately priced within the existing contract. Post main gate approval, the EU demonstration and manufacture phase will be placed with [REDACTED]
 [REDACTED]

68. AWE Plc sought bids through competition from industry to support the NWCSP and selected AMEC (NNC), RWE Nukem and WS Atkins as framework suppliers for complex regulated facility projects. AMEC (NNC) was selected as the EU facility design contractor on the basis of their skills and resource profile.

69. Private Finance Initiative (PFI) has been rejected as the requirement cannot be delivered as a standalone project and there are no commercial synergies. As AWE Plc would remain the nuclear site licensee there would be no opportunity to transfer risk to a PFI contractor.

CONFIDENCE MODELLING OF OPTION C

70. The risks identified were applied to the project schedule and assigned to the appropriate activities. Confidence modelling was carried out using the Predict software tool. The following results were produced for the cost and schedule as affected before risk mitigation actions have been taken and post risk mitigation actions. This exercise was carried out for the Assessment phase of the project (i.e. Initial Gate to Main Gate) and for the overall project. The costs below are as recorded in the Initial Gate Business Case and include the AWE fee [REDACTED]

Cost confidence model (Option C Assessment phase)

	10% confidence	50% confidence	90% confidence
Post mitigating action	£45,700,000	£48,000,000	£50,400,000

Schedule Confidence Model (Option C Assessment phase)

	10% confidence	50% confidence	90% confidence
Post mitigating action	Mar-2010	May-2010	Aug-2010

Cost Confidence Model (Option C Whole project)

	10% confidence	50% confidence	90% confidence
Post mitigating action	[REDACTED]		

Schedule Confidence Model (Option C Whole project)

	10% confidence	50% confidence	90% confidence
Post mitigating action	Jan-2016	July-2016	Feb-2017

AFFORDABILITY

71. The Assessment Phase work is funded to the end of FY 08/09. Funding until FY10/11 has been sought within the Comprehensive Spending Review (CSR) which costs are within the baseline review assumptions and affordable. It is expected that by Main Gate the overall NWCSP cost will have been funded.

PLAN FOR POST PROJECT EVALUATION

72. The project will be subject to a Post Project evaluation in accordance with the requirements of Appraisal and Evaluation in Central Government (Green Book). The content of the evaluation will be in accordance with JSP 507 and the Acquisition Management System.

73. The EU Project will present two principal opportunities for evaluation and for using the experience and understanding to improve future performance, for both the EU Project and for other NW IPT projects at AWE.

74. The Enriched Uranium Project is one of the first major AWE project to go through the Investment Appraisal Board Initial Gate process. As such it will help establish the key features of the process, including the interfaces between NWIPT AWE and PFG. The experience of this process will be given to other projects through the established DPA Learning from Experience (LFE) process and the AWE Review, Learn and Improve (RLI) process.

75. The IAB Initial Gate process will review aspects of the EU Project over and above those examined by existing AWE review processes. Any issues arising from the Initial Gate review will be analysed and appropriate actions will be taken to maintain efficient project progress. The lessons learned through the Initial Gate process will also be captured and will inform the Main Gate process in due course.

76. A plan for Post Project Review workshops and presentations is included at Annex D.

RECOMMENDATION

77. This Investment Appraisal supported by the evidence provided by the Option Analysis Document ref DPA/NW/PGL/101/319/01 dated 20/11/06 recommends that Option C, New Build is adopted as the solution to the continuation of the UK Enriched Uranium Capability.

SUMMARY OF COSTS

	C Capital	D Decom. & Demolish	O Operations	Total
	£ REAL @ 2006 PRICES			
OPTION A1 - DO NOTHING				
OPTION A2 - DO NOTHING EXTRA				
OPTION A3 - STRETCH CAPABILITY				
OPTION B - FULL REFURBISHMENT				
OPTION C - NEW BUILD FACILITY				
OPTION D PROCURE EU PRODUCTS				
% breakdown				
OPTION A - DO NOTHING - LOSS OF CAPABILITY				
OPTION A2 - DO NOTHING EXTRA				
OPTION A3 - STRETCH CAPABILITY				
OPTION B - FULL REFURBISHMENT				
OPTION C - NEW BUILD FACILITY				
OPTION D PROCURE EU PRODUCTS				
	£ NPV @ 3.5%			
OPTION A - DO NOTHING - LOSS OF CAPABILITY				
OPTION A2 - DO NOTHING EXTRA				
OPTION A3 - STRETCH CAPABILITY				
OPTION B - FULL REFURBISHMENT				
OPTION C - NEW BUILD FACILITY				

WHOLE LIFE COSTS (SUMMARY)

	£000's Total (2006 prices)	£000's Total (NPV prices)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Cumulative profile													
Option A1													
Cumulative profile													
Option A2													
Cumulative profile													
Option A3													
Cumulative profile													
Option B													
Cumulative profile													
Option C - Most likely													
Cumulative profile													
Option C - Minimum													
Cumulative profile													
Option C - Maximum													

	2020	2025	2030	2035	2040	2045	2050	2055	2060	2064
Cumulative profile										
Option A1										
Cumulative profile										
Option A2										
Cumulative profile										
Option A3										
Cumulative profile										
Option B										
Cumulative profile										
Option C – Most likely										
Cumulative profile										
Option C – Minimum										
Cumulative profile										
Option C – Maximum										

WHOLE LIFE COSTS

(Excel spreadsheet on separate file)

CONFIDENTIAL

PLAN FOR POST PROJECT EVALUATION (ASSESSMENT PHASE)

Activity	June 07	Jan 08	June 08	Jan 09	June 09	Jan 10	June 10
NW IPT Workshop	June 07	Jan 08	June 08	Jan 09	June 09	Jan 10	June 10
AWE Project Team Workshop	June 07	Jan 08	June 08	Jan 09	June 09	Jan 10	June 10
Joint Stakeholder Workshop	July 07	Feb 08	July 08	Feb 09	July 09	Feb 10	July 10
AWE Review Learn and Improve Presentation	Aug 07		Aug 08		Aug 09		Aug 10
NW IPT Learn from Experience Presentation	Aug 07		Aug 08		Aug 09		Aug 10

MASTER DATA ASSUMPTIONS LIST (MDAL)

1. The current Safe Operations Certificate runs out in 2007. The NII have agreed in principle to extending the PRS to 2016 based on the New build option strategy, which should enter service at or around this date.
2. [REDACTED]
3. [REDACTED]
4. [REDACTED]
5. The in-service phase of the project is limited to years of operation from ATO to start decommissioning.
6. The major items of equipment to be procured are: Furnaces, Gloveboxes & HATC. How AWE option down through the supply – chain to the Prime Contractor.
7. [REDACTED]
8. The new build option will include for the decontamination, demolition & removal of waste of this existing facility through to brown field status (i.e. grubbing up of the slab).
9. The New build project has already been allocated a dedicated envelope of space. The production facility will carry on (albeit on a limited life) and it will not impact the New build facility.
10. The new facility is circa 18,000m2 GIFA including integrated materials store.
11. [REDACTED]
12. The facility has been used for the manufacture & fabrication of a variety of different materials over its lifetime. This has left some legacy issues in the form of contaminants etc. which have leached into walls, inaccessible places & into plant & equipment.
13. The business case reference is; DMP/EUP/LL3198893
14. The Procurement Strategy reference is; EU Project Procurement Strategy DMP/EUP/LL3111564
15. The recommended procurement strategy advises a 2 stage Design & Build Contract.
16. The MDAL is held through the "DOORS" module in project. It exists as a "live" working document which will capture & clarify additional assumptions & Exclusions as & when they arise.
17. [REDACTED]
18. [REDACTED]
19. [REDACTED]
20. [REDACTED]
21. [REDACTED]
22. End point of decommissioning is brown field site
23. BPM agreement is reached
24. [REDACTED]
25. [REDACTED]
26. [REDACTED]
27. [REDACTED]
28. [REDACTED]
29. <10% component manufacturing reject rate.
30. [REDACTED]
31. AWE Naval Nuclear Propulsion Programme up to and beyond [2030]
32. [REDACTED]
33. Cannot submit site development plan (SDP) to AWE (9th October)
34. Cannot submit scoping report until after site development plan is submitted
35. NII stated review periods for safety case documentation from meeting 25/07/05
36. No internal (i.e. ARTL) or external (i.e. NII) approval conflicts with the programme of other projects

37. PRBs are held on the 2nd Tuesday of each month
38. The building contains no residual assets & no GFE (Government Furnished Equipment)
39. All assets are owned by AWE ML
40. Trained & competent technicians
41. [REDACTED]
42. [REDACTED]
43. ISO containers are assumed to be free issue & unlimited supply
44. RAMSCAP containers are assumed to be free issue
45. [REDACTED]
46. [REDACTED]
47. Labour resource remains available throughout project duration and can flex up or down (+/- 100%) as requirements change
48. [REDACTED]
49. Regulatory requirements & discharge limits remain constant over the period
50. Information Sources include: EUP ROM Estimate 16/3/05 - DMP/EUP/LL3105423
51. [REDACTED]
52. [REDACTED]
53. NSPA perimeter fence access remains same over project operating life
54. VAT is excluded from all cost modelling assumptions
55. Energy and utilities costs associated with D&D are included within the D&D figures
56. There is no cashflow restraint on LTC (Long Term Costs)
57. Overhead calculation on AWE does not alter over the Whole project lifecycle period
58. Funding continuity is provided post-submission to support MoD during IAB approval process
59. POCO resource requirements estimated at [REDACTED] of current levels, facilities costs terminate at commencement of POCO
60. All facility staff will be reassigned duties elsewhere on site; no redundancy or retraining costs are included
61. Funding is consistent with project estimates and programme
62. No business rates are payable whilst decommissioning
63. Sunk costs prior to December 2006 are excluded
64. Clean waste / spoil (building material) & removed topsoil has no residual value
65. NPV Discount Rate = 3.5% per annum (Treasury Green Book)
66. Construction working hours are 45 hours (5 days at 9 hours)
67. Minimal delay in site access routines (workers and deliveries)
68. Works areas security classification suitable for workers security clearance (aiming for lowest level requirement for construction staff)
69. On and off site logistics provisions available in time to support construction programmes. This will include
- Day and night accommodation
 - Parking (on and off site)
 - Park and ride
 - clearly defined access routes and procedures
 - supply chain (plant & materials)
70. Cost base date 1Q2006 price levels
71. Working week is 40 hours
72. [REDACTED]
73. No indexation or escalation costs have been applied to costs during the WLC estimate period
74. [REDACTED]
75. In the event that Option A is selected knowledge / capability may be lost to AWE resulting in difficulties re-entering the market at a later date and high re-entry costs
76. All insurances are excluded from the scope of this assessment
77. The WLC includes decommissioning costs
78. Assume new build facility and store are designed for ease of decommissioning
79. No severance is payable at the completion of the project
80. Facilities staff can be redeployed elsewhere during redevelopment of [REDACTED] area
81. Allowances have been included for decommissioning labour
82. Basis of Calculation of Support Services Operating Costs: For human resources a working

year has been taken as 1700 hours net of holidays and sickness. The rates provided are inclusive of all on-costs.

- 83. [REDACTED]
- 84. In the Whole Life Cost models capital costs that are programmed over several years are evenly spread taking no account of estimated S-curve - refer to project specific cashflow forecasts
- 85. There will be a minimum level of Project PM support during the store clean out phase (2 men per year)
- 86. WLC models exclude sunk costs
- 87. Excludes disposal on - costs (DRIGG etc.)
- 88. There are no technology spin - offs from the project
- 89. Once facility is re-built, the original store will require demolition
- 90. New build option at existing location will be seismically qualified
- 91. Site Security accept the re-build option on its existing plot with no caveats or constraints imposed
- 92. The new facility will adopt the current packaging.
- 93. [REDACTED]
- 94. [REDACTED]
- 95. [REDACTED]
- 96. Provide Waste Management System (WMGT)
- 97. The data available for feedstock will be correct.
- 98. Major maintenance will be performed from outside the facility
- 99. Maintenance equipment will be provided by Operations.
- 100. Assumption that the WDA will set/determine the types of trials required in the new facility during commissioning
- 101. [REDACTED]
- 102. [REDACTED]
- 103. Cost of any project team accommodation move will be borne by directorate
- 104. Sponsor requirements are complete and we will design accordingly
- 105. New facility will be accommodated in a single building (the accommodation block may be linked)
- 106. C&I standard systems will be the norm
- 107. Do Nothing - assumes closure imminently - includes decommissioning costs
- 108. The furnace in the new facility will require 415 volts maximum
- 109. Uranium strategy will provide evacuation centre and route, not the EU project
- 110. Accommodation and related infrastructure for contractors will not be provided by EUP
- 111. Assumption that we can design 'safe by shape'
- 112. Simulation model will define material movements required
- 113. Buy in to new technology will be obtained providing it is ALARP
- 114. [REDACTED]
- 115. [REDACTED]
- 116. [REDACTED]
- 117. EUP will fund recruitment for new facility
- 118. Facility will be designed for technician level staff
- 119. Emergency control point(s) are part of EUP
- 120. Phased delivery of assets
- 121. An ring fenced (island) site will be used for construction
- 122. An EIA is required
- 123. IAB approval is not subject to successful planning application
- 124. [REDACTED]
- 125. [REDACTED]
- 126. [REDACTED]
- 127. [REDACTED]
- 128. All charge material will be appropriately sized to fit the crucible (separate campaign for size reduction)
- 129. [REDACTED]

- 130. [REDACTED]
- 131. [REDACTED]
- 132. [REDACTED]
- 133. [REDACTED]
- 134. [REDACTED]
- 135. Gas supplies (except for Nitrogen) will be used from a local gas source (i.e. bottles/tanks)
- 136. Nitrogen supplies for the EU are drawn from the site supply.
- 137. [REDACTED]
- 138. The new EU facilities will take steam and hot water from the AWE district system
- 139. Tensile test equipment will require access to both the front (operator) and the rear (maintenance), therefore it can't be placed flat against a wall.
- 140. [REDACTED]
- 141. [REDACTED]
- 142. [REDACTED]
- 143. [REDACTED]
- 144. The EUP will not take responsibility for creating or moving a police gate
- 145. [REDACTED]
- 146. [REDACTED]
- 147. [REDACTED]
- 148. [REDACTED]
- 149. [REDACTED]
- 150. [REDACTED]
- 151. [REDACTED]
- 152. [REDACTED]
- 153. [REDACTED]
- 154. Facility is designed and constructed to enable planned inactive and active commissioning strategy
- 155. [REDACTED]
- 156. Criticality limits are resolved by FEL Gate 2
- 157. [REDACTED]
- 158. [REDACTED]
- 159. [REDACTED]
- 160. [REDACTED]
- 161. Building Services detailed design will be in-house
- 162. [REDACTED]
- 163. [REDACTED]
- 164. [REDACTED]
- 165. [REDACTED]
- 166. [REDACTED]

- 167. [REDACTED]
- 168. [REDACTED]
- 169. [REDACTED]
- 170. [REDACTED]
- 171. A clean build environment will be maintained throughout the fitting out phase
- 172. [REDACTED]
- 173. [REDACTED]
- 174. [REDACTED]
- 175. [REDACTED]
- 176. [REDACTED]
- 177. The waste is characterised within the interim storage period .
- 178. [REDACTED]
- 179. [REDACTED]
- 180. [REDACTED]
- 181. [REDACTED]
- 182. Disposal routes will be identified.
- 183. Quantities of waste will be generated.
- 184. Position of the new EU facilities is to be situated opposite building A91.1.
- 185. [REDACTED]
- 186. NSPA security arrangements are not applicable during construction as the site is outside the controlled area
- 187. [REDACTED]
- 188. All labour used during Construction & decommissioning of New Build EUP will be subject to basic security check only
- 189. Adequate utilities are available adjacent to the new facility
- 190. [REDACTED]
- 191. There will be no change to Sponsor requirements
- 192. [REDACTED]
- 193. [REDACTED]
- 194. [REDACTED]
- 195. [REDACTED]
- 196. Facility specific security measures remain constant over the operating period
- 197. [REDACTED]
- 198. [REDACTED]
- 199. [REDACTED]
- 200. [REDACTED]
- 201. No unknown asbestos exists within the building. [REDACTED]
- 202. [REDACTED]
- 203. [REDACTED]
- 204. Disposal route is defined & there are no issues of access
- 205. [REDACTED]
- 206. Approximate size of new facility [REDACTED]
- 207. Demolition contractor's site lay-down area will be outside the NSPA

- 208. [REDACTED]
- 209. The end point of decommissioning will be a brown field site
- 210. [REDACTED]
- 211. [REDACTED]
- 212. [REDACTED]
- 213. [REDACTED] The only cost associated with this is the Project Management
- 214. [REDACTED]
- 215. [REDACTED]
- 216. [REDACTED]
- 217. [REDACTED]
- 218. [REDACTED]
- 219. Site wide construction logistic co-ordination will not affect EU progress
- 220. Public debate and potential public inquiry on site wide developments will not affect EU progress
- 221. EU progress will not be hindered by the lack of significant highway construction/modification in the local area over the next 7 to 8 years
- 222. Assumption that planning permission is granted without major restrictions
- 223. [REDACTED]
- 224. [REDACTED]
- 225. [REDACTED]
- 226. Must complete all active commissioning prior to the completion of CSR Active and POSR
- 227. PRB sanction acceleration of active commissioning during FEL3 activities (inactive commissioning)
- 228. 9 month planning review
- 229. No public inquiry
- 230. Installation schedule does not conflict with equipment manufacture lead times
- 231. Tender periods will be minimised and have no impact on the critical path
- 232. Detailed Design starts pre FEL2
- 233. [REDACTED]
- 234. [REDACTED]
- 235. [REDACTED]
- 236. [REDACTED]
- 237. [REDACTED]
- 238. [REDACTED]
- 239. [REDACTED]
- 240. Failures and defects that occur during commissioning will be dealt with on a "same day".
- 241. Off site testing will be maximised to reduce the likelihood of on site failure
- 242. The installation will be right first time
- 243. The design will be right first time
- 244. Planning Approval will be required by the PRB at FEL Gate 3 to proceed
- 245. Off site activities are to be maximised to optimise the site based implementation phase
- 246. [REDACTED]
- 247. No mobilisation period for Design House
- 248. System integration and testing at works as well as modularisation where practical
- 249. Design and safety case preparation are fully integrated
- 250. [REDACTED]
- 251. [REDACTED]

- 252. [REDACTED]
- 253. Nil not a hold point, Building construction can begin in advance of completion of process design
- 254. [REDACTED]
- 255. New build programme 2006
- 256. [REDACTED]
- 257. [REDACTED]
- 258. Excludes Post room services
- 259. Excludes Conference/Meeting Room Management
- 260. Excludes Training + Room Services
- 261. Excludes Reception
- 262. Excludes Switchboard
- 263. Excludes Help Desk & Software
- 264. Excludes Pest Control
- 265. Excludes Environmental
- 266. Excludes Quality
- 267. Excludes Sub-Contractor Interface
- 268. Excludes Business Continuity
- 269. Excludes Archive Storage & Retrieval
- 270. Excludes Photocopying & Printing Services
- 271. Excludes Health Physics
- 272. Excludes Surveys and specialist reports
- 273. Excludes Business Rates
- 274. Excludes Furnace
- 275. Excludes IT Service Contract
- 276. Excludes Computer peripherals
- 277. Excludes Consumables
- 278. Excludes Photocopiers, Fax etc.
- 279. Excludes Bottled Air / gas
- 280. [REDACTED]
- 281. [REDACTED]
- 282. [REDACTED]
- 283. [REDACTED]
- 284. Facilities staff can be redeployed elsewhere during D&D of [REDACTED] area - no redundancy costs have been included
- 285. Excludes sunk costs prior to May 2006
- 286. Whole Life Cost excludes cost of manufacturing
- 287. [REDACTED]
- 288. [REDACTED]
- 289. [REDACTED]
- 290. [REDACTED]
- 291. [REDACTED]
- 292. [REDACTED]
- 293. [REDACTED]
- 294. [REDACTED]
- 295. [REDACTED]
- 296. [REDACTED]
- 297. Excludes VAT per T.Dye advice
- 298. [REDACTED]
- 299. Excludes Insurances

- 300. Excludes Soft facilities management (Incl. HR/Records/Reports/Meetings/Auxiliary)
- 301. Excludes Grounds Maintenance
- 302. Excludes Security
- 303. Excludes Transport (Incl. Park & Ride)
- 304. Excludes Car Parking
- 305. Excludes cost of manufacturing operations over the lifecycle [operations costs include only the 'support services' costs associated with the building]
- 306. Excludes Catering
- 307. No royalties are payable or included for transfer of technologies
- 308. Excludes Portering
- 309. Excludes Laundry
- 310. Excludes Telecom's
- 311. Excludes Waste management/disposal
- 312. Excludes Assurance