

NGT_AH2_08 St Fergus Cabs Asbestos Mitigation

Engineering Justification Paper

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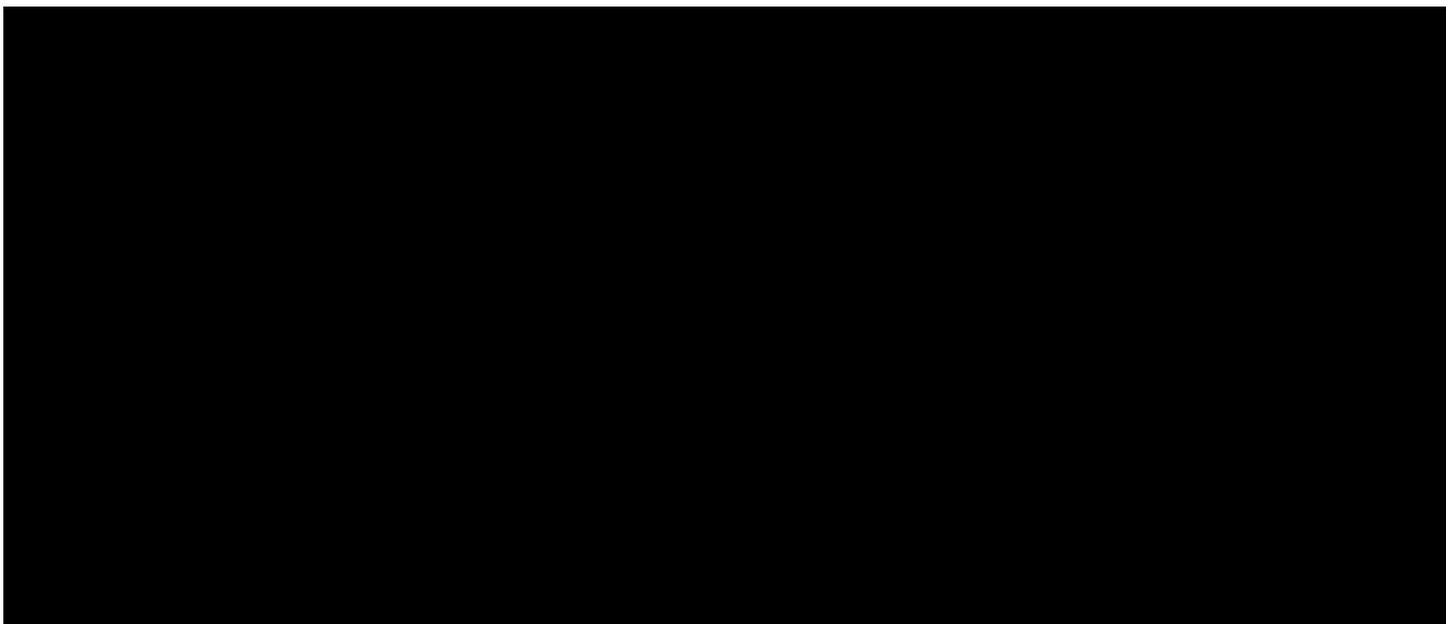


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1. Executive Summary

1. National Gas Transmission, hereafter referred to as NGT, are requesting funding to manage the asbestos risk from Galbestos cladding present at the St Fergus Gas Terminal. This is part of a holistic effort to ensure all NGT's sites are compliant with all current Health and Safety Legislation regarding asbestos. This paper is complementary to the other already submitted papers which focus on the decommissioning of Units 2C and 2D as well the refurbishment of 2B Unit in line with the St Fergus Site Strategy.
2. This is part of a suite of documents, shown in Figure 1, and should particularly be read in conjunction with the St Fergus Site Strategy and its appendices. The St Fergus Site Strategy describes the Gas Terminal's function, its criticality to the network and the proposed investments.

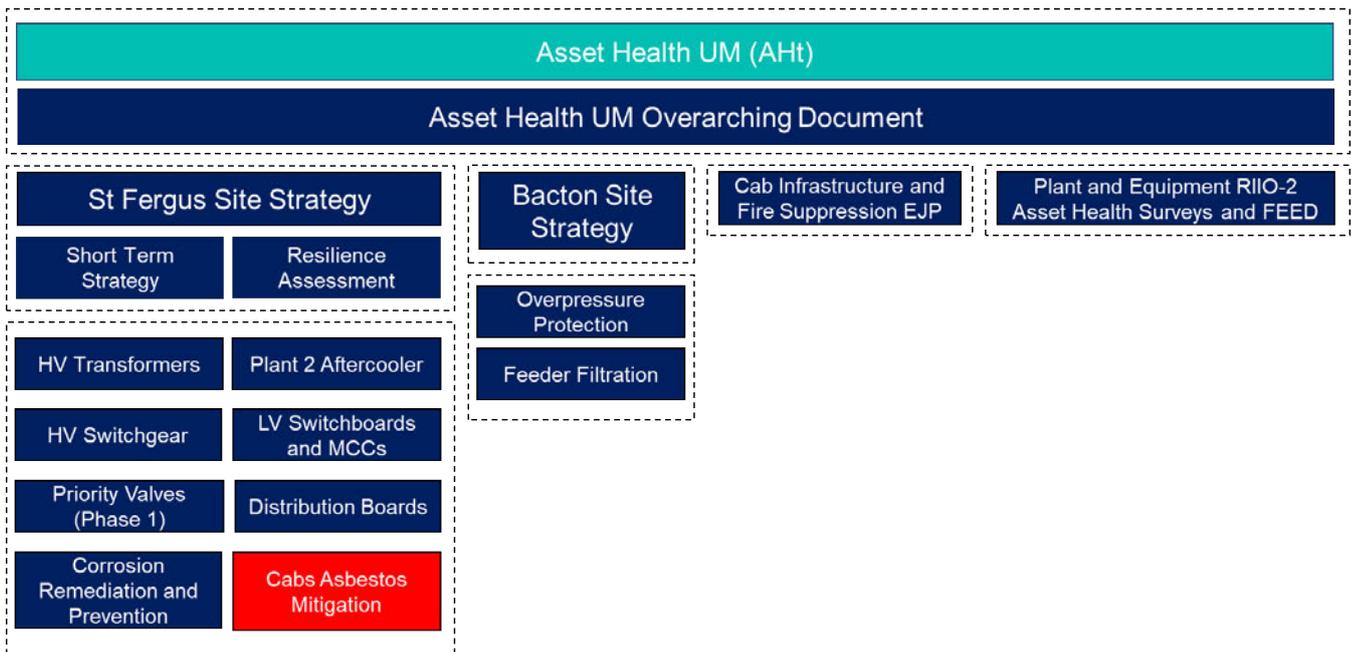


Figure 1: St Fergus Submission Documents Structure

3. In 1978, St Fergus was installed with six Avons and two RB211 compression units for the purpose of gas compression to a pressure level suitable for the National Transmission System (NTS). All the units were covered with Compressor Acoustic Buildings (CABs) which were constructed using Galbestos material for the purposes of protecting compression units from harsh weather conditions as well as to attenuate the noise levels produced when the compressors are in operation.
4. The St Fergus Site Strategy confirms the requirement for investing in Units 1A, 1B and 1D assets as these units should be in operation at least until 2030. The unavailability of these units due to asbestos safety concerns would result in reduced compression capability. On the other hand, although Unit 1C is currently not available and not part of the units required as per the Site strategy, the asbestos risk it is posing requires mitigation.
5. The RIIO-T2 business plan included all work associated with Plant 1 and Plant 2 under the Emissions Uncertainty Mechanism as the uncertainty about the future solution affected all those

assets. With a clear understanding of the required plants and units until 2050, it is now pertinent to invest in the associated Cabs to enable continued mitigation of the asbestos risk.

6. During the manufacturing of Galbestos, a mechanical bond is formed between zinc and asbestos at high temperatures. The asbestos fibres are then completely encapsulated by a protective layer of appropriate paint as a final weathering coat. When the coating is still intact, it avoids asbestos material from being exposed and released from the cladding thereby polluting the environment and becoming a risk to personnel. However, with aging the Galbestos protective coating hardens, shrinks, and flakes away and this then presents a health risk. At this point, the asbestos layer becomes exposed and becomes a real risk to the environment and personnel.
7. The use of asbestos or asbestos containing material was acceptable at the time of construction of the St Fergus Terminal. However, the importation, supply and use of all asbestos has been banned in the UK since 1999 because of its discovered hazardous nature. In response, NGT now uses asbestos free material when constructing new units.
8. Asbestos surveys have been done at the St Fergus Gas Terminal resulting in the Site Galbestos Action Plan (Appendix B), Toolbox Talk (Appendix C) and the Conditional Survey Report (Appendix D) documents. These documents have a common basis which emphasises the need to mitigate the asbestos risk currently at the terminal. The St Fergus Site Strategy confirms an ongoing requirement for four out of five Avon compressors at the site until 2030 and there is a need to ensure that the asbestos risk is mitigated for all units present on site.
9. Asbestos mitigation is already part of other Asset Health initiatives for Units 2B, 2C and 2D, hence their exclusion from this justification. Unit 2B was covered under the Avon Operability and Availability EJP which was submitted in January 2023. Units 2C and 2D are covered in the Unit Decommissioning EJP which was also submitted in January 2023. Unit 2A was replaced in RIIO-T1 and has no asbestos issues.
10. Therefore, this paper is focused on Units 1A, 1B, 1C and 1D. The options under consideration to address the asbestos issue on each of these four units are:
 - Do nothing
 - Paint the cab (using ET-150 paint to encapsulate the asbestos fibre)
 - Replace the cab
 - Decommission the unit
11. The preferred option for units 1A, 1B and 1D is painting so as to encapsulate the asbestos fibre, whilst Unit 1C is recommended for decommissioning. It is important to note that, the best suitable option and timing for each unit was considered independently depending on the current condition, cost and long-term operating plan. Where decommissioning is selected as the preferred option, the intention is to bundle with other decommissioning works.
12. Doing nothing is not a viable option due to safety concerns already raised in risk assessment reports. Decommissioning a unit would address the asbestos but would also reduce the capability and resilience of compression available on site. Replacing cabs with asbestos free material is expensive and may not be justified, depending on long term emissions control and investment decisions.

13. The indicative cost of this investment is [REDACTED] (18/19 price base). The estimated RIIO-T2 cost profile is shown in the Table 1. This project is at Stage 4.2 in the ND500 process: Option Selection. Therefore, the cost accuracy is estimated at +30/-15% in accordance with the Infrastructure and Projects Authority (IPA) cost estimating guidance.

Table 1 Current estimated RIIO-T2 spend profile

£m 18/19	FY2023	FY2024	FY2025	FY2026	Total	Comments
Cabs Asbestos Mitigation	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	

14. NGT are making this funding application for the asbestos mitigation Programme RIIO-T2 investment costs through the Asset Health Re-opener, in line with Special Condition 3.14, requesting an adjustment to the value of the AHT term for costs incurred in RIIO-T2.

15. This is summarised, along with other investments, within in the Asset Health Overarching Document provided as Product 1 of the June 2023 Asset Health Re-opener Submission. A project summary, included in Appendix A, provides key information on this project.

2. Introduction

16. The cladding to the outside of the Units in scope is corrugated metal sheeting, coated with a bituminous paint containing asbestos. Over the years the weathering of the Galbestos paint has caused it to flake and peel from the corrugated walls and resulted in fragments falling to the ground. This justification paper therefore seeks to present plans and resultant investment required to mitigate the risk that the Galbestos poses by either encapsulating the cladding or demolishing the structure and removing it from site. In addition, this document provides awareness of the issue and introduce a good safety culture to manage it until such a time as the structures are made safe or demolish.
17. In developing our investment programmes at the St Fergus Gas Terminal since the RIIO-T2 Final Determinations, we have adopted a two-phase strategy to ensure clarity between short-term asset health and long-term site operating strategy.
18. Our St Fergus Short-Term Strategy provides certainty on the terminal operation requirements, including minimum compression across Plant 1 and 2, for operation out to 2030. The long-term strategy will deliver the enduring terminal solution, including compression, required for operation beyond 2030.

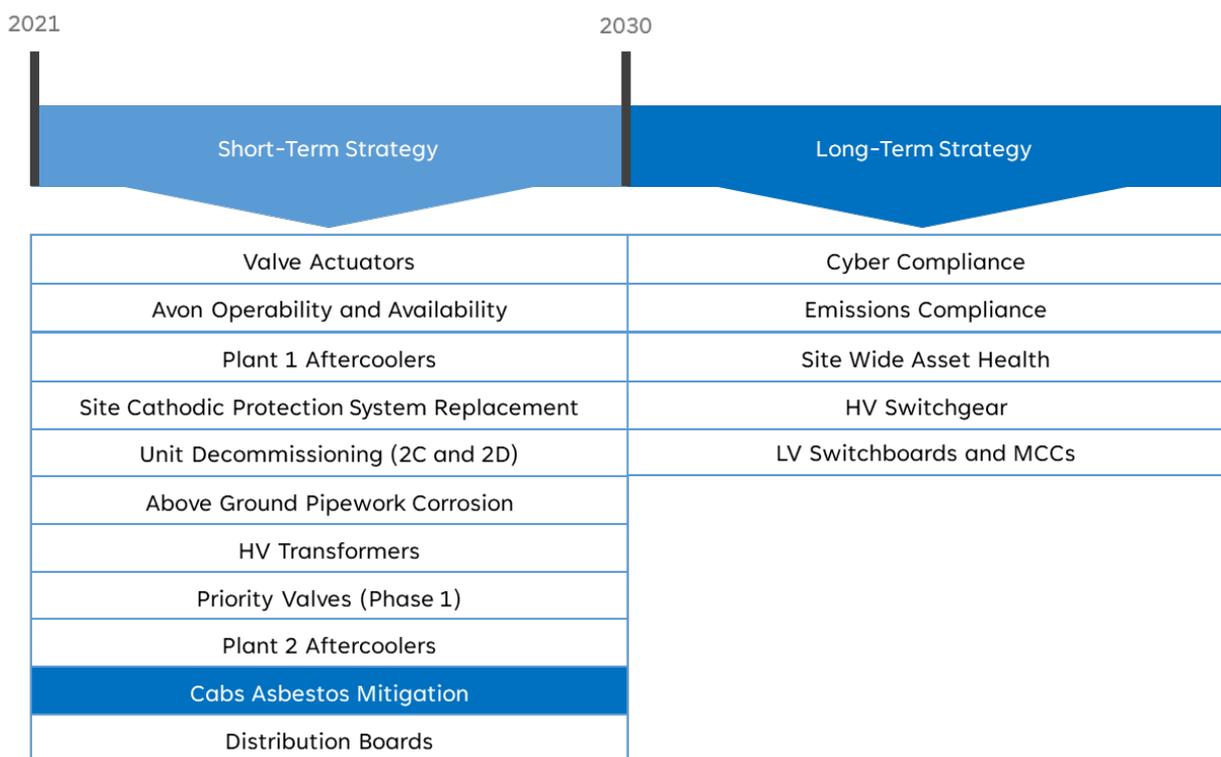


Figure 2: St Fergus Site Strategies Summary

19. The St Fergus Site Strategy outlines which compressor units are required for short-term operation and the proposed solution for the long-term. That information is fundamental to the proposals in this paper, therefore, it is important that these two documents are considered in parallel.

20. The investment outlined in this justification paper concerns the compressor units without any other predefined scope in other justification papers to address the asbestos issue. The condition of the asbestos containing cladding on these units should be surveyed, monitored, and mitigated to avoid safety and operational risks to both site personnel and site operations.
21. This paper provides the justification for the mitigation of damaged and flaking paint/bitumen on Galbestos sheeting on Units 1A, 1B, 1C and 1D. Upon completion of the mitigation processes in these specified areas, the Galbestos will then be encapsulated with adequate coating or totally removed. The objective is to ensure no asbestos material will be left exposed to the environment.
22. The condition of the cladding on the specified units has deteriorated as evidenced by the inspections done previously. Unit 1C already has badly damaged cladding and the other units are also showing signs of flaking. There is therefore an urgent need to mitigate the asbestos risk at least up to 2030 when the Long-Term Strategy comes into effect.

3. Equipment Summary

23. The background and equipment summary of St Fergus Terminal is articulated in the Site Strategy. This goes on to show the importance of this terminal to the NTS.
24. It is important to take note of the fact that the asbestos issue needs to be addressed irrespective of whether a unit is being operated or not. This is because a non-operating unit will still be at risk of emitting asbestos material as long as it is on site and not mitigated. According to the Health and Safety Executive, the duty holder (NGT in this case), is supposed to assess the risk of anyone being exposed to asbestos and prepare a plan to manage these risks. This justification paper is therefore meant to present a plan to manage the identified risk.
25. Units 1A, 1B and 1D are currently available for service at the terminal and are major components to the current operating strategy as we move towards 2030.
26. Unit 1C is currently not available for service as it stopped operation in 2021 due to a Cab Structural Integrity Issue in line with the Original Equipment Manufacturer (OEM) recommendation.
27. A high-level overview of the site layout is provided in Figure 3, highlighting the units relevant to this paper shown in green.

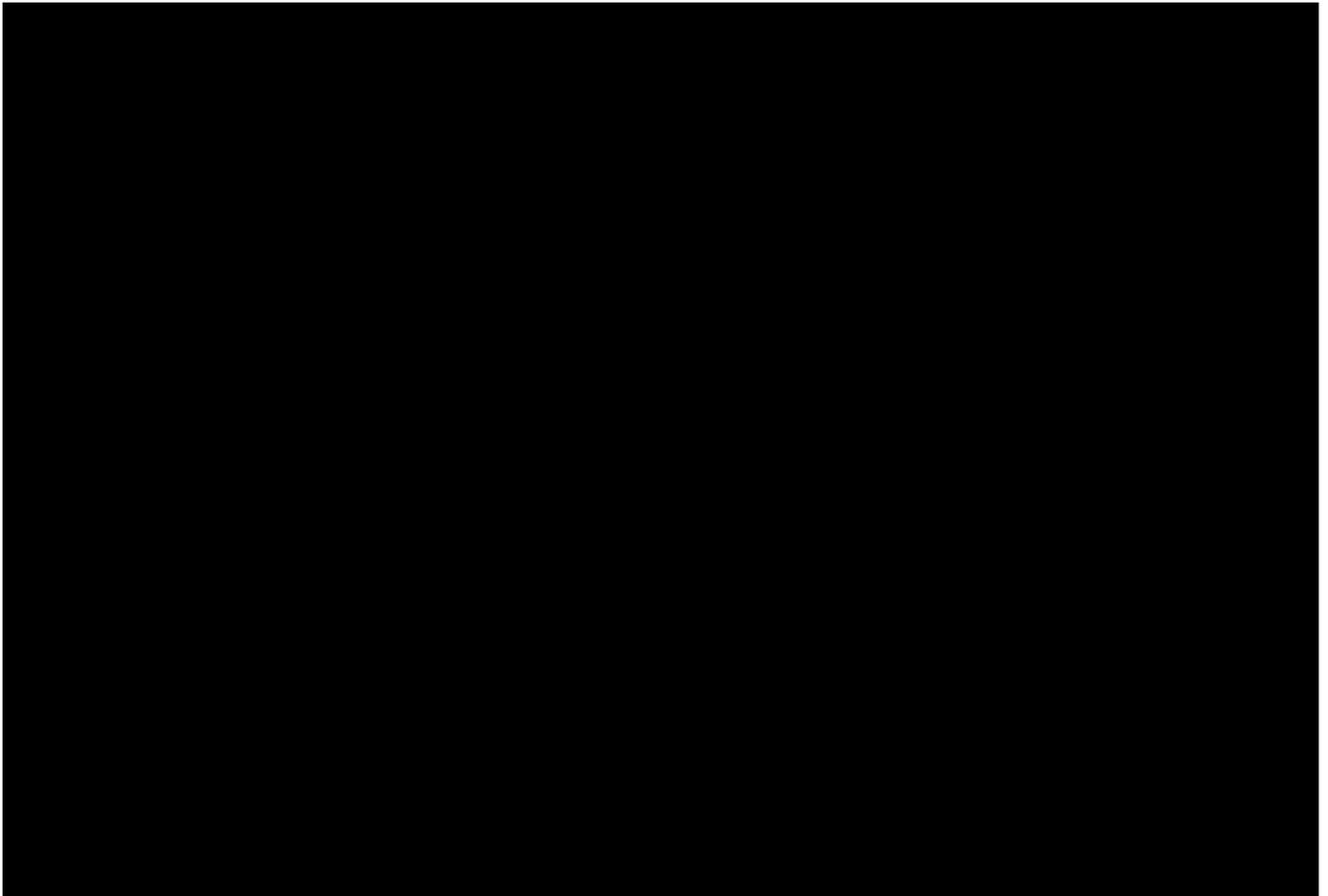


Figure 3: St Fergus Terminal Site Layout 1

4. Problem Statement

28. Asbestos is a general name given to several naturally occurring fibrous minerals that have crystallised to form fibres. Asbestos fibres do not dissolve in water or evaporate, they are resistant to heat, fire, chemical and biological degradation and are mechanically strong. Prior to being banned, asbestos was used in many products including insulation material for buildings, boilers and pipes, car brakes and floor tiles.
29. Asbestos is not considered harmful when in large pieces and undamaged. However, when damaged it can release smaller fibres that can be breathed in or swallowed. Breathing in asbestos increases the risk of diseases such as asbestosis, mesothelioma, and lung cancer. Ingesting asbestos also increases the risk of digestive system cancer.
30. The key drivers for investment in asbestos mitigation are:
- **Occupations Health Safety** – the cabs have deteriorated exposing asbestos fibre posing an occupation health risk.
 - **Legislation** – there is need to comply with the Control of Asbestos Regulations.
31. All the cabs for Units 1A, 1B, 1C and 1D contain asbestos, although they are in different states of deterioration. The St Fergus site asbestos management plan highlights that clusters of residues found throughout and around the inner and outer cabs of all the gas turbine units are asbestos containing. This is because the metal cladding is lined with an asbestos containing bitumen called Galbestos.
32. There is need for essential maintenance and inspection tasks on these cabs to avoid the risks associated with asbestos highlighted above. The pertinent requirement is to stop residual asbestos from damaged cladding from blowing around the plant resulting in health concerns to all personnel. This should be done in compliance with the Control of Asbestos Regulations requirements (stated below) and to mitigate the ultimate risk of impacting the occupational health and safety of personnel.
33. The duty of manage asbestos is contained in regulation 4 of the **Control of Asbestos Regulations 2012**. It requires NGT to:
- Take reasonable steps to find out if there are materials containing asbestos in non-domestic premises, and if so, its amount, where it is and what condition it is in.
 - Assume materials contain asbestos unless there is strong evidence that they do not.
 - Make, and keep up-to-date, a record of the location and condition of the asbestos-containing materials - or materials which are presumed to contain asbestos.
 - **Assess the risk of anyone being exposed to fibres from the materials identified.**
 - **Prepare a plan that sets out in detail how the risks from these materials will be managed.**
 - **Take the necessary steps to put the plan into action.**
 - Periodically review and monitor the plan and the arrangements to act on it so that the plan remains relevant and up-to-date.
 - Provide information on the location and condition of the materials to anyone who is liable to work on or disturb them.

34. Remedial work to be done on each Unit or lack of it will be determined in section 8 after considering all the possible options.
35. The following pictures highlights the status of the cladding on units covered in this paper. Figure 4 and Figure 5 show the nature of damage that has already occurred on Unit 1C, which is the worst affected. This has left the lower part of the cladding badly damaged and in need of repair or replacement. The other Units are already showing signs of flaking and peeling as presented below.
36. Figure 6, Figure 7 and Figure 8 show the extent of damage or flaking on Units 1A, 1B and 1D respectively. It is clear that these Units are in a better state as compared to Unit 1C. However, evidence of flaking which exposes asbestos fibre has already started to occur as marked on each of the pictures and there is therefore a need to mitigate the risk.
37. The desired outcome of this investment is to at least encapsulate any deteriorated cab enclosures containing asbestos to eradicate the possibility of fibres entering the atmosphere which possess health concerns.



Figure 4: Damage on 1C Bottom Cladding



Figure 5: Flaking Cladding on 1C



Figure 6: Flaking Cladding on 1A

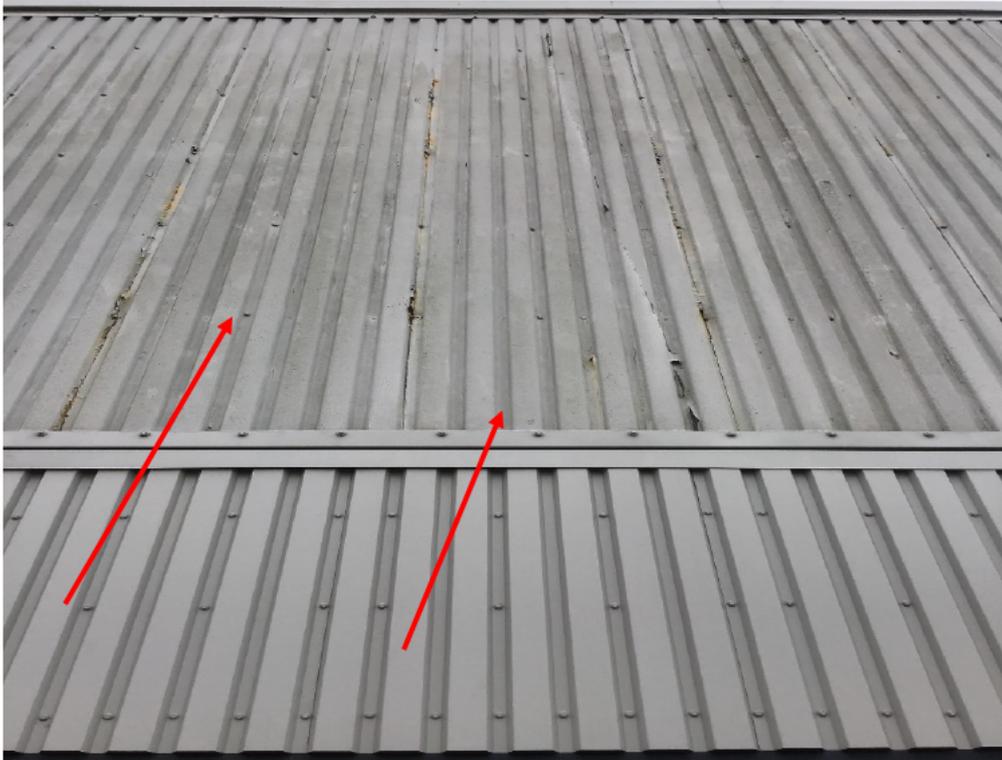


Figure 7: Flaking Cladding on 1B



Figure 8: Flaking Cladding on 1D

38. The status of all the cabs above shows the need for a proactive approach in mitigating the asbestos risk which is already evident. As a minimum, there is need to encapsulate the asbestos fibre on each of the cabs and protect the safety of personnel. Mitigation of this risk has been done progressively in the past years depending on the extent of damage on each unit. This has

resulted in the remediation of this risk on all the Plant 2 Units, leaving the Units which are now under consideration in this scope

5. Probability of Failure

39. Units 1A, 1B and 1D are currently in operation and are part of the St Fergus Site Strategy. Cabs for these units have already started flaking as indicated under the problem statement section.
40. It is of paramount importance to note that Units 2C and 2D, which are currently due for decommissioning as justified in a different paper, had badly damaged cladding. The same phenomena which these two Units exhibited is what has started to manifest on Unit 1C which is covered in this paper as shown on Figure 5.
41. It is also therefore highly likely that Units 1A, 1B and 1D will also follow the same trend if not mitigated in time.
42. Unit 1C stopped operation in 2021 due to a cab structural integrity issue as recommended by the OEM. The cladding of this Unit is badly damaged and requires mitigation as will be determined under the Option Analysis and Selection section.
43. As compared to other sites on the NTS, indications are that the cladding at St Fergus Terminal is suffering accelerated damage most probably due to its remote location in the vicinity of the seashore.

6. Consequence of Failure

44. The primary failure concerned with cabs for these units is the release of asbestos containing debris to different areas of the site or beyond. This could have catastrophic consequences for site staff as they will be exposed to asbestos related diseases such as mesothelioma and asbestosis.
45. The St Fergus Short-Term Strategy stipulates the need to have at least three units available on Plant 1 up to 2030. As a result, the need to ensure good and consistent asset health on the cabs of the required three units is of paramount importance.
46. If we do nothing and the cladding further deteriorates, this will result in unacceptable levels of asbestos fibre which impacts on the occupational health safety of personnel. This in turn would limit the capability of the site and affect the NSMP flows it could accommodate which in turn results in contractual breaches.
47. Given the COMAH status of the terminal, allowing the asbestos to reach unacceptable levels upon survey would demonstrate a failure to take all measures necessary to reduce the risk to As Low As Reasonably Practicable (ALARP). This has the potential to impact on the reputation of the NGT.

7. Options Considered

48. In total, four options have been considered for management of the condition issues and associated risks outlined in the problem statement. The options considered are informed by survey reports listed in the Appendices.
49. Across all the Units, the option of doing nothing has been discounted primarily because it entails continuing to operate the Units without mitigating the asbestos risk. This is not acceptable due to the health and safety implications as well as failure to comply with asbestos legislative requirements and Health and Safety Executives (HSE) guidelines.
50. The remaining three options were considered as detailed in tables below for each of the Units in cognisance of the fact that they may be in different stages of deterioration. Also considered during optional analysis is the envisaged time of retaining each unit in operation in the future.
51. Table 2 and Table 3 provides the considerations for each of the options considered for a particular unit or group of units.

Table 2: Units 1A, 1B and 1D Options Considered

Option	Unit 1A, 1B, 1D Considerations
<p>Option 1: Do Nothing</p>	<ul style="list-style-type: none"> • This option entails retaining the Cabs in scope and continue monitoring the asbestos emissions from the cladding. • This does not mitigate the identified asbestos risk. <p>This option is not viable due to health and safety implications and failure to comply with Control of Asbestos Regulations 2012 which state the need to have a plan that sets out in detail how the risks from these materials will be managed.</p>
<p>Option 2: Paint</p>	<ul style="list-style-type: none"> • Entails removing the damaged and flaking paint on the Galbestos sheeting and encapsulate with two coats of ET-150 paint. • This will make the cladding safe for personnel until 2030 when the units are expected to be decommissioned. • Periodic inspections will be required as per the asbestos management plan. • In relation to Unit 1A, this option presents enough time to confirm the best unit for the DLE retrofit trial which will be retained beyond 2030. <p>This option is viable and economic for all the three units in line with the short-term strategy.</p>
<p>Option 3: Decommission</p>	<ul style="list-style-type: none"> • Entails completely demolishing the units and leave the area free of asbestos. • This option will totally mitigate the risk. <p>This option is not viable since all these units are required for operation at least up to 2030. Since the units are likely to be decommissioned around 2030 when new units are commissioned, this is the ultimate option to eliminate the asbestos risk.</p>
<p>Option 4: Replace</p>	<ul style="list-style-type: none"> • This entails removing the asbestos cabs and replace it with a non-asbestos cab which will eliminate the risk. • Though it is a longer-term solution as compared to the painting option 1, this option does not present efficient use of funds as the units will be decommissioned in 2030. • Gas consumers full value for money is not realised. <p>This option is viable, but expensive to NGT and consumers.</p>

Table 3: Unit 1C Options Considered

Option	Unit 1C Considerations
<p>Option 1: Do Nothing</p>	<ul style="list-style-type: none"> • This option entails retaining the Cabs in scope and continue monitoring the asbestos emissions from the cladding. • This does not mitigate the identified asbestos risk. <p>This option is not viable due to health and safety implications and failure to comply with asbestos legislative requirements.</p>
<p>Option 2: Paint</p>	<ul style="list-style-type: none"> • Entails removing the damaged and flaking paint on the Galbestos sheeting and encapsulate with two coats of ET-150 paint. • Painting will not make good the already damaged lower part of the cladding as shown in the problem statement section. • This option will not mitigate the asbestos risk on some areas of the cladding. • This will be a significant investment into a cab of a non-operational compressor. <p>This option is not viable as it is not enough to address the problem considering the extent of cladding damage.</p>
<p>Option 3: Decommission</p>	<ul style="list-style-type: none"> • Entails demolishing the unit and leave the area free of asbestos. • This option will totally mitigate the risk and supports the recommendations in inspection reports. • The option will create space for the installation of one of the new emissions compliant units as proposed in our Emissions Uncertainty Mechanism submission which would be asbestos free. • This option presents an opportunity to bundle up this scope with other decommissioning works of Units 2C and 2D for efficiency which saves money. <p>This option is viable for a non-operational Unit which will be decommissioned in any case.</p>
<p>Option 4: Replace</p>	<ul style="list-style-type: none"> • This entails removing the asbestos cab and replace it with a non-asbestos cab which will eliminate the risk. • This will be a major investment into a non-operational asset, lacking cost benefit. <p>This option is not viable as the replacement cost is prohibitive since the unit is not operating and a candidate for replacement.</p>

Options Cost Details

52. The unit costs details for each intervention are shown in table 4.

Table 4: Option Cost Details

Option	Unit cost (£m 18/19)	Cost Reference
Do Nothing		
Painting	██████	Cost book
Decommission	██████	T2 decommissioning unit cost
Replacement	██████	Unit 2B Cab replacement

53. Besides the recommended option (Paint 3 Cabs and Decommission 1 Cab) which costs ██████, the only other viable option (Replace 3 Cabs and Decommission 1 Cab) costs ██████.

8. Option analysis and selection

54. Table 5 and Table 6 provides a summary of the options considered for all the units and also highlights the recommended option.

Table 5: Summary of Unit 1A, 1B, 1D considered options

Solution considerations		Option 1	Option 2	Option 3	Option 4
		Do Nothing	Paint	Decommission	Replace
Cost		Lowest in short term but may require intervention in the short term	Medium in short term and economic in long term	High in short term and counter operational strategy	Highest in short term and minimum cost benefit
Compliance	COMAH	Currently compliant - with periodic inspections required.	Currently compliant - with periodic inspections required.	Currently compliant - with periodic inspections required.	Currently compliant - with periodic inspections required.
	DSEAR	No	Compliant	Compliant	Compliant
Environmental Impact		High - Release of asbestos material into the environment.	Low	Low	Low
Maintenance	Ongoing OPEX	Medium - continuous OPEX surveys	Medium - continuous OPEX surveys	Low - removes requirement for any ongoing OPEX surveys	Low - reduces the requirement for any ongoing OPEX surveys
	Risk	Medium - unsafe for personnel to work in the vicinity of asbestos fire	Low	Low	Low
Operational Resilience	Single Point of Failure	N/A	N/A	N/A	N/A
	Security of Supply	Medium - risk to supply if further failure impacts overall ability of site to operate	Low	High - risk to supply if units are not available	Medium-risk for the duration of the replacement project, but low in the long run.
Overall Viability		Not Viable	Viable	Not Viable	Viable

Table 6: Summary of Unit 1C considered options

Solution considerations		Option 1	Option 2	Option 3	Option 4
		Do Nothing	Paint	Decommission	Replace
Cost		Lowest in short term but greater overall due to further degradation of structure	Medium in short term but does not mitigate the risk in badly damaged areas	High in short term but lowest in overall	Highest in short term
Compliance	COMAH	Non-compliant due to risk of release of asbestos materials and risk posed to site staff	Non-compliant due to risk posed to site staff	Compliant	Compliant
	PSSR	All PSSR assets can be isolated from process and removed from the written scheme of examination	Compliant	Compliant	Compliant
	DSEAR	Compliant	Compliant	Compliant	Compliant
Environmental Impact		High - Release of asbestos materials into the environment	Medium - Potential release of asbestos materials into the environment	Low	Low
Maintenance	Ongoing OPEX	Medium - continuous OPEX challenge to maintain	Medium - continuous OPEX challenge to maintain	Low - removes requirement for any ongoing OPEX to maintain	Low - removes requirement for any ongoing Asbestos related OPEX to maintain
	Risk	High - unsafe for personnel to work in vicinity of unmitigated defects	Medium - Potential release of asbestos from badly damaged cladding	low	Low
Operational Resilience	Single Point of Failure	N/A	N/A	N/A	N/A
	Security of Supply	Medium - risk to supply if significant failure impacts overall ability of site to operate	Medium - risk to supply if significant failure impacts overall ability of site to operate	N/A	N/A
Overall Viability		Not Viable	Not Viable	Viable	Viable

9. Preferred Option Scope and Project Plan

55. The assessments outlined in this paper and the associated discounting demonstrates that the most cost effective and logical option is to paint and encapsulate asbestos cladding on Units 1A, 1B and 1D, whilst Unit 1C is recommended for decommissioning.

56. Focus is therefore on ensuring the projects are done in an efficient and cost-effective manner.

Project Scope

57. The high-level scope for this investment is:

Units 1A, 1B, 1D Painting

- Removal of damaged and flaking paint / bitumen to Galbestos sheeting to cabs 1A, 1B and 1D.
- On completion of the removal of these areas the Galbestos will be encapsulated with two coats of ET-150 using either hand brushes or paint sprayers.
- A localised environmental clean will be conducted to the floor level of the building perimeter
- Works to be conducted under controlled conditions.
- Statutory air monitoring is to be provided as part of this work scope
- Allowance to remove all waste generated as part of the contracted works

Units 1C Decommissioning

- Remove all Hazardous liquids and substances from the redundant compressor cabs.
- Remove gas pipe work to give a positive isolation outside of the Compressor Cab before any further decommissioning can be started. Any remaining pipework should be supported and made safe to require minimal upkeep to maintain.
- Remove all electrical and instrument feed cables to the Cabs with a clear brake from the supply and cap off when proved dead.
- Have plan to safely remove and dispose of Cab Cladding that contains Galbestos.
- Have plan to safely remove and dispose of any asbestos
- Lifting Plan to safely remove and dispose of exhaust system and remaining cab structures.
- Remove all items leaving the concrete base foundations which should be made safe as to not leave trip hazards or holes that could be hazardous or allow access for vermin.

Final Cost and program

58. Table 7 provides a breakdown of the final costs for the decommissioning of painting of Units 1A, 1B and 1D as well as Unit 1C decommissioning split by several categories.

Table 7: Preferred Option Final Costs

	Cost Category	Outturn Costs (£m)	Costs (£m) 2018/19 Price Base
	OEM costs		
<i>Direct</i>	EPC Estimate		
<i>Indirect</i>	EPC PM		
<i>Direct</i>	EPC Site Establishment		
<i>Direct</i>	NGT Direct Company Costs		
<i>Indirect</i>	NGT Indirect Company Costs		
	Contractor Risk		
<i>Direct</i>	NGT Project Risk		
	FEED		
	Development / Optioneering		
	Land / Easements		
	TOTAL		
	Direct		
	Indirect		

Asset Health Spend Profile

59. Table 8 shows the spend profile for our preferred option in 2018/19 pricing. In order to update the licence terms within the Price Control Financial Model (PCFM), the request includes a negative value in the final year to provide the correct net position by year when accounting for baseline funding received.

Table 8: Preferred Option Spend Profile

£m 18/19	FY2023	FY2024	FY2025	FY2026	Total	Comments
Units 1A, 1B, 1D Painting and Unit 1C Decommissioning	■	■	■	■	■	

RIIO-T2 Volume UIDS

60. Table 9 below provides a summary of the UIDS and associated funding for the scope of works proposed in this paper.

Table 9: Summary of UIDS

UID	Base in volume of Intervention (By PP)	Base in tota funding avai ab e	Current vo ume of intervention	ECC tota funding required (£m 18/19)	Output Year	UID funding requested through UM (£m)
	(by unit of measure)	(£m 18/19)	(by unit of measure)			
██████████ - ST FERGUS TERMINAL – Paint Cab to Encapsulate Asbestos	██████████	Nil	██████████	██████████	2026	██████████
██████████ – St FERGUS TERMINAL - Decommissioning of Compressor Unit	██████████	Nil	██████████	██████████	2026	██████████
Total						██████████

61. The cost accuracy at this stage of the project is estimated at +30/-15% in accordance with the Infrastructure and Projects Authority (IPA) cost estimating guidance.

62. This report has explained the safety concerns NGT has regarding the asbestos risk and the implications of these on terminal operations. The intervention is necessary to ensure the safety of site personnel and ongoing 24/7/365 operation of the terminal facility.

63. Painting of Units 1A, 1B and 1D and the subsequent decommissioning of Unit 1C at the St Fergus gas terminal totals ██████████ (18/19 Prices).

NARMS Benefit

64. Following discussions with Ofgem in the NARM Development Monthly Meetings, it is proposed that for simplicity all the investments that arise from the UMs are collated and one NARMS update is provided after the Plant & Equipment submission.

65. For further details and a summary of UIDS please see the Asset Health UM Overarching document.

Conclusion

66. This report has explained the asbestos safety concerns NGT has regarding the Plant 1 Units and the implications of these on terminal operations. The intervention is necessary to ensure the safety of site personnel and ongoing 24/7 365 operation of the terminal facility. As detailed in this justification paper, it is of paramount importance to secure the necessary investment to address the highlighted investment drivers
67. An estimated cost of [REDACTED] (18/19) is therefore being requested to paint three cabs and decommission one.

10. Appendices

Appendix A – Project Summary

Table 10: Project Summary

Name of project	TBC		
Scheme reference	TBC		
Primary investment driver	Asset Deterioration/Safety		
Project initiation year	2024		
Project close out year	2026		
Total installed cost estimate 18/19	[REDACTED]		
Cost Estimate accuracy (%)	+30/-15		
Project spend to date (£)	Nil		
Current project stage gate	F2		
Reporting table ref	RRP Table 6.3 (Asset Health) and 6.4 (Asset Health Projects)		
Outputs included in RIIO-T1 business plan	No		
Spend apportionment	T1	T2	T3
	[REDACTED]	[REDACTED]	[REDACTED]

Appendix B - Site Asbestos Action Plan

File: 483374, Site Galbestos Action Plan, [REDACTED], Rev 1, 2021

Appendix C - St Fergus Toolbox Talk for Galbestos (Asbestos)

File: Toolbox Talk for Galbestos (Asbestos) [REDACTED], 2021

Appendix D - [REDACTED] Conditional Survey Report of Units 1C and 2B

File: 20606-DDR-002, Conditional Survey Units 1C and 2B, [REDACTED], Rev B, 2022