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Strictly Confidential

Dear James

National Gas Transmission (NGT) Consultation Response – Asset health Re-opener Applications Submitted by National Gas Transmission (January 2023 and June 2023)

This letter is NGT's response to the Ofgem consultation of 8 July 2024 on Asset health Re-opener Applications Submitted by National Gas Transmission (January 2023 and June 2023).

We appreciate the extensive engagement with Ofgem regarding these submissions and welcome Ofgem's minded-to position to modify the relevant licence terms by £113.279m. However, we do not agree with Ofgem's proposal for funding for the replacement of coating on above ground pipework at St Fergus gas terminal (funding request of £7.633m). We have provided further evidence to support our proposed approach to defect remediation as part of this response. We have also provided clarification to support the need case for cabs asbestos mitigation across three St Fergus units, which is in line with our long-term strategy for the site as well as health and safety concerns. Our funding request for this work remains £1.307m.

In Appendix 1 we have provided detailed responses to the questions posed in Ofgem's consultation and provide our comments in respect of the draft direction. We would be happy to discuss our response with you should you seek any points of clarification or further information.

NGT's designated point of contact for this submission is Neil Rowley, Head of Regulatory Performance (neil.rowley@nationalgas.com, 07785 381424).

Yours sincerely

Tony Nixon – By Email
Regulation Director, Commercial - On behalf of NGT

Appendix 1 – NGT response to consultation questions

Question 4.1: Do respondents agree with our minded-to position on funding for the January 2023 Asset health Re-opener application?

We agree with Ofgem's proposed funding decision to modify the relevant licence terms (Aht, NARMAHOT and NLAHOT) by £48.360m.

Question 6.1: Do respondents agree with our minded-to position on funding for the June 2023 Asset health Re-opener application?

In our response below we have provided detail of the areas where we agreed with Ofgem's minded to funding decisions, where we do not agree, we have provided additional evidence to support our funding application.

For St Fergus Plant 2 Aftercooler, Bacton Overpressure Protection and Compressor Cab Infrastructure we agree with Ofgem's position and agree with the proposed funding adjustments.

St Fergus Above Ground Pipework Corrosion

We agree with Ofgem's position on three out of the four scopes included under this funding application. We welcome Ofgem's proposed funding adjustments for works including remediation of corrosion defects and remediation of defects at pit wall transitions, which is £26.562m of our re-opener submission. We also requested funding for replacement of coating on above ground pipework at St Fergus gas terminal areas 3 and 6 including areas where corrosion remediation is scheduled to take place. Currently Ofgem are minded to not provide funding for this.

We appreciate Ofgem's position, and the evaluation of the evidence provided. However, it is essential that we are funded to paint above ground assets post corrosion remediation and where there are significant coating defects, to preserve the integrity of the St Fergus site. In addition to painting to protect any corrosion remediation, it is also in the end consumers interests to limit further corrosion developing by resolving coating defects before they can worsen. To provide additional evidence to support the needs case, since our submission in June 2023 we have contracted Inspection and Consultancy Services Ltd (IACS) to provide a thorough independent assessment of the state of corrosion and corrosion protection systems currently employed at areas 3 and 6 of the St. Fergus Gas Terminal. The surveys conducted and subsequently summarised in the report¹ reveal significant corrosion and paint failures, including flaking, uncoated fittings, cratering, low Dry Film Thickness (DFT readings), bleeding, and chalking on various components. These issues pose serious risks if left unaddressed, potentially leading to severe long-term financial implications. This is further supported by the data from current corrosion defect (CM/4) inspections on the terminal which are a leading indicator and support the ineffectiveness of the current coating system for areas 3 and 6. This can be observed by noting the increased number of

¹ Appendix 2 – IACS Initial Assessment Report: Evaluation of Corrosion and Corrosion Protection Systems at St. Fergus, July 2024

high-risk defects, which formed the basis of our original funding request to remediate corrosion defects in areas 3 and 6.

The outcome of this independent report supports our preferred option to replace coating on above ground pipework for areas 3 and 6 and our funding request remains unchanged.

To provide further context of the investigations, these were done to demonstrate that the coating system as a whole has degraded to a point where it is failing or in some areas failed, which is ultimately the root cause for all coating system defects that are manifest at the Terminal. IACS carried out three types of tests to assess the integrity and effectiveness of the coating system in accordance with NGT specifications (T/SP/PA/09 and T/SP/PA/10). These are:

1. **Visual inspection:** Visual inspection of paint work is a fundamental process in evaluating the effectiveness of corrosion protection systems. The primary aim is to identify any defects or failures that could compromise the integrity of the protective coating. During the inspection, attention was focused on detecting common issues such as blistering, cracking, peeling, or rust breakthrough.
2. **Dry Film Thickness:** The Dry Film Thickness (DFT) test is a crucial procedure for assessing the effectiveness of corrosion protection paint systems. This test measures the thickness of the paint layer applied to a substrate, ensuring it meets the specified requirements for optimal performance.
3. **Adhesion Testing:** Adhesion testing is a critical procedure in evaluating the effectiveness of corrosion protection paint systems. This test ensures that the paint adheres properly to the substrate, which is essential for maintaining the integrity and longevity of the protective coating.

The assessment conducted a total of 260 DFT tests and as can be seen in figure 1 and 2, the average for all readings in area 3 and area 6 are below the required DFT thickness of 265µm.

This required thickness standard is taken from National Gas PA/10 specification which is based upon an Gas Industry standards GIS/PA/09 and GIS/PA/10. Dry Film Thickness is a measure of coating integrity, performance and functionality. When the DFT falls below 265 micrometres, premature coating failure occurs and subsequent corrosion. This can be seen from the increased volume of coating and corrosion defects on the terminal.

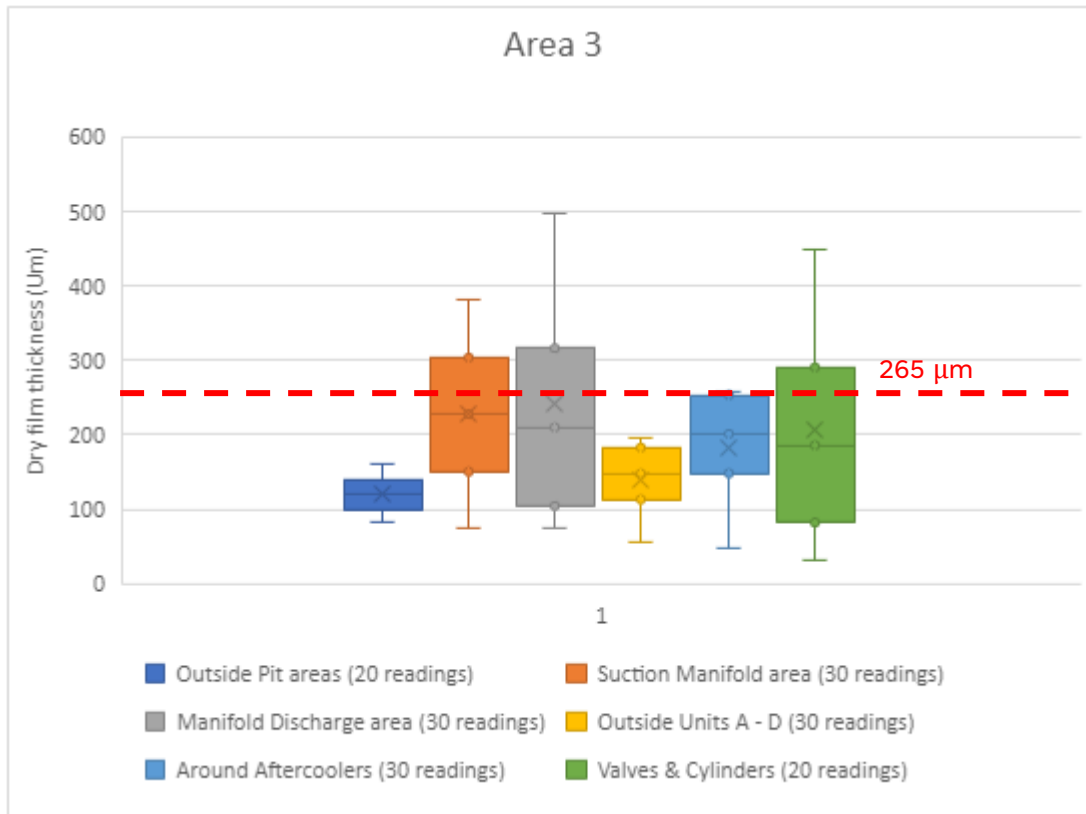


Figure 1 Dry film thickness readings of the area 3. All average readings are below minimum DFT thickness with some areas being extremely low necessitating the need for intervention.

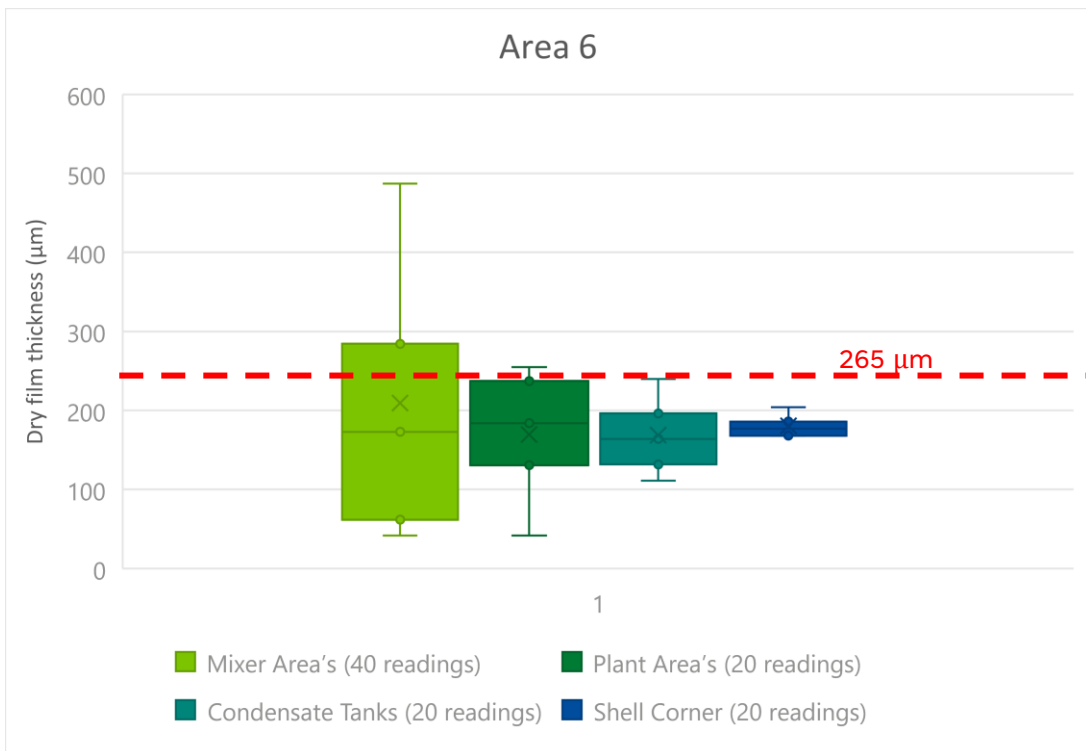


Figure 2 Dry film thickness readings of the area 6. All average readings are below minimum DFT thickness with some areas being extremely low necessitating the need for intervention.

Table 1 Summary of tests carried out by IACS in areas 3 and 6. Results show coating system has failed and in need of intervention. See appendix B and C of IACS report.

Tests	Activity	Result
Visual inspection	Inspection of Area 3 and Area 6	Failed – Most Areas exhibited coating and corrosion failures
Dry film thickness	260 readings	Failed – Average of reading for each section below minimum average
Adhesion testing	18 readings (9 in each area)	Failed – Only 4 of tested sections passed test

As recommended by IACS, a Grit-blast to bare metal to clean the steel and apply a new coat will be required to ensure the coating system meets Gas Industry standards (outlined in GIS/PA/10 and GIS/PA/09) to ensure protection against corrosion hence complying with Pressure System Safety Regulations 2000 (PSSR) and results in cost efficiencies long term. The attached report from IACS provides additional information.

St Fergus Cabs Asbestos Mitigation

We do not agree with Ofgem's minded-to position to not provide funding for Asbestos mitigation for units 1A, 1B and 1D. The investment is supported by NGT's short-term strategy which together with the resilience assessment demonstrates the need to retain four gas turbine driven units across Plants 1 and 2 to retain compressor capability until the implementation of the long-term strategy.

To implement the Ofgem approved long-term strategy, NGT have selected Unit 1A out of the three units subject to asbestos mitigation to be retained. Given Unit 1A will be retained for long term support of the terminal, we strongly believe that Asbestos mitigation should be implemented to bring the unit up to safe standards for both the short and long term use of the compressor unit.

Regarding the state of the cabs, we wish to clarify the provided evidence (Lucian Environmental Site Galbestos Action Plan and toolbox) as part of our submission in June 2023. The expert's report was written in 2021 on the basis that NGT have put in place preventative measures to manage the risk of the asbestos to personnel through implementation of actions highlighted by the toolbox as well as some remediation actions to encapsulate Galbestos on the three units². This is also evident in Lucian's site action plan³ where it states that unit 1A, 1B and 1D have been encapsulated by an asbestos removal contractor.

However, the remedial works undertaken at that time can be considered temporary and involved partial encapsulations carried out to primarily manage the highest risk areas only where Galbestos cladding was heavily prone to flaking due to corrosion. The partial repairs involved trimming and replacement of Galbestos cladding sections around the cab (see figure 1). However,

² Appendix C_St Fergus Toolbox Talk for Galbestos (Asbestos) of the NGT_AH2_08_Cabs Asbestos Mitigation EJP submitted in June 2023, Final Notes, page 4.

³ Appendix B_Site Asbestos Action Plan

to meet Lucian's Long term site action plan⁴ the units would need to be either fully encapsulated or removed to manage the risk of asbestos.

We have attached the latest asbestos management action plan⁵, which requires full encapsulations of the coating to the metal wall panels for unit 1A, 1B and 1D (**see appendix 3 for specific reference on each unit**). The funding application of £1.307m is to encapsulate any further deteriorated cab enclosures containing asbestos and eradicate the possibility of fibres entering the atmosphere which possess health concerns.

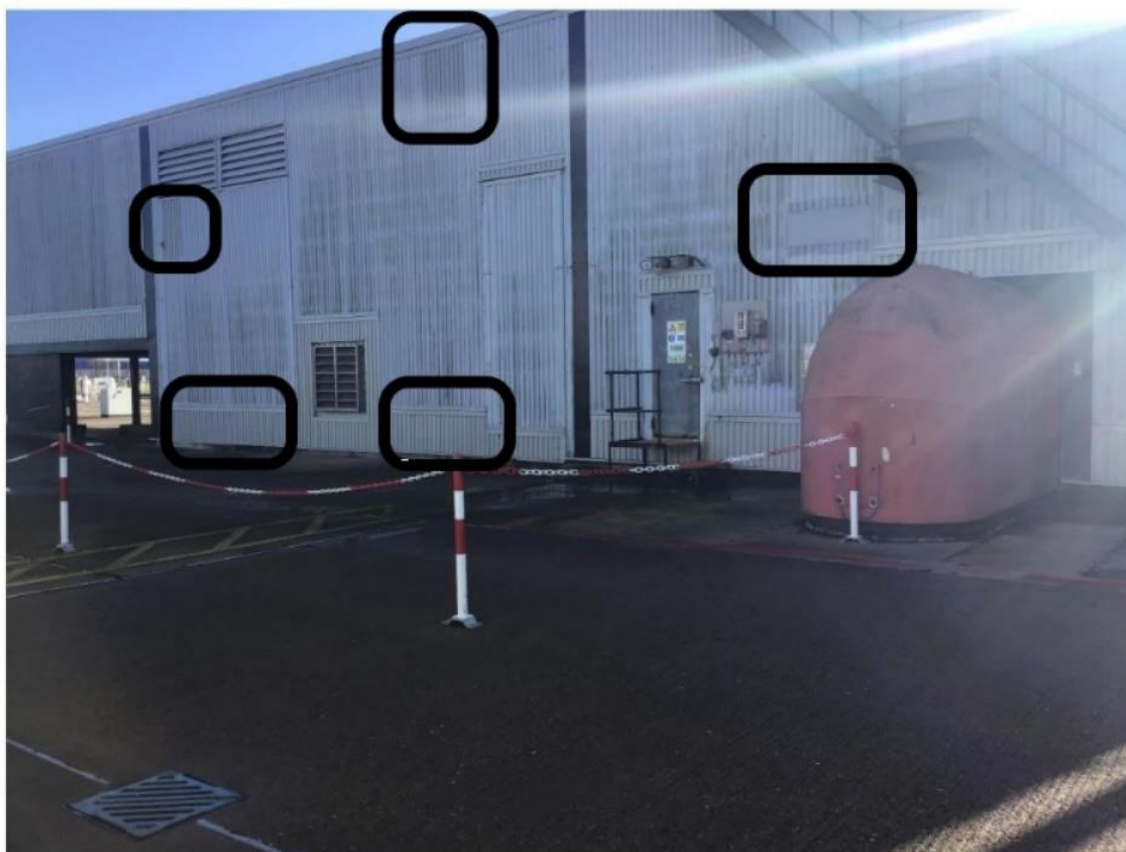


Figure 1 Areas that have been remediated in patches (circled)

The units 1B and 1D are expected to remain in service until sometime in the early 2030s. They are slated to be decommissioned once the new units under the long-term strategy are fully commissioned and are operating as expected. It is vital to the safe running of the St Fergus site and the personnel that health and safety risks are mitigated such as the asbestos risks highlighted.

⁴ Appendix B_Site Asbestos Action Plan

⁵ Appendix 3 - Lucian Asbestos Management Action Plan, April 2024

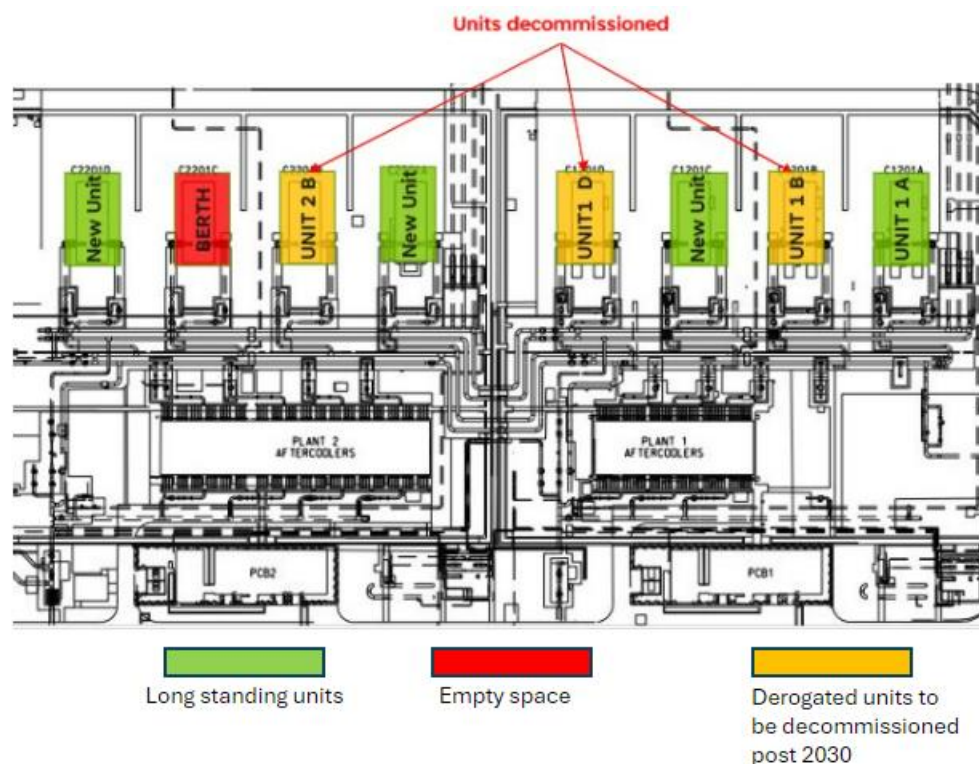


Figure 1 Proposed layout of gas driven compressors post 2030 and units to be decommissioned once new units are operationally accepted.

If no action is taken, given the units have not been fully encapsulated, personnel will continue to operate with the occupational health risk of asbestos exposure for more than 7 years. Given the harsh conditions at St Fergus flaking of Galbestos will continue to worsen, if not controlled or removed.

NGT are required to demonstrate to the HSE that they have taken sufficient action to minimise the risk of asbestos exposure to site personnel in line with the 'control of Asbestos Regulations' by implementing actions highlighted by the site Galbestos Action plan. The latest asbestos management action plan⁶ highlights the need to encapsulate Unit 1A, 1B and 1D to safely manage the asbestos risk and prevent intervention from the HSE.

Should more evidence or discussion be required for this funding request we would welcome the opportunity clarify any remaining issues.

St Fergus Priority Valves

As a point of principle, where possible and as part of a recycle re-use culture, NGT will always consider options to remediate, keep valves in strategic stock and continually review potential scenarios for re-deployment if deemed appropriate.

We agree with Ofgem's position to provide funding for the delivery of this work, however, there are complexities to the re purposing of existing valves which will make Ofgem's policy position of

⁶ Appendix 3 - Lucion Asbestos Management Action Plan, April 2024

not funding further requests difficult to adhere to and used during future replacement programmes. Ofgem states that they do not expect to provide funding at this scale to allow new large bore valves to be purchased for replacement programmes again and encourage NGT to build and maintain a stock of refurbished valves for use across the network.

NGT's rational for disagreement is primarily based on three key areas:

1. **Population of valves suitable for re-purpose** – A large proportion of valves on the NTS have a welded body which makes repurposing them almost completely unfeasible due to the requirement to physically cut the valve casings open, remove the internals and return these to the Original Equipment Manufacturers, which in some cases no longer exists or due to commercial changes, are either no longer supporting this process or where possible, global location of facilities e.g. Cameron would require shipping costs to the USA which would significantly decrease the economic viability of a repair. There is a large degree of risk associated with risk to damage of the valve when destructive works are undertaken in this manner. Valves that are split body, could potentially be assessed for repair but even if proven successful have limited re-use potential on the NTS. NGT policy stipulates that to prevent any leak paths being entrained into the system by design all below ground connections must be welded.
2. **Risk to network and project delivery** - There is no guarantee that a valve can be re-purposed and as such refurbishment carries risk to delivery schedules. NGT have provided evidence to demonstrate that economically the best scenarios of repair for valves achieve a break even on costs but note that additional schedule and programme delay is present in the delivery.
3. **Economics of repair vs new valve** – In many cases the assets requiring intervention are buried valves and as such access to remove these requires extensive complex excavation which presents initial high cost. Noting that all valves have to be assessed for repair off site under factory conditions with no guarantee of success, the costs incurred to excavate are made more efficient and de-risked by using a new valve.

Beyond the general challenges outlined above we fully expect to determine and evidence the case for either repair, where that it is feasible or replacement where it is not beneficial or economically viable, in future Valve investment requests.

Bacton Enhanced Filtration

We acknowledge the Bacton Enhanced Filtration main investment has not met Ofgem's economic assessment. However, as maintained in our submission, NGT caveat that this is due to dust having a high level of unpredictability that we have been unable to demonstrate with exact precision. NGT have investigated the source of dust further and attempted to demonstrate that this is a naturally occurring phenomenon as well as gathering as much data as is readily available to support the investment during the investigations.

Additionally, NGT acknowledge that there is a double filtration process in place at Bacton Terminal, however as described in our EJP, our view is this is only as a semi-permanent mitigation

that cannot be relied on as the sole process for managing higher quantities of dust when flows are increased. An average of up to 20mscm/d of double filtered gas can be achieved, limited by the capability of the assets leaving up to 68% of the overall remaining unfiltered gas being passed directly to Interconnector LTD. Double filtration is undertaken on an endeavours basis and in periods of high flow, NGT can cease double filtration to maintain UK and EU Gas supplies at their highest capacity, also to facilitate critical maintenance is undertaken therefore there is still a residual risk and threat to security of supply.

We will continue to advise and collaborate with our directly connected customers to ensure they regularly review their filtration arrangements and adherence to the agreed velocity control protocols for managing dust, in an effort to de-risk themselves further against ingress of dust, when double filtration cannot be achieved.

NGT will also continue to monitor dust levels at the terminal and have sought funding for additional In-Line Inspections (ILI) along with a proposal not to rationalise the Terminal as part of our future development plans. The latter will ensure that double filtration can still be utilised to its full capability albeit limited in nature. In parallel, we will also continue to build a joint data set between NGT and its customers for when dust is experienced, revisiting the need case for investment appropriately.

Finally, the curtailment of gas supplies from Russia driving shift in gas flow patterns in 2022 has ceased and EU gas supplies have stabilised along with export flow patterns. NGT believe however there is still a latent risk that the combination of high flows and dust generation could occur again in the future.

St Fergus High Voltage Transformers and St Fergus Distribution Boards

We accept that funding application for those two projects sit outside the scope of Special Condition 3.14 and we welcome Ofgem's acceptance of the need case to carry out this work in the RIIO-T2 price control period. We will engage with Ofgem ahead of the St Fergus compressor emissions re-opener submission in 2025 to ensure agreement of efficient costs and proposed option scope as NGT will need to progress this work in anger before the re-opener submission is due.

St Fergus High Voltage Switchgear and St Fergus Low Voltage Switchboards

We agree with Ofgem that no funding can be awarded under Special Condition 3.14, but we still believe there is a need to progress this work and we will determine best approach to take this forward at a later date.

Plant and Equipment and Cabs RIIO-T3 Survey and FEED

Despite Ofgem's funding decision, we will need to progress surveys to carry out key preparatory work ahead of the next price control period RIIO-T3. This will support our approach to define and implement proactive management of a rolling asset health program. We will seek to recover costs as part of our RIIO-T3 business plan submission.

Question 7.1: Do respondents agree with our proposed draft direction?

We agree with Ofgem's proposed draft direction and will work with Ofgem to ensure the update to the confidential Asset Health Non-Lead Assets PCD Tables. The NARM rebasing of our Licence target will be triggered once Ofgem have published all their decision across all three Asset Health re-opener applications.



Appendix 2 – IACS Initial Assessment Report Evaluation of Corrosion and Corrosion Protection Systems at St. Fergus July 2024

Appendix 3 – Lucion Asbestos Management Action Plan, April 2024- see Page 48 and 56 for action on Unit 1A, Unit 1 B and Unit 1D respectively