

**UNC Workgroup 0607S Minutes
Amendment to the Gas Quality NTS Entry Specification at the ST
Fergus NSMP System Entry Point**

Friday 27 January 2017

Consort House, 6 Homer Road, Solihull B91 3QQ

Attendees

Chris Shanley (Chair)	(CS)	Joint Office
Lorna Dupont (Secretary)	(LD)	Joint Office
Amrik Bal	(AB)	Shell
Andrew Pearce	(AP)	BP Gas
David O'Donnell*	(DO)	NMSP
David Reilly	(DR)	Ofgem
Debbie Brace	(DB)	National Grid NTS
Graham Jack*	(GJ)	Centrica
Helen Bennett	(HB)	Observer
Julie Cox	(JCx)	Energy UK
Lucy Manning	(LM)	Gazprom
Murray Kirkpatrick*	(MK)	BP Gas
Phil Hobbins	(DB)	National Grid NTS
Richard Fairholme	(RF)	Uniper
Terry Burke	(TB)	Statoil

**via teleconference*

Copies of all papers are available at: <http://www.gasgovernance.co.uk/0607/270117>

The Workgroup Report is due to be presented at the UNC Modification Panel by 15 June 2017.

1.0 Introduction and Status Review

CS welcomed all to the meeting.

1.1 Approval of Minutes (05 January 2017)

The minutes were approved.

1.2 Meeting Programme - Anticipated Structure and Contributions

Introducing the 'skeleton' draft Workgroup Report CS explained that this initial outline of potential requirements/key themes for assessment would help to set the scene and to focus Workgroup discussion/activity.

CS explained the primary structure and that it should evolve in response to Workgroup discussions, with revisions/additions expected to be made following receipt of various contributions as assessments progress. Attention was drawn to the draft/example inclusions - these were discussed and what further information might be required; a number of observations and suggestions were made as the review progressed.

Individual parties were tasked with confirming/providing additional information as appropriate, according to the Workgroup's view of what was necessary to include as supporting evidence in the Workgroup's report.

2.0 Amended Modification

Amendments may be made in light of the Workgroup's discussions.

3.0 Additional Analysis

Further Background to the change

MK will be providing further detail to set the proposal in context and a better understanding of/reasons why some perceived options might not be available.

4.0 Assessment of operational risks

When making its assessment of the impacts of increasing the carbon dioxide parameters, the Workgroup has been requested by the UNC Modification Panel to demonstrate the frequency of occurrence and the penetration into the NTS. The Workgroup will formally respond to this request when making its report.

Frequency of occurrence

The number (8 since May 2016) of unplanned trips was discussed; very little difference to the current frequency is expected going forward. MK believed that more data could be provided to expand the table as the process continues and that an expected frequency based on historic information for the next year(s) could be included.

What happens when Laggan/Tormore restarts after an unplanned trip is critical and it is important to know the duration of the high CO₂ slug coming through the terminal. DO observed that this depended on the actual flow rates when the field restarts; size and duration is subject to the speed of the ramp rate. If this rate is slow, there is less pressure in the pipeline, the CO₂ content is lower, but the duration is longer. Reference was made to Scenario 1 discussed at the previous meeting, and it was observed that the 'off spec' time/slug was the issue. It was suggested that the duration of the high CO₂ slug be added to each of the four Scenarios and that the information be re-presented.

Action 0103: Scenarios 1-4 – MK to add the duration of the slug to each Scenario and re-present the information.

GJ asked if the current level of outages was likely to persist to 2023, and was there any indication to suggest that it might go up/down? MK responded that there was nothing to suggest any major changes. DO reiterated that the issue is unplanned outages, looking at past operational history there is really nothing to indicate any obvious problems. Some fields are new and have brand new equipment, and some are not and have older equipment; legislation will require upgrades to be made, and as businesses transmute into midstream businesses there will be a primary focus on keeping the plants up and running otherwise there is no commercial gain. Some fields have new equipment but older fields will require investment for continued operations. The recent trend has seen pipelines and terminals being owned and operated by investors as "standalone" business independent of field ownership. As a result, these midstream businesses are incentivised to keep operational uptime at a high level to maximise revenues. GJ suggested that it would be good to have something included in the Workgroup's report regarding the reliability of equipment, etc.

Action 0104: Reliability of field plant/equipment - DO to provide a statement to support the view of forecast unplanned outages (for inclusion in the Workgroup Report).

Questions were raised regarding flows at SAGE and SEGAL. DO explained the set up of the three terminals at ST Fergus and at what point the gas was blended. Flows are recorded separately and the Network Entry Agreements (NEAs) are all slightly different. Gas that exits St Fergus has to match the 4mol% specification. JCx queried, what was the actual measurement point from a compliance perspective? PH gave a brief explanation of what occurred before the gas input the NTS but there was a need to clarify that the 4mol% limit was

also monitored before entering the main NTS feeders. JCx observed that if it was a commercial issue offshore then the Oil and Gas Authority (OGA) perhaps should be giving it attention; perhaps there are better contractual ways/alternative options to consider to alleviate the problem. Changes to NEAs might be the easiest, but are not necessarily the best. DO explained that offshore issues were the OGA's responsibility; BP can brief them of this modification. NSMP has been explaining to OGA how the flow could be maximised for Rhum and how it can be achieved at the interface of Ofgem and OGA (flange where gas enters the NTS). It was suggested that clarity is required in respect of the blending capabilities, measurement points, what is measured, and the gas quality specification expected. DO clarified that the blending/commingling of SAGE, SEGAL and the NSMP terminal gas can only occur when it enters NTS. The measurement point in relation to the NEA is the exit from the sub-terminal.

DR asked what operational services the NTS might be able to offer, as an alternative to the proposed approach. PH responded that something might be considered, but it was not usual NTS business. Gas is measured for GS(M)R compliance at the point of entry into the five feeders. DB explained that the NTS Control Room issues a warning to parties when it is observed that the gas is out of specification, and the flow party then has an hour to bring it back into specification.

JCx suggested that an NEA amendment could be made to introduce operational procedures to allow flows to exceed 4mol%, at an agreed level and over a certain period, provided there is sufficient gas to flow elsewhere, observing that there was no indication that this was likely to be a regular occurrence, and quite the opposite in fact. GJ noted that these unplanned outages appeared to be very rare occasions. MK indicated there would need to be a guarantee that it can/would be taken by the NTS; there would need to be firm arrangements otherwise significant liabilities are incurred.

Referring to similar modifications (e.g. 0498, 0502, etc) PH observed there would be concerns regarding setting a precedent, and explained what the NTS might have to do in terms of monitoring and taking action in respect of any breaches, and what would happen if three of the five feeders were out. DR suggested Terminal Flow Advises (TFAs) could be issued if problems could not be avoided. GJ pointed out that it was very clearly stated at the time that Modifications 0498/0502 would not be setting any precedent, and that this modification if pursued would need to carry a similar statement (regarding consideration on a case by case basis).

Commingling among the three sub-terminals significantly reduces the risk of out of specification gas reaching customers. CS summarised the options; should the NEA be set at 5.5mol%, or should the operational procedures be changed between the terminals and the NTS to manage out of specification gas caused by the unplanned outage.

Action 0105: BP and National Grid NTS to consider if any adaptations can be made (from both an NEA change perspective and a change to operational procedures) to the operating arrangements between the terminals and the NTS, to manage out of specification gas resulting from an unplanned outage.

PH indicated he was happy to consider this and suggested that the other two terminals might need to be made aware of what was happening. TB and AB indicated that they were in dialogue respectively, agreeing that Gassco, SAGE and SEGAL need to be involved in looking at the alternative; they will need to understand the context, if they are within limits, what they do and what their operational requirements are, have they amine units, etc. DO confirmed that SAGE has amine units included in its construction, but believes that SEGAL does not. TB and AB believed that all stakeholders should be involved so that any unintended consequences might be identified/understood.

Referring to Action 0101, it was suggested this might be expanded to consider the following in respect of the four scenarios (and any other(s) identified by NTS):

- A 'heat map' explaining where the higher CO₂ gas goes after it leaves St Fergus and how far out this gas travels before it dissipates
- Where does it become an issue for customers; Direct Connects (DCs) that could be receiving the higher CO₂ gas on the flow routes, and who might potentially be affected if penetration reaches further zones.

Following this the probability of occurrence can be further determined/assessed.

EXPANDED Action 0101: National Grid NTS (PH) to provide:

- a) **Historical flow and CO₂ data at each St Fergus sub terminal, in order to provide a view on the BP/NSMP analysis as presented.**
- b) **In respect of the four scenarios (and any other(s) identified), provide a 'heat map' analysis; to include St Fergus aggregate flows/penetrations under different conditions (summer and winter); the usual CO₂ specification; the risk of entry and how far any out of specification flow might then be expected to reach.**
- c) **Direct Connects (DCs) that could be receiving over 4mol% to be identified on the flow routes, and who might potentially be affected if penetration reaches further zones.**

5.0 Anticipated impact on gas quality.

It was then considered that other gas quality parameters could also be affected by an increase in the CO₂ content and it was explained that the impact on CV and Wobbe was already being analysed by BP.

It was also suggested that Dewpoint be analysed. JCx added that she might soon have access to a report that may be relevant in respect of wet systems, and would provide for consideration if received.

Action 0106: BP (MK) to clarify if other gas quality parameters are affected (CV, Wobbe and Dewpoint).

It was suggested that a statement regarding the current position in respect of the EU standard on gas quality be included. PH offered to provide this.

Action 0107: *EU standard on Gas Quality* - PH to provide a statement regarding the current position for inclusion in the Workgroup Report.

PH and DB confirmed they would consider if NTS would need to provide a statement regarding National Grid NTS' assessment of its operational risks.

Action 0108: *National Grid NTS to consider if an assessment of its operational risks is required* - PH and DB to provide a statement for inclusion in the Workgroup Report (if required).

6.0 Consideration of wider impacts/costs on various parties (including consumers)

To be considered/assessed once other NTS analysis has been received.

As observed earlier, MK confirmed that the Oil and Gas Authority have been very involved in discussions with regards to maximising economic recovery with respect to the RHUM gas field. It was suggested that MK and DO might provide a statement in respect of discussions/involvement of the Oil and Gas Authority, for inclusion in the Workgroup Report.

Action 0109: MK and DO to provide a statement in respect of discussions/involvement of the Oil and Gas Authority, for inclusion in the Workgroup Report.

7.0 Carbon Cost Assessment (CCA)

When making its assessment of the impacts of increasing the carbon dioxide parameters, the Workgroup has been requested by the UNC Modification Panel to provide a Carbon Cost Assessment. The Workgroup will formally respond to this request when making its report.

To assist the Workgroup, DR gave a brief overview of the requirements that should be included in a CCA. It was possible to place a quantifiable value on CO₂ and other greenhouse gas emissions and this value can be used when assessing the impact on these emissions on proposed code modifications. In view of this, Ofgem would expect that such costs and benefits should be taken into account (where relevant) when the Workgroup is assessing a modification proposal against the relevant code objective.

Where an assessment of greenhouse gas emissions is undertaken it should quantify the impact on carbon dioxide and/or other greenhouse gas emissions in terms of tonnes of CO₂ (using updated guidance provided by DECC). DR gave brief details of what this included.

A range of cost scenarios should be developed for changes (increases or decreases) in emissions in sectors covered by the EU ETS generally valued at the 'traded price of carbon' and changes in emissions for sectors not covered by the EU ETS generally valued at a 'non-traded price of carbon'. Any assessment should clearly state the source of values used. If the assessment uses values, which differ from the prevailing DECC guidance, these should be robust/justifiable in the context of the analysis. Scenarios using both a social discount rate and a commercial discount rate should also be included (parties were referred to the guidance in the Treasury Green Book).

AP queried that as there would be no overall change to emissions was a CCA required. The CO₂ content of the gas over a period of time will not change, just the content per unit over a small period of time; while the unplanned outage is managed. CS also suggested that there were less realistic options for 0607S than was the case for the Teesside Modifications 498/502 and therefore their maybe less benefit in considering CO₂ removal alternatives in the assessment.

DR indicated that this might still need to be provided, with the appropriate statements but would check the relevant guidance.

MK and DO indicated they would in preparation for drafting a CCA document define the different realistic options and explain why any could not be pursued (e.g. not viable time limits). They would also consider what relevant analysis would need to be undertaken to demonstrate the material/immaterial impacts of the proposal.

Action 0110: Carbon Cost Assessment (CCA) - MK and DO to define the different realistic options for a CCA and explain why any could not be pursued (e.g. not viable time limits) and consider what relevant analysis that would need to be undertaken to demonstrate the material/immaterial impacts of the proposal.

8.0 Alternative Options

To be considered and assessed if presented following further analysis.

9.0 Development of Workgroup Report

Drafting has commenced.

It is expected that this document will evolve in response to Workgroup discussions, with revisions/additions expected to be made following receipt of various contributions as assessments progress.

A revised draft will be published for review following each meeting.

Appendices

The draft information (graphs) provided under Appendix 1 was discussed. PH will update and add to the information as appropriate.

Action 0111: Workgroup Report Appendix 1 - PH to update and add to the information (graphs) as appropriate.

10.0 Review of outstanding actions

0101: National Grid NTS (PH) to provide historical flow and CO₂ data at each St Fergus sub terminal, in order to provide a view on the BP/NSMP analysis as presented.

Update: The action was expanded to encompass more detail (see 4.0, above); update to be given next meeting. **Carried forward**

0102: BP (MK) to investigate the CO₂ content of the Norwegian gas at its source(s) and assess the potential effects if a change were to be made to the current CO₂ limits.

Update: Work continues; update to be given next meeting. **Carried forward**

11.0 Next Steps

CS reminded that the Workgroup's report is due for consideration at the UNC Modification Panel meeting on 15 June 2015 (submission date 02 June 2015).

All parties will continue to maintain active involvement and contribute to the review and drafting process.

Parties with responsibility for providing statements and supporting information for inclusion in the draft Workgroup Report should send them to the Joint Office as soon as possible in the interim so that a further iterative draft can be prepared for discussion at the next meeting.

At the next Workgroup meeting it will be the intention to continue to formally structure and shape the Workgroup's report, with the primary focus being on the technical analysis provided and the further outputs from any outstanding actions, and how these will inform the Workgroup's views and be translated into meaningful content. The Workgroup will consider:

- any amendments to the modification if provided (further background to the proposed change)
- additional analysis provided
- assessment of operational risks
- anticipated impact on gas quality
- wider impacts/costs on various parties (including consumers)

- draft Carbon Cost Assessment (if provided)
- alternative options
- development of the Workgroup Report.

12.0 Diary Planning

Further details of planned meetings are available at: www.gasgovernance.co.uk/Diary

Please note the changes to the February and March dates/venues (as discussed and replanned at this meeting).

Workgroup meetings will take place as follows:

Time/Date	Venue	Workgroup Programme
10:30, Monday 20 February 2017	The Conference Room, Elexon, 350 Euston Road, London NW1 3AW	<ul style="list-style-type: none"> • Development of Workgroup Report
10:30, Wednesday 22 March 2017	Rooms LG5/6 combined, Energy UK, Charles House, 5-11 Regent Street, London SW1Y 4LR	<ul style="list-style-type: none"> • Development of Workgroup Report
10:30, Tuesday 25 April 2017	Consort House, 6 Homer Road, Solihull B91 3QQ	<ul style="list-style-type: none"> • Development of Workgroup Report

Action Table (as at 27 January 2017)

Action Ref	Meeting Date	Minute Ref	Action	Owner	Status Update
0101 (expanded)	05/01/17 27/01/17	2.1 3.0	<p>National Grid NTS (PH) to provide:</p> <p>a) Historical flow and CO₂ data at each St Fergus sub terminal, in order to provide a view on the BP/NSMP analysis as presented.</p> <p>b) In respect of the four scenarios (and any other(s) identified), provide a 'heat map' analysis; to include St Fergus aggregate flows/penetrations under different conditions (summer and winter); the usual CO₂ specification; the risk of entry and how</p>	National Grid NTS (PH)	Carried forward

Action Table (as at 27 January 2017)

Action Ref	Meeting Date	Minute Ref	Action	Owner	Status Update
			<p>far any out of specification flow might then be expected to reach.</p> <p>c) Direct Connects (DCs) that could be receiving over 4mol% to be identified on the flow routes, and who might potentially be affected if penetration reaches further zones.</p>		
0102	05/01/17	2.1	BP (MK) to investigate the CO ₂ content of the Norwegian gas at its source(s) and assess the potential effects if a change were to be made to the current CO ₂ limits.	BP Gas (MK)	Carried forward
0103	27/01/17	4.0	<i>Scenarios 1-4</i> – MK to add the duration of the slug to each Scenario and re-present the information.	BP Gas (MK)	Pending
0104	27/01/17	4.0	<i>Reliability of field plant/equipment</i> - DO to provide a statement to support the view of forecast unplanned outages (for inclusion in the Workgroup Report).	NSMP (DO)	Pending
0105	27/01/17	4.0	BP and National Grid NTS to consider if any adaptations can be made (from both an NEA change perspective and a change to operational procedures) to the operating arrangements between the terminals and the NTS, to manage out of specification gas resulting from an unplanned outage.	BP (MK) and National Grid NTS (PH)	Pending
0106	27/01/17	5.0	BP (MK) to clarify if other gas quality parameters are affected (CV, Wobbe and Dewpoint).	BP (MK)	Pending
0107	27/01/17	5.0	<i>EU standard on Gas Quality</i> - PH to provide a statement	National Grid NTS	Pending

Action Table (as at 27 January 2017)

Action Ref	Meeting Date	Minute Ref	Action	Owner	Status Update
			regarding the current position for inclusion in the Workgroup Report.	(PH)	
0108	27/01/17	5.0	<i>National Grid NTS to consider if an assessment of its operational risks is required - PH and DB to provide a statement for inclusion in the Workgroup Report (if required).</i>	National Grid NTS (PH) and (DB)	Pending
0109	27/01/17	6.0	MK and DO to provide a statement in respect of discussions/involvement of the Oil and Gas Authority, for inclusion in the Workgroup Report.	BP (MK) and NSMP (DO)	Pending
0110	27/01/17	7.0	<i>Carbon Cost Assessment (CCA) - MK and DO to define the different realistic options for a CCA and explain why any could not be pursued (e.g. not viable time limits) and consider what relevant analysis that would need to be undertaken to demonstrate the material/immaterial impacts of the proposal.</i>	BP (MK) and NSMP (DO)	Pending
0111	27/01/17	9.0	<i>Workgroup Report Appendix 1 - PH to update and add to the information (graphs) as appropriate.</i>	National Grid NTS (PH)	Pending