

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

Thursday 05 January 2017

Elaxon, 350 Euston Road, London NW1 3AW

Attendees

| | | |
|--------------------------|-------|--------------------------|
| Chris Shanley (Chair) | (CS) | Joint Office |
| Lorna Dupont (Secretary) | (LD) | Joint Office |
| Andrew Blair | (AB) | Interconnector UK |
| Andrew Pearce | (AP) | BP Gas |
| Angharad Williams | (AW) | National Grid NTS |
| Anna Shrigley | (AS) | Eni Trading & Shipping |
| Charles Ruffell | (CR) | RWE |
| Colin Hamilton | (CH) | National Grid NTS |
| David Cox | (DC) | London Energy Consulting |
| David O'Donnell | (DO) | NMSP |
| Graham Jack | (GJ) | Centrica |
| Jeff Chandler | (JCh) | SSE |
| John Costa | (JCo) | EDF Energy |
| Julie Cox* | (JCx) | Energy UK |
| Justin Goonsinghe | (JG) | National Grid NTS |
| Murray Kirkpatrick | (MK) | BP Gas |
| Nick Wye | (NW) | Waters Wye Associates |
| Phil Hobbins | (DB) | National Grid NTS |
| Richard Fairholme* | (RF) | Uniper |
| Sean Hayward | (SH) | Ofgem |
| Steve Britton* | (SB) | Cornwall-Insight |
| Terry Burke | (TB) | Statoil |
| Tom Andrews* | (TA) | Cornwall-Insight |

**via teleconference*

Copies of all papers are available at: <http://www.gasgovernance.co.uk/0607/050117>

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

1.0 Outline of Modification

MK introduced the modification and explained its intent and purpose, which was to facilitate a change to the current contractual Carbon Dioxide limit at the St Fergus NSMP System Entry Point, through modification of a Network Entry Provision contained within the Network Entry Agreement (NEA) between National Grid Gas plc and North Sea Midstream Partners Limited (NSMP) in respect of the St Fergus NSMP Sub Terminal.

2.0 Initial Discussion

2.1. General

Referring and responding to Transmission Workgroup Action TR1201: *MK (BP Gas) to produce analytical data of the number of occurrences when the CO₂ limit could have been above 4mol%, including diagrams of the operational processes and flows at the site, which*

had arisen from the December pre-modification discussions, MK presented analysis and the various 'worst case' scenarios that might arise.

A schematic illustrating the St Fergus sub-terminal entry to the NTS was displayed, and MK described and explained the configuration and how and when the various connections/gas flows combined and fed into the NTS entry point. The problem arises when an unplanned trip occurs at Laggan Tormore and there is insufficient blend gas within the FUKA pipeline to manage the requirement to reduce the CO₂ limit to 4mol% before reaching the NTS entry point. There are no CO₂ removal systems at the terminal so the Rhum owners currently manage the risk by purchasing Vesterled gas on a daily basis to ensure there is a sufficient supply of firm gas available for blending should Laggan Tormore experience an unplanned trip. If this safeguard were not in place then the whole Frigg system would have to be shut down while the off-spec gas in the pipeline was removed. A question was asked as to what would happen with the Norwegian gas if there was a complete shut down, and it was explained that it is not affected as it is low CO₂ anyway, metered separately, enters further down the pipeline and is processed separately.

Different scenarios were discussed and how they could be treated. The blending capabilities and restrictions were discussed, including the gas travelling time from Heimdal to the St Fergus terminal, and what commercial arrangements might be in place. Shippers in the Norwegian Gassco system decide where their gas goes (to Europe or St Fergus or Langeled) and Rhum owners have arrangements with certain Gassco Shippers to provide the gas day in/day out. AS observed that the GB charging arrangements also influence this, noting that St Fergus compression charges are among the most expensive, and there are other complex reasons why St Fergus is not the most favoured place to land Norwegian gas. It was asked, why is not the gas blended with SAGE and SEGAL gas to remove the issue? SAGE and SEGAL have separate entry points into the NTS and are downstream of that compression station, and the blend requirements happen effectively within the NTS terminal. Frigg gas blends with Vesterled and then further with SAGE and SEGAL before entering the NTS terminal.

DO emphasised that the 5.5% limit would only be needed operationally if an offshore trip at the low CO₂ Laggan Tormore field occurred. He explained that when Laggan Tormore restarted after such a trip it would push a volume of high CO₂ gas from Rhum towards the terminal in a stream of other UKCS gas and thus causing a temporary CO₂ spike. If this gas could not be blended the result would be the shut in of all UKCS gas in the Frigg line and not just Rhum flows. If the NTS were to refuse entry there would be enormous liabilities for the Rhum owners and so they are forced to buy firm quantities of gas daily as a contingency (against potential unplanned trips). It was questioned why the Rhum owners had agreed to what was commercially disadvantageous for them but clearly advantageous for a Gassco Shipper which would be flowing gas anyway. MK reiterated the need for Rhum owners to guarantee a source of blend gas to mitigate the liability of the NTS refusing entry due to Frigg gas being off spec for CO₂. The alternative to flow Rhum at low rates is not economic.

Noting its recent return to service, JCx observed that Rhum had been in operation previously so why had this not been a problem at that time? DO explained that in its previous running time it had been able to blend with other offshore fields which were now out of commission/running low. Previously all the gas flowed was within the specification but Rhum flow rates are now relatively higher as a result of Rhum having been shut in due to EU sanctions against Iran and the capability does not exist in the Bruce field (insufficient gas) to alleviate the problem. It was suggested that an explanation of the historic position should be included in the modification to help set the proposal in context and provide a better understanding of why some perceived options might not be available. MK noted this for review.

DO reiterated that the problem will arise when Laggan Tormore goes offline unplanned. Under all circumstances the agreed specification NTS delivery has to be maintained, and at present

the only way to manage this is to buy the blending contingency. DO added that NSMP does accept a higher specification as long as access to blend gas is available.

GJ suggested the installation upstream of chromatographs; the NSMP entry point could have 5.5mol% provided 4mol% is not breached on the feeders. It was highlighted that this option would require NTs to provide a blending service and that it was similar to the commercial arrangements being proposed in the modification.

MK presented analysis of the occurrences when St Fergus NSMP terminal CO₂ limit could have been above 4mol%. Since the start up of twin compressor operation in May 2016, there had been 8 separate “total” outages of Laggan Tormore. Laggan Tormore gas had been unavailable only 4% of the time. The cost of purchasing this contingency blend gas to cover these unplanned outages is prohibitive to Rhum and no longer sustainable. If another contingency mechanism cannot be found then it will lead to the early closure of both the Rhum and the Bruce fields. It was suggested that this point should be noted in the Workgroup’s report.

An example of operational flows at the St Fergus NSMP terminal was then displayed and MK explained the associated data.

A blend gas graph illustrating St Fergus sub-terminals system entry volumes from May 2012 - May 2016 was displayed. It was noted there were only 3 unplanned days when both SAGE and SEGAL were unavailable simultaneously (a frequency of 0.2%). In these circumstances SAGE and SEGAL do not mitigate the risk of being over 4mol% (and fields would shut).

St Fergus CO₂ blending analysis for typical “Summer Norm’ days (reference day 30 June 2016) across 4 different scenarios was presented and discussed and MK and DO responded clarifying various points relating to each individual scenario. Rhum owners had considered installing a CO₂ removal plant, but that would be a long term project (3 years) and not economic/feasible. If this modification to the CO₂ specification can be made then Rhum and Bruce could have a longer lifespan to circa 2023. It was suggested that it could have a temporary 5.5mol% limit, and it was noted that similar modifications (UNC 0498 and 0502) relating to Teesside were conditional.

DO reiterated that restarting following an unplanned trip was the issue, because of the compression effect which gives a large spike of high CO₂ gas to deal with and manage.

It was observed that parties are most interested in what it means for them - the scenarios look as if the gas flowing into the NTS does not go above 4mol% even when Laggan Tormore goes offline unplanned. It was suggested that a chart of probabilities was required to assist understanding. It was also suggested that National Grid NTS’ views on the BP/NSMP’s analysis would be useful, and anything else the NTS felt that the Workgroup should need to be aware of. JCx added that it would also be useful to look at historical data (flow and CO₂).

JCo also queried that if the modification were to be implemented could it lead to higher CO₂ content in Norwegian gas too, as they could take advantage of the higher limit?

Action 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.

Action 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.

SH asked whether a Carbon Cost Assessment would be required. CS affirmed that this had

already been requested by the UNC Modification Panel that this would form part of the Workgroup Report (see 2.2, below).

The suggestion of a chromatograph installation was reiterated, and measuring at an ASEP level rather than at a sub-terminal level. This could be less expensive than a CO₂ removal plant.

2.2. Issues and Questions from Panel

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; and
- To provide a Carbon Cost Assessment.

The Workgroup will formally respond to these requests when making its report.

2.3. Initial Representations

None received.

2.4. Terms of Reference

As matters have been referred from Panel a specific Terms of Reference has been published alongside the Modification at <http://www.gasgovernance.co.uk/0607>.

CS drew attention to the particular matters that the Workgroup must address in its assessment and report (see 2.2 above).

3.0 Next Steps

The Workgroup will consider:

- any amendments to the modification (further background to the proposed change)
- additional analysis provided by National Grid NTS
- assessment of operational risks (frequency of occurrence and the penetration into the NTS)
- 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.

4.0 Any Other Business

None raised.

5.0 Diary Planning

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

Workgroup meetings will take place as follows:

| Time/Date | Venue | Workgroup Programme |
|---------------------------------------|--|---|
| 10:00, Friday 27 January 2017 | Consort House, 6 Homer Road, Solihull B91 3QQ | <ul style="list-style-type: none"> See 3.0, above. |
| 10:00, Tuesday 21 February 2017 | The Conference Room, Elexon, 350 Euston Road, London NW1 3AW | <ul style="list-style-type: none"> Development of Workgroup Report |
| 10:00, Tuesday 21 March 2017 | Orange Room, Elexon, 350 Euston Road, London NW1 3AW | <ul style="list-style-type: none"> Development of Workgroup Report |

Action Table (as at 05 January 2017)

| Action Ref | Meeting Date | Minute Ref | Action | Owner | Status Update |
|-------------|--------------|------------|--|------------------------|----------------|
| 0101 | 05/01/17 | 2.1 | National Grid NTS (PH) to provide historical flow and CO ₂ data at each St Fergus sub terminal, in order to provide a view on the BP/NSMP analysis as presented. | National Grid NTS (PH) | Pending |
| 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) | Pending |