

# Gas Transmission

## 0771: Removal of the absolute requirement to include a Remotely Operable Valve (ROV) Installation for all new NTS Entry connections

Transmission workgroup  
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nationalgrid



# Modification proposal

## Removal of the absolute requirement to include a Remotely Operable Valve (ROV) Installation for all new NTS Entry connections

**Proposal:** The modification proposal seeks to remove the absolute requirement to install a ROV at new entry points.

**Background:** Project CLoCC simplified designs to include a non-Remotely Operable Valve (ROV) solution for NTS Exit connections. The implementation of the UNC Mod 0627s on 17<sup>th</sup> January 2018 means that National Grid (NG) now has discretion over whether we include a ROV at new NTS exit connections.

**We now wish to extend the removal of the absolute requirement to NTS Entry connections.**

# Why change?

- By removing the absolute requirement for a ROV the **customer will have a choice.**
- The removal of the 'absolute requirement' would leave the customer with two options:
  - **Installation of high integrity gas quality measurement systems** which remove the requirement for downstream Gas Quality measurement and a ROV. This will be subject to a Formal Process Safety Assessment (FPSA)
  - Installation of NTS downstream (and upstream if bi-directional flow on the feeder) **GQ measurement, and a ROV** which can be closed should gas conveyed on the NTS be measured as GSMR non-compliant.
- This change is proposed based on
  - **Customer feedback**
  - The ability to make the process of connection more **efficient**
  - Create **cost savings** for each connection (up to £250,000 for ROV and telemetry) and **reduce cyber risk**

# Solution

Based on the customer choice from the options in the previous slide, National Grid will carry out a **Formal Process Safety Assessment (FPSA)** to determine if a connection solution should include a ROV or whether it is acceptable to not have the ROV.

If NG determine that a ROV isn't required then, if a customer installs **high integrity gas quality measurement** systems National Grid will **validate** the customers gas quality measurement system and confirm there is **no chance of a breach of GS(M)R** compliance.

If NG determine that a ROV is required, based on the safety assessment this will be required to be installed.

The section of Code looking to be amended is within Section Y, section 26 and is only applicable to National Grid.

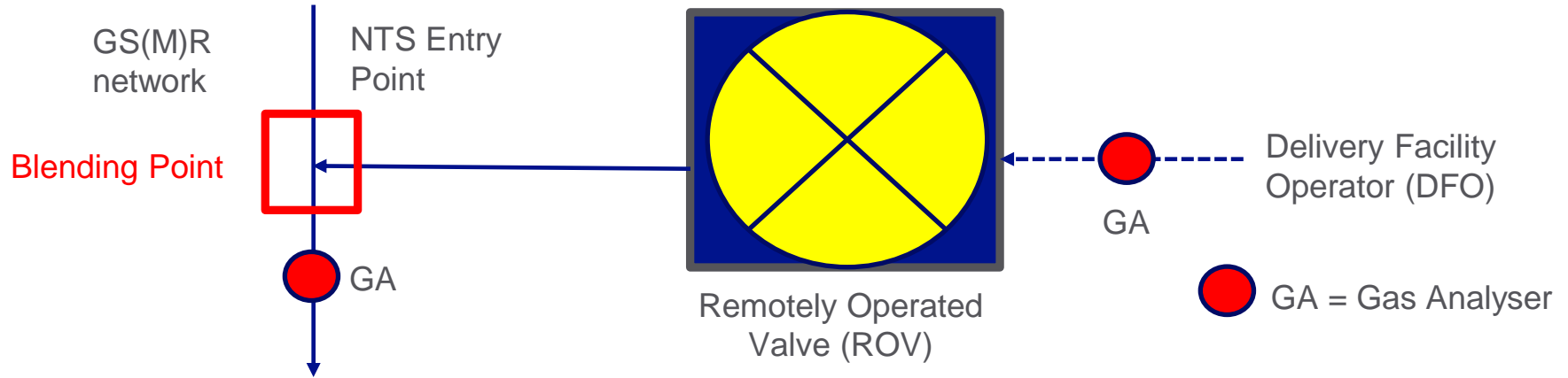
## **0771: Removal of the absolute requirement to include a Remotely Operable Valve (ROV) Installation for all new NTS Entry connections**

During the pre-modification discussions for 0771 at June's Transmission workgroup National Grid were asked to demonstrate the configuration of new Entry connections as per the current set up and the set ups in the future should a new connection have a ROV or not.

There was a request to understand if the Gas Network Control Centre (GNCC) receive the gas quality parameters from the gas analysers It was suggested that diagrams would help for understanding of the process.

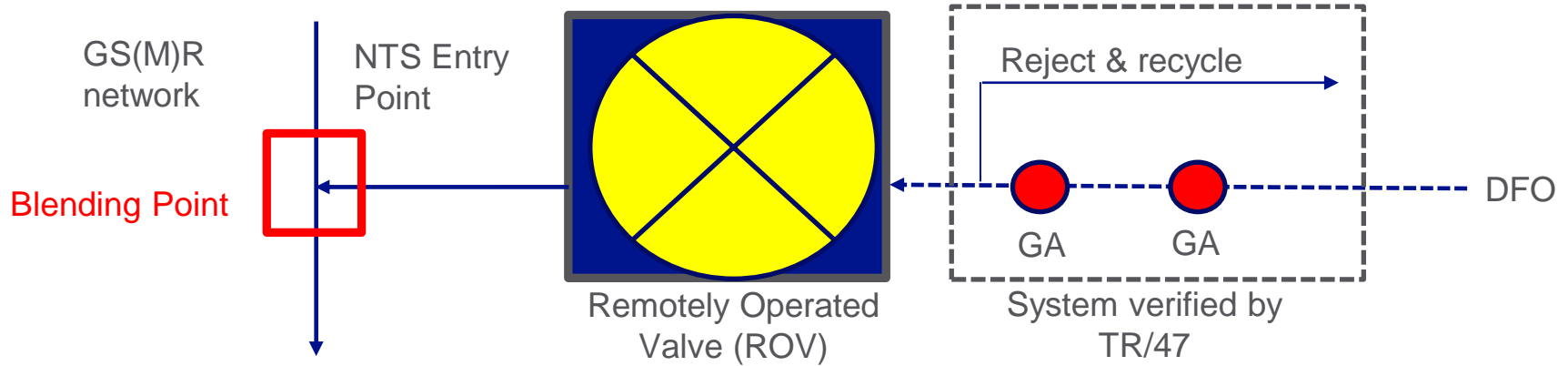
Action 0601: RHi to produce a diagram that explains how the gas quality measurement feeds back to the National Grid Control Centre.

# Current configuration of new NTS Entry Connections



- Gas analysers are installed before and after the ROV to monitor the gas specification
- The gas analysers send repeat signals to the GNCC
- Any breach of GS(M)R identified by the GNCC results in the Transportation Flow Advice (TFA) procedure to curtail off-specification gas
- The ROV is only used as a last resort and is not considered a safety valve

# A new NTS Entry Connection with High Integrity Gas Monitoring and a ROV



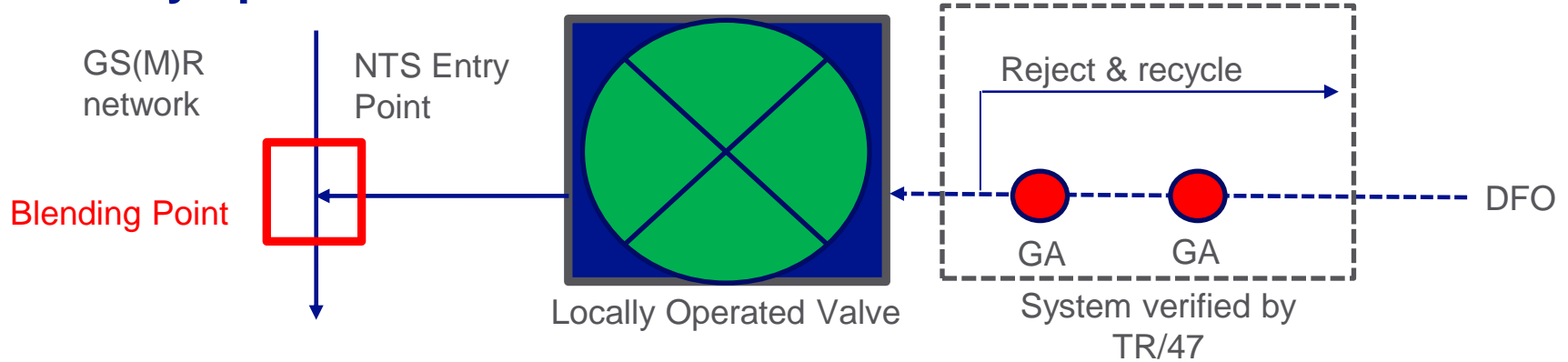
- Two gas analysers are installed before the ROV to monitor the gas specification; any off specification gas is subject to the automated reject and recycle process. The gas analysers send repeat signals to the GNCC.
- The reject and recycle functionality is an automated process. A breach of GS(M)R is not anticipated. However if there is a breach of GS(M)R identified after the Blending Point by the GNCC the Transportation Flow Advice (TFA) procedure to curtail off-specification gas would be enacted.
- The ROV is only used as a last resort and is not considered a safety valve

# Controls on High Integrity Gas Monitoring Equipment

- Where high integrity gas monitoring equipment is installed the control system is designed to perform a flow shut down if any one of the two measurements systems breach any of the alarm limits for GS(M)R and this shall be in such a period that the transportation of that gas shall not have reached the NTS
  - The customer must be able to terminate flow before their gas reaches the NTS if the analysis system indicates a problem. This is presented in their Operating Philosophy which assures NG that the design of their system meets the requirements.
- The TR/47 requires National Grid to verify and calibrate all the high integrity gas quality monitoring equipment to ensure no risk of off specification gas entering the network
- Customers are visited by National Grid on site every few years for metering checks
- All Gas Quality equipment is evaluated against the principles of ISO 10723. The Customer is also required to send through reports when they carry out ISO 10723 evaluations of the gas analysers (typically every two years).



# A new NTS Entry Connection with High Integrity Gas Monitoring and a locally operated valve



- Two gas analysers are installed before the ROV to monitor the gas specification; any off specification gas is subject to the automated reject and recycle process. The gas analysers send repeat signals to the GNCC.
- The reject and recycle functionality is an automated process. A breach of GS(M)R is not anticipated. However if there is a breach of GS(M)R identified after the Blending Point by the GNCC the Transportation Flow Advice (TFA) procedure to curtail off-specification gas would be enacted.
- The locally operated valve is only used as a last resort and is not considered a safety valve; this can be closed locally if required as a last resort.

## Additional considerations

- A Formal Process Safety Assessment (FPSA) will be conducted on all new Entry Connections and identify any risks. The FPSA identifies what Safety Integrity Level (SIL) is required at each new Entry Connection on an individual basis. This will determine whether an ROV is required or not. An ROV may be required on the basis of pressure or temperature at the connection.
- For either an ROV or a locally operated valve the GNCC would only consider closing these as a last resort. They are not considered a safety measure. A ROV requires human intervention to be shut. Safety measures are primarily automated.
- Connection Agreements provide the DFO with the parameters that are required to be compliant with the GS(M)R specifications. The TFA process is used to curtail off-specification gas

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