

# Common Maintenance Types on the Gas National Transmission System

## Planned In-line Inspection

National Grid is required to carry out In-line inspections of our pipelines periodically in order to maintain their integrity, by ensuring that they comply with the Pressure Systems Safety Regulations (PSSR) 2000.

The In-line inspection process requires a number of Pipeline Inspection Gauges (PIGs) to travel through the pipeline in order to complete a full inspection. The number of runs can vary from pipeline to pipeline but the programme usually consists of the following:

- Gauge PIG – this tool is fitted with a gauge plate to confirm that there is no reduction in pipeline diameter due to external interference or debris
- Cleaning PIG – the tool is fitted with brushes to clean the pipe and remove debris such as loose internal pipecoating or welding materials
- Gauge / Cleaning PIG Contingency Day – scheduled in case a possible repeat run for the Gauge or Cleaning tool is required
- Inspection PIG – this tool is used to detect any defects in the pipeline, by using magnetic fields to identify areas of pipeline wall thickness loss. Occasionally there may be a need to schedule two separate runs to do this one inspection
- Contingency Day – scheduled in case a possible repeat run for the inspection tool is required

In order for the PIG to record accurate information we need to ensure that a steady gas flow through the pipeline section is maintained. This is done by manipulating the flow of gas into the pipeline, the demands within the section of pipeline and the demands downstream of the section of pipeline being inspected. If a site takes gas from within the section of pipeline being inspected we will require this site to be offline during the run, as the flow of gas through the pipeline will be higher before the point of offtake compared to after the point of offtake.

This could result in the PIG stopping or slowing down during the run which could result in the PIG getting stuck within the pipeline or the data collected being corrupt, requiring a re-run of the inspection tool. If a site takes gas downstream of the section of pipeline being inspected, we may require this site to be on a steady and possibly specific rate of offtake (this could be a reduction), in order for us to ensure that the correct demand on the pipeline is created and maintained throughout the run. Any fluctuations in demand could cause the PIG to speed up or slow down and again result in the data collected being corrupt, requiring a re-run of the inspection tool.

## Planned Defect Inspections

We are required to carry out In-line inspections of our pipelines periodically in order to maintain their integrity, by ensuring that they comply with the Pressure Systems Safety Regulations (PSSR).

The results of an In-line inspection may require a pressure reduction within a section of pipeline, in order to undertake a visual inspection and repair of any identified defect.

The severity of the defect will determine the pressure reduction required and this may result in the pipeline being isolated (shutdown).

Any sites within the isolated section of the pipeline will normally need to be on full cessation for the duration of the works. It may be possible to maintain a small supply to an offtake point by continuously topping up the isolated section, whilst maintaining the reduced pressure, however, this is dependent on the individual job requirements.

## **Remove Valve Operation Maintenance**

Valves form an integral part of the National Gas Transmission System (NTS). They are used to control the flow of gas on the system and to isolate pipelines in an emergency. Valves can be either controlled remotely from the Gas National Control Centre or need to be operated locally on site.

To ensure the safe continual operation of these valves, National Grid has a policy to maintain key valves on an annual basis. In addition to this annual maintenance there may be a requirement to prove remote operation of the remote valves following faults, upgrades to software, etc. Whilst undertaking maintenance of these valves, they will need to be opened and closed to prove operation. The majority of valves on the system have a bypass around them to maintain supply to offtake points during this process. Where this is not the case, we will require either a full cessation or reduction in flow at the offtake in question, to allow us to carry out our maintenance.