Measurement Error Report

IH E&I Services Ltd

MER NO015 Howdon BNEF

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1 Revision Control

Rev	Issue date	Description	Prep.	App.
1	25/02/2020	Issued for comment	BK	KV

2 Executive Summary

Site Name	Howdon BNEF
DNO	Northern Gas Networks
LDZ	North
Error Start Date	1st April 2016
(Or) Last Good Date	
Error Corrected Date	31st December 2018
Size of Error (over or under read)	44,405 Sm^3 over-registration (approximately 0.5 GWh)
Error Description	Errors in Gemini billed data
Methodology	Comparison of fiscal meter flow readings
Meter Type	Rotary meter
MER Unique Reference Number	NO015
NGN Internal Reference	MERNO015

3 Error Description

Howdon BNEF has a single 3" GE RootsMeter rotary positive displacement meter stream for measurement of gas exiting the grid entry unit (GEU) and entering the distribution network (referred to in this report as 'Fiscal Meter'). The Fiscal Meter data is recorded on a 4-minutely basis and a daily volume and energy totals are captured in the Ofgem-regulated DANINT FWACV process software. The daily totals are transferred to Northern Gas Networks DNCC and then on to the Gemini billing database maintained by National Grid.

In a previous measurement error report (MERNO014), it was noted that the Gemini data had a number of erroneous entries, where previous entries were duplicated. Therefore, a further investigation was undertaken outside the original measurement period. This investigation covered 1st April 2016 to 31st December 2018 also found a number of erroneous entries in the Gemini data.

4 Methodology

Gemini Data was compared to the flow computer integrator readings for each gas day and was in good agreement apart from a few days (listed in Table 1). It was noted that on the majority of these days the Gemini reading was identical to the previous day, which is highly unlikely. Additionally, there were three days in August 2016 where the Gemini database was double the measured value. The daily totals for these days were corrected using the flow computer integrator readings.

5 Error Quantification

Gas Day	Daily Volume (Sm^3)		Description
	Gemini	Flow Computer	
21-Apr-2016	22320	22071	Identical to 20th April 2016
25-Apr-2016	20360	15775	Identical to 23rd April 2016
02-Aug-2016	46620	23389	Double flow computer reading
19-Aug-2016	31860	15909	Double flow computer reading
20-Aug-2016	37460	18758	Double flow computer reading
09-Sep-2016	17700	20597	Identical to 8th September 2016
10-Sep-2016	17700	24502	Identical to 8th September 2016
11-Sep-2016	17700	25098	Identical to 8th September 2016
06-Nov-2017	25200	26416	Identical to 5th November 2016*

Table 1 - Gemini Daily Volume Errors

* The Gemini daily volume for 6th November is in error, however the daily energy total is consistent with the flow computer.

The error due to the erroneous Gemini data is estimated to be an over-registration of 44,405 Sm^3, which should be reconciled using the daily correction factors (DCF) in Appendix A.

6 Learning

The cause of the discrepancies in the Gemini data should be investigated and resolved.

7 References

Howdon Site Data Files (DAT$####.ST3)
Gemini Daily Volumes
MER_NO015_Howdon_Data.xlsx – Calculation Data spreadsheet

8 Appendix A – Daily Correction Factors

The total error should be corrected using the Daily Correction Factors (DCF) applied to the Gemini data as detailed below. Note that no energy correction is required on 6th November 2017, only the volume is in error and should be corrected.

Gas Day	Daily Volume		Daily Energy	
	Gemini (MSm^3)	DCF	Gemini (kWh)	DCF
21-Apr-16	0.02232	0.988844	244,900	0.988844
25-Apr-16	0.02036	0.774804	223,993	0.774804
02-Aug-16	0.04662	0.501695	512,798	0.501695
19-Aug-16	0.03186	0.499341	345,106	0.499341
20-Aug-16	0.03746	0.500747	406,812	0.500747
09-Sep-16	0.01770	1.163672	195,661	1.163672
10-Sep-16	0.01770	1.384294	195,661	1.384294
11-Sep-16	0.01770	1.417966	195,661	1.417966
06-Nov-17	0.02520	1.048254	291,872	**1.000000**