

METER ERROR REPORT

Final

Reconcile?	N
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Safety Issue?	N
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Thesis Report No.	N/A
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1. EXECUTIVE SUMMARY

SITE NAME	CARESTON OFFTAKE
LDZ	SCOTLAND
LAST GOOD DATE	23 DECEMBER 2010
START DATE	24 DECEMBER 2010
END DATE	06 JANUARY 2011
SIZE OF ERROR	N/A
ESTIMATE – Y/N?	Y
ROOT CAUSE	TURBINE METER FAILURE
ANALYSIS	DNCC data
METER TYPE	TURBINE
AUTHOR	T Roberts
CHECKED BY	

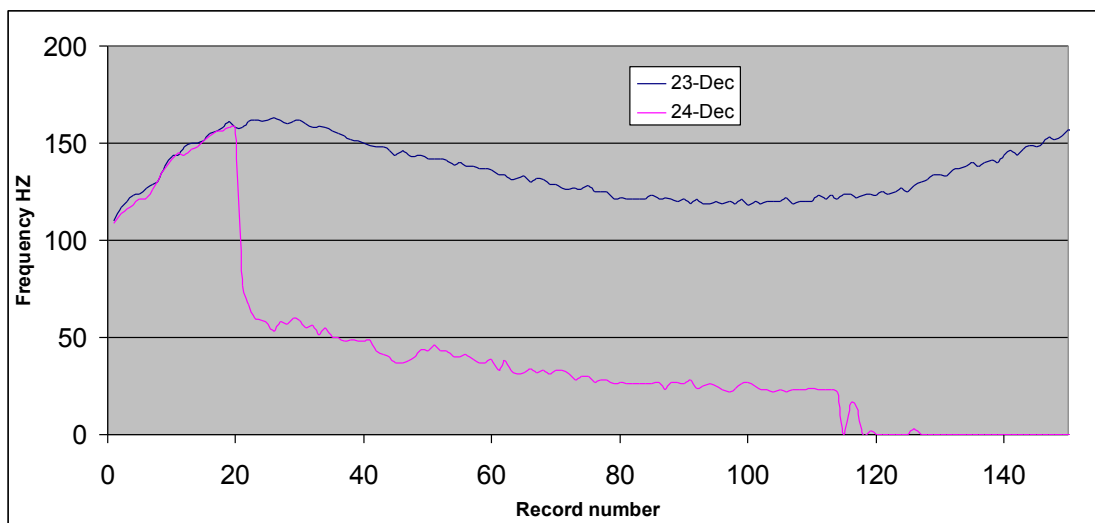
2. BACKGROUND

Gas is supplied to part of the Scotland network at Careston Offtake which employs a single stream turbine meter for flow rate measurement. During the morning of 24/12/2010 the meter output initially dropped rapidly and then gradually reduced to zero by 14:42 (see chart below).

Metering resumed on 6/1/2011 with the installation of a new turbine meter.

The following comment was made after inspection of the failed meter:

Unfortunately the meter appears to have suffered a catastrophic failure and is seized, the turbine blades are intact but are no longer attached to the drive mechanism of the meter, I suspect a seized bearing.



Record 20 ~ 07:27 Record 120 ~ 14:42

3. ERROR QUANTIFICATION AND IMPACT

SGN DNCC made daily corrections to the DVOL for the period 24/12/2010 to 6/1/2011. These corrections were entered in to Gemini by National Grid (NG). On 27/1/2011 DNCC made further corrections to two of the days in the period. These subsequent corrections have not been entered in to Gemini. The note from SGN to NG is copied below along with a table detailing the daily volumes.

Extract of a note from SGN DNCC to National Grid 27/1/2011:

Following on from the failure of the meter at Careston over the Christmas and New Year period we would like to amend a couple of the estimated DVOLs submitted so that a consistent methodology is used for the entire period. On the 24th flows were estimated based on the previous day. On the 25th when it was realised that the meter would be out of service for some time it was decided that an alternative method was needed, particularly given the non-standard diurnal demand profiles at that time of year. It was found that over the previous month the DVOL for Careston had been very similar to that at Armadale on the majority of days.

Please can you therefore amend the DVOL for the 24th December 2010 at Careston to 0.304 mcm (based on Careston for first two hours until meter started to fail and Armadale for rest of day).

Please also amend the Careston DVOL on the 26th December 2010 to 0.231mcm as it appears to be incorrect.

NG Gemini data				SGN DNCC
Gas Day	Energy (kWh)	Volume (mcm)	CV (MJ/m3)	27-Jan-11 Volume mscm
20/12/2010	3285217	0.2913	40.6	
21/12/2010	3327170	0.29502	40.6	
22/12/2010	3482803	0.30882	40.6	
23/12/2010	3104100	0.27592	40.5	
24/12/2010	2591550	0.23036	40.5	0.304
25/12/2010	2692884	0.23996	40.4	
26/12/2010	2677789	0.2404	40.1	0.231
27/12/2010	2541111	0.2287	40	
28/12/2010	2533333	0.228	40	
29/12/2010	2544733	0.2296	39.9	
30/12/2010	2580311	0.23281	39.9	
31/12/2010	2636725	0.2379	39.9	
01/01/2011	2494133	0.2256	39.8	
02/01/2011	2700872	0.2443	39.8	
03/01/2011	2916456	0.2638	39.8	
04/01/2011	2466494	0.2231	39.8	
05/01/2011	2342119	0.21185	39.8	
06/01/2011	2703129	0.24512	39.7	
07/01/2011	3264484	0.29528	39.8	
08/01/2011	2847358	0.25755	39.8	
09/01/2011	2963826	0.26876	39.7	
10/01/2011	2781584	0.25097	39.9	

4. CAUSES

Failure of single stream turbine meter.

5. RECOMMENDATIONS AND LEARNING

It is a recommendation of this report that the changes notified to NG on 27/1/2011 for Gasdays 24/12/2010 and 26/12/2010 should be entered in to Gemini.

REFERENCES

DNCC data
Gemini data
HPMIS rbd data

VERSION HISTORY

<i>Version</i>	<i>Changes</i>	<i>Author</i>	<i>Date</i>
<i>Rev 1</i>	<i>Draft</i>	<i>T Roberts</i>	<i>15/8/2013</i>

DISTRIBUTION

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