Strategic Management Board

ACS.CMIT1
SAFETY ASSESSMENT CRITERIA
INITIAL & RE-ASSESSMENT
EMERGENCY SERVICE PROVIDER AND NON-DOMESTIC AND DOMESTIC GAS METER INSTALLER
METER INSTRUMENTATION
NATURAL GAS
LIMITED SCOPE

CMIT1 INITIAL & RE-ASSESSMENT

Introduction

Tests gas safety competence in limited scope gas work on meter instrumentation.

Comprises:

1. Gas safety legislation and Standards
2. Gas emergency actions and procedures
4. Ventilation (for non-domestic meter installations and housings)
5. Installation of pipework and fittings (small bore for meter instrumentation)
6. Combined Strength and Tightness testing (operating $\leq$1bar max)
7. Checking operating pressure
8. Unsafe situations, use of emergency notices and warning labels
9. Operation and positioning of emergency isolation controls and valves.

CBs may adopt Competence and Criteria numbering different to that used in this document.

CB documentation may adopt wording for criteria different to that used in this document, provided the meaning is unaffected.

Range

Electronic gas meter volume conversion systems fitted to non-domestic meter installations with meters of maximum operating pressure (MOP) not exceeding *75bar.' (* IGEM/GM/5 gives a range $\geq$ 38 Bar) limited by the size of small-bore pipework to an internal diameter of less than 10mm and a length of no more than 5m.

Pre-requisites

Initial

None. Covers all Natural Gas Assessments required for a LS gas meter instrumentation operative.

Re-assessment

CMIT1.

Exclusions

Altering position of meters; meter exchange; connection of outlet pipework; commissioning appliances or internal installation pipework (other than small bore pipe required for installation of meter converters/transmitters); electricity supply; connections required by instrumentation of high accuracy meter installations where, for example, flow computers are configured to receive live data of gas composition.

References and normative documents

MIs.

All relevant Documents as listed in the Legislative, Normative & Informative Document List (LNIDL), inc.:

- HSL56
- IGEM/GM/5 Edition 4
- IGEM/UP/11 GIUSP.
- IGEM/GM/7 a
- IGEM/UP/2
- IGEM/UP/1

ACS.SMB.003.ACDND identifies Normative Documents that should be held by ACs.

Abbreviations

AC. Assessment Centre
ECV. Emergency control valve
I. Initial
LS. Limited scope
MIs. Manufacturer's/manufacturers' instructions
MIV. Meter inlet valve
OP. Operating pressure
R. Re-assessment
RD. Rotary displacement

1. Gas safety legislation and Standards

KNOWLEDGE AND UNDERSTANDING		REF	I	R
1.	**HSL56:**			
(i)	Reg.2 General interpretation and application 2(1), (2), (3), (4), (6), (7), (8)		✓	
(ii)	Reg.3 Qualification and supervision 3(1), (2), (3) & (6)		✓	
(iii)	Reg.4 Duty on employer		✓	
(iv)	Reg.5 Materials and workmanship 5(1) to (3)		✓	
(v)	Reg.6 General safety precautions 6(1) to (6)		✓	
(vi)	Reg.7 Protection against damage 7(1) to (3)		✓	
(vii)	Reg.8 Existing gas fittings 8(1) to (3)		✓	
(viii)	Reg.33 Testing of appliances 33 (1) to (3)		✓	
(ix)	Reg.35 Duties of employers and self-employed persons		✓	

2. Gas emergency actions and procedures

PERFORMANCE CRITERIA		REF	I	R
1	prepare gas detection instrument for use		✓	✓
2.	sample atmosphere in meter house; check percentage of gas present		✓	✓
3.	read, interpret and record from gas detection instrument		✓	✓
KNOWLEDGE AND UNDERSTANDING		**REF**	**I**	**R**
1.	**priorities of actions and responsibilities:**			
(i)	reporting gas escapes to ESP		✓	
~~*Criteria removed*~~				
(iii)	when a risk assessment needs to be undertaken		✓	✓
(iv)	types of hazardous areas		✓	✓
(iv)	classification of hazardous areas - procedures		✓	✓
(v)	use of equipment in non-hazardous and hazardous areas		✓	✓
(vi)	certification of electrical equipment in hazardous areas		✓	✓
(vii)	authorisation and responsibilities for meter instrumentation		✓	✓
(viii)	Requirement to produce hazardous area drawings and where they should be displayed.		✓	✓
2.	limits of flammability		✓	
3.	specific gravity and its effect in relation to air		✓	
4.	hazardous ignition sources and their elimination		✓	
5.	evacuation criteria - procedure implementation- advice to occupants		✓	
6.	acceptable gas detection readings for operating electrical switches		✓	
7.	methods of preventing/reducing dangerous concentrations of gas in atmosphere		✓	

4. **Ventilation** (for non-domestic meter installations and housings)

PERFORMANCE CRITERIA		REF	I	R
1a.	assess area classification within meter housing		✓	✓
1.	identify ventilation area for area classification of meter housing		✓	✓
2.	identify installation of inadequate ventilation for area classification of meter housing		✓	✓
3.	recognise suitable ducted extraction for meter pit installations		✓	✓
KNOWLEDGE AND UNDERSTANDING			**I**	**R**

1.	calculating/positioning ventilation at high/low level in meter housings/compartments		✓	✓
2.	ventilation grilles and vents – ducted systems for meter pit installations		✓	
3.	types and sizing of grilles and vents (free area availability)		✓	✓
4.	identification of unsafe ventilation installations		✓	
5.	labels and notices		✓	
6.	ventilation of meter housings and separation from vent stack zones		✓	✓

5. Installation of pipework and fittings (small bore for meter instrumentation)

PERFORMANCE CRITERIA		REF	**I**	**R**
1.	join threaded pipe using appropriate fittings, methods and agents		✓	
2.	connect stainless steel compression joints with appropriate fittings; methods; agents		✓	
3.	install meter Instrumentation small bore interconnecting pipework .		✓	✓
4.	ensure instrumentation is gas tight (for re-assessment, Competency 6. can be assessed at this point)		✓	✓
5.			✓	✓
6.	identify instrumentation and pipework safety defects		✓	✓
KNOWLEDGE AND UNDERSTANDING		REF	**I**	**R**
1.	recognising correct types of instrumentation connections		✓	
2.	threaded fittings		✓	
3.	flexible and rigid connections		✓	
4.	jointing agents for stainless steel compression connections		✓	
5.	pipe supports, clips and fixing pipework		✓	
6.	sleeving and sealing pipework		✓	
7.	equipotential bonding		✓	
8.	temporary continuity bond		✓	
9.	siting and installation for gas controls, isolation valves		✓	
10.	**HSL56:**			
(i)	Reg.10 Maintaining electrical continuity		✓	
(ii)	Reg.18 Safe use of pipes 18 (1) to (2)		✓	
(iii)	Reg.19 Enclosed pipes 19 (1), (2), (3), (5), (6)		✓	
(iv)	Reg.20 Protection of buildings		✓	
(v)	Reg.22 Testing and purging of pipes 22 (1) to (3)		✓	
(vi)	Reg.23 Marking of pipes 23 (1) to (2)		✓	
11.	purpose and suitability to using a non-contact voltage tester		✓	✓
12	using appropriate good pipework design and material for pressure transducer installations		✓	✓

6. Combined Strength and Tightness testing IGEM /GM/5 Appendix 8

PERFORMANCE CRITERIA	**REF**	**I**	**R**
1. check compatibility of fittings to apply Strength test to fitting and assembly		✓	✓
2. remove , Plug / cap all fittings not to be strength tested		✓	✓
3. connect suitable pressure gauge to manifold		✓	✓
4 Using hand pump & operate valve to pressurise to 25% of the calculated test pressure		✓	✓
5. Observe record pressures for 1 minute		✓	✓
6 investigate any drop in pressure (repair any defects)		✓	✓
7 increases pressure at 25% increments , repeat PC 5 & 6		✓	✓
8 at the desired pressure isolate pressure source		✓	✓
9. allow 2 minutes for stabilisation		✓	✓
10. observe gauge for further 5 minutes		✓	✓

11. No pressure indicated loss is allowed		✓	✓
12. vent pressure safely through manifold		✓	✓
13. re-assemble all connections and components not strength tested		✓	✓
14. using LDF to check assembly pressurise pipework by opening connection isolation valve , repairing any leaks . (trace and repair)		✓	✓
15. record results		✓	✓
16. locate and repair a gas leak (can be referenced in activity P.C. 6 – 11)		✓	✓
17. closing test point valve , remove testing equipment , LDF test point , remove residual LDF.		✓	✓
KNOWLEDGE AND UNDERSTANDING		**I**	**R**
1. pipework parameters for strength and tightness testing, using risk assessment procedures.		✓	✓
2. range for when IGEM/GM/5 Appendix 8 testing can be applied		✓	✓
3. Pre-pressure testing precautions		✓	✓
4. Requirements for combining strength & tightness testing		✓	✓
5. Tightness Testing			
6. Requirements for tightness testing		✓	✓
7. Pressure transducer pressure testing		✓	✓
8. Where the testing pressure in within operating range of the transducer		✓	✓
9. Where the testing pressure is outside the normal operating range of the transducer		✓	✓
10. recording pressure & timings		✓	✓

7. Checking gas pressures

PERFORMANCE CRITERIA	**REF**	**I**	**R**
1. zero gauge and connect to suitable test point fitted downstream of Instrumentation supply isolation valve		✓	✓
2. re-establish gas supply to meter volume conversion test equipment		✓	✓
3. read and record OP		✓	✓
4. remove gauge; re-seal points and test for tightness using LDF		✓	✓

8. Unsafe situations, use of emergency notices and warning labels

PERFORMANCE CRITERIA	**REF**	**I**	**R**
1. identify unsafe situations as ID AR		✓	✓
2. identify and label defective installation(s)		✓	✓
3 identify when and where items are to be reported under RIDDOR		✓	✓
KNOWLEDGE AND UNDERSTANDING	**REF**	**I**	**R**
1. explain dealing with ID		✓	✓
2. explain dealing with AR		✓	✓
2a explain dealing with AR installations/appliances when turning off does not remove the risk		✓	✓
3. explain dealing with situations that do not meet current standards but are not unsafe		✓	✓
4. **identify correct notices and labels to be used:**			
(ii) warning notice forms		✓	
(iii) advisory notices, electrical bonding, RIDDOR		✓	
5. identify and explain reporting to HSE		✓	✓
6. HSL56: Reg.34 (1) – (3)		✓	
7. **GIUSP:**			
(i)			
(ii) overall scope		✓	✓
(iii) gas incidents		✓	✓
(iv) non-domestic installations		✓	✓

9. Operation and positioning of emergency isolation controls and valves (Applies to ECV/isolation control/valve)

PERFORMANCE CRITERIA		REF	I	R
1.	identify incorrectly positioned valve		✓	✓
2.	identify correctly positioned valve		✓	✓
3.	demonstrate dealing with incorrectly positioned valve		✓	✓
4.	identify correct labels and attach to valves		✓	✓
KNOWLEDGE AND UNDERSTANDING		**REF**	**I**	**R**
1.	inside meter positions		✓	
2.	outside meter positions		✓	
3.	emergency isolation valves in non-domestic premises		✓	