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

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. Tightness testing and purging
7. Checking and/or setting meter regulators
8. Unsafe situations, use of emergency notices and warning labels
9. Operation and positioning of emergency isolation controls and valves.

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

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

Range

Primary diaphragm, RD and turbine meters of capacity > 6 m^3/h at pressures ≤ 75 bar.

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 required for installation of meter converters/transmitters); electricity supply; connections required by instrumentation.

References and normative documents

MIs.

All relevant Documents as listed in the Legislative, Normative & Informative Document List (LINDL), inc.:
- HSL56
- IGEM/GM/5 Edition 3
- GIUSP.

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
Ref. Reference.

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)	action to stop a gas escape downstream of an ECV/MIV		√	
(ii)	action if gas continues to escape after turning off supply		√	
(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		√	√
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

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		**REF**	**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.	use temporary earth continuity bond correctly		√	
4.	ensure instrumentation is gas tight (for re-assessment, Competency 6. can be assessed at this point)		√	√
5.	purge instrumentation and pipework of air		√	√
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 and vent stacks		√	
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)		√	

6. Tightness testing and purging (for new gas meter volume conversion systems to BGES/PT5, Figs. 1 and 2)

PERFORMANCE CRITERIA		REF	I	R
1.	**Using air:**			
(i)	turn off gas at control valve V1		√	√
(ii)	connect calibrator to valve V3		√	√
(iii)	assemble suitable pressure gauge (Drŭck Tester), calibrate and connect to test point		√	√
(iv)	pressurise system to 1.5 times expected OP, using a hand pump		√	√
(v)	carry out initial leakage test with LDF and, if leakage detected, re-fit pipework and repeat test		√	√
(vi)	allow 5 minutes stabilisation; monitor pressure for a min. of 10 minutes during which there should be no appreciable loss		√	√
(vii)	reduce installation pressure gradually to atmospheric pressure		√	√
(viii)	if test is satisfactory, purge system of air and prepare for gas test		√	√
2.	**Using gas:**			
(i)	shut valve V3, if applicable, remove calibrator and replace any blanking plugs		√	√
(ii)	open valve V1, increasing pressure gradually in stages		√	√
(iii)	carry out further tightness tests using LDF		√	√
(iv)	if leakage detected, re-fit pipework and repeat test		√	√
(v)	ensure system integrity cannot be compromised		√	√
(vi)	remove gauge, re-plug testing tee/point		√	√
3.	locate and repair a gas leak		√	√
KNOWLEDGE AND UNDERSTANDING		**REF**	**I**	**R**
1.	reading pressure gauges		√	
2.	locating escapes		√	
3.	dealing with a valve that is letting by		√	

7. Checking and/or setting meter regulators (checking gas pressures)

PERFORMANCE CRITERIA		REF	I	R
1.	zero gauge and connect to meter test point		√	√
2.	re-establish gas supply		√	√
3.	read and record OP		√	√
4.	remove gauge; re-seal points and test for tightness		√	√

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	Fig 1 & 6.1 GIUSP Edition 7	√	√
2.	explain dealing with AR	Fig 1 & 6.2 GIUSP Edition 7	√	√
2a	explain dealing with AR installations/appliances when turning off does not remove the risk	Fig 1 & 6.2.2 GIUSP Edition 7	√	√
3.	explain dealing with situations that do not meet current standards but are not unsafe	Foreword GIUSP	√	√

	Edition 7		
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		√	