Strategic Management Board

ACS.CCP1
SAFETY ASSESSMENT CRITERIA
INITIAL AND RE-ASSESSMENT
NON-DOMESTIC
NATURAL GAS & LPG
COMMISSIONING PLANT AND EQUIPMENT

CCP1 INITIAL & RE-ASSESSMENT

Introduction

Tests the gas safety competence of an operative in the work of commissioning non-domestic plant and equipment.

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

Commissioning all types of non-domestic indirect gas fired heating equipment containing atmospheric burners or forced draught burners.

Does not include tightness testing and purging (see TPCP1A and TPCP1).

Pre-requisites

Initial

COCN1 or
CCN1 + CoDNCO1 or
QCF or S/NVQ alternatives.

Re-assessment

CCP1.

Exclusions

Specialised plant processes installed in any premises classed as a factory; the commissioning of dual fuel appliances and equipment other than for Natural Gas or LPG; or the design, planning or programming of commissioning procedures of non-domestic plant or equipment.

References and normative documents

MIs.

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

- HSL56
- IGE/UP/1 Edition 2.
- IGE/UP/1A Edition 2.
- IGEM/UP/2 Edition 3
- IGE/UP/4 Edition 4.
- IGE/UP/12
- BS 7967-5
- GIUSP

The References (REF) where indicated are only a guide to where the criteria can be resourced and therefore the REF may not be exhaustive.

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

Abbreviations

AC. Assessment Centre
CB. Certification Body
I. Initial
MIs. Manufacturer's/manufacturers' instructions
NRV. Non-return valve
R. Re-assessment
Ref. Reference
SSOV. Safety shut-off valve.

PERFORMANCE CRITERIA	REF	I	R
Inspection period			
1. positively isolate gas supply by disconnection, spading off or by use of manual isolation valve, and isolate electrical supply to plant		✓	✓
2. confirm gas supply up to isolation valve as being of correct type and pressure		✓	✓
3. inspect plant/equipment and controls visually against specification		✓	✓
4. confirm safety checks have been carried out and documented prior to commissioning e.g. gas testing and purging up to isolation valve		✓	✓
5 check flue connections and ventilation visually		✓	✓
6. check all electrical earthing, inc. cross bonding		✓	✓
7. verify position and operation of emergency isolation valves and clearly mark with on and off position		✓	✓
8. positively isolate electrical supply and any hydraulic or pneumatic supplies		✓	✓
9. check operation of plant/equipment will not cause damage to electrical cables etc. (OQ)		✓	✓
10. check sources of leakage/spillage of oil/water/solvents that could create a hazard are not evident (OQ)		✓	✓
11. check ventilation and flueing of plant/equipment is adequate and allow for requirements of other appliances/equipment sharing same ventilation space		✓	✓
12. check testing points and purge points are available on gas train of plant/equipment		✓	✓
13. ensure warning notices, as appropriate to commissioning procedure, are in position		✓	✓
14. ensure tools, test and safety equipment are available, calibrated and ready for use		✓	✓
15 check relevant design criteria and ensure any other appliance/s in area is operated to check effectiveness of flues and ventilation systems have been met		✓	✓
16. ensure associated equipment and controls required for correct operation of plant/equipment are ready for use		✓	✓
17. ensure appropriate safety systems within area are operative		✓	✓
19. Activation			
19a. Faultless dry run is achieved		✓	✓
19b Rectify any faults		✓	✓
Dry run for gas			
1. test pipework between plant/equipment isolation valve and SSOV(s) for tightness, and purge		✓	✓
2. prove manual isolating and SSOV(s) closed and leak tight and any NRV to be operating correctly		✓	✓
3. **set all controls or interlock devices to provisional operating levels, considered safe for commissioning inc.:**			
(i) pressure, flow and position switches		✓	✓
(ii) regulators (governors)		✓	✓
(iii) pressure relief valves		✓	✓
(iv) dampers (where manually adjustable)		✓	✓
(v) flow control systems (inc. fuel/air ratio where manually adjustable)		✓	✓
(vi) process controls and interlocks		✓	✓
4. **check electrical controls/equipment and interlocks for correct operation and sequence, e.g. link out interlocks and use flame simulators. Check where appropriate**:			
(i) combustion space is purged prior to checking ignition source		✓	✓

(ii)	motor drives rotate in correct direction		✓	✓
(iii)	dampers and associated interlocks operate satisfactorily		✓	✓
(iv)	flow control systems and interlocks operate satisfactorily		✓	✓
(v)	remaining interlocks operate satisfactorily		✓	✓
(vi)	valve proving systems operate appropriately, inc. checking system with all valves closed leak tight, a valve open or a deliberate induced leak		✓	✓
(vii)	timing devices are correctly set		✓	✓
(viii)	air purge of combustion space and flue system is carried out for appropriate time and at required rate		✓	✓
(ix)	safe start check functions of flame safe guard system(s) are proved for at least two consecutive operations		✓	✓
(x)	main flame ignition air flow rate is correct		✓	✓
(xi)	ignition source(s) are operational under ignition air flow rate conditions and check air flow rate		✓	✓
(xii)	flame safeguard systems detect presence of a simulated flame e.g. blowlamp		✓	✓
(xiii)	flame safeguard system goes to lockout within time span when simulated flame is removed		✓	✓
(xiv)	sequence of pre-purge, ignition source, start gas and opening of main SSOVs is correct		✓	✓
(xv)	SSOV(s) remain leak tight after operation		✓	✓
(xvi)	cooling medium is supplied as required e.g. UV flame detector heads		✓	✓
(xvii)	shut-down sequence is correct		✓	✓
(xviii)	all interlocks are reinstated prior to live run		✓	✓
Live run for gas (control line has been purged up to SSOVs)				
1.	prevent main gas supply from flowing to main burner		✓	✓
2.	**make start gas supply available, and, in following order:**			
(i)	purge combustion space adequately		✓	✓
(ii)	set fan controls; air dampers; flue dampers; throughput controls to provide ignition		✓	✓
(iii)	ensure establishment of a stable gas flame		✓	✓
(iv)	ensure start gas flame is correct size and in correct position to ignite main gas flame		✓	✓
(v)	check pipework downstream of start gas safety shut off valve is gas tight		✓	✓
(vi)	check signal strength of flame detector is satisfactory		✓	✓
(vii)	apply correct shut-down (lockout) procedure when start gas flame is extinguished		✓	✓
(viii)	check main burner SSOV remain leak tight		✓	✓
(ix)	re-check sequence for both ignition and shut down		✓	✓
(x)	purge combustion chamber prior to attempting ignition		✓	✓
3.	**make main gas supply available and check in following order :**			
(i)	combustion space is adequately purged		✓	✓
(ii)	fan controls; air dampers; flue dampers; throughput controls correctly set to provide ignition		✓	✓
(iii)	start gas flame is established		✓	✓
(iv)	main burner flame correct size and rate is established		✓	✓
(v)	pipework downstream of main gas SSOVs is gas tight		✓	✓
(vi)	signal strength of main flame gas detector is satisfactory		✓	✓
(vii)	correct shutdown (lockout) procedure is applied when main flame is extinguished		✓	✓
(viii)	main gas is re-established as above		✓	✓
(ix)	all appropriate interlocks operate correctly		✓	✓
4.	**Further check: (IGEM/UP/4 5.4.4.4)**			
(i)	gas air ratio controls are set up to MIs		✓	✓
(ii)	gas burner maintains a stable flame picture across all burner rates		✓	✓
(iii)	burner combustion characteristics, using combustion gas analysis equipment to MIs		✓	✓
(iv)				
(v)	any remaining interlocks for correct operation and note level of operation		✓	✓
5.	set up remaining combustion controls e.g. temperature, to MIs		✓	✓
6.	on shut down, re-check all SSOVs for leak tightness		✓	✓
7.	complete commissioning report and all associated documentation		✓	✓
8.	meet requirements for dealing with handover		✓	✓
KNOWLEDGE & UNDERSTANDING		**REF**	**I**	**R**
1.	planning and programming commissioning procedures		✓	
2.	purging non-domestic gas appliances to MIs		✓	

3. documentation prior to commissioning plant		✓	
4. valve proving systems and their operation		✓	
5. operation of mechanical and electrical controls used on plant		✓	
6. sequence control systems		✓	
7. Multi burner systems requirements		✓	✓
7a operational Trials required		✓	✓
8. recording operation and use of temperature measurement equipment		✓	
10 appropriate safety systems within area are operative		✓	
11 mechanical ventilation fans are fitted& how their flow rates will be checked		✓	
12 where flue dilution systems where fitted.		✓	
13 completing commissioning reports		✓	✓