Performance and Qualification Standard

Port State Control Low Flashpoint Fuel Addendum (LFFA)

This Performance and Qualification Standard (PQS) workbook is an addendum to the Port State Control Examiner (PSCE) qualification and is your On the Job Training (OJT) performance checklist for certification to examine the fuel systems on Low Flashpoint Fuel (LFF) powered vessels. This qualification is only for the examination of the arrangement, installation, control and monitoring of machinery, equipment and systems using low-flashpoint fuels. It is your responsibility to document all completed unit training items and keep track of all examinations completed during this process by filling out the Examination Log located in appendix B of this workbook.

This qualification is not restricted to any particular rank or rate. Civilian GS employees are also eligible. **However, only an officer, warrant officer, or civilian employee (GS-11 or above) who holds a PSCO qualification (FFVE, FTVE, FCTE, FPVE, FGCE) may lead the low-flashpoint fuel portions of the vessel examination.**

This PQS workbook cites from the International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code). Personnel must pay close attention to the applicability of the IGF Code if the vessel was constructed before 01 January 2017 as the vessels may be subject to the interim IMO guidelines (IMO Resolution MSC.285(86)).

The current version of this PQS only includes standards to meet the functional requirement for natural gas fuels. Other low-flashpoint fuels will be added as regulations are developed.

PQS VERIFYING OFFICER SIGNATURE VERIFICATION LOG

RATE/ RANK	SIGNATURE/ PRINT NAME	EMPLID	INITIALS	UNIT

REMARKS:

RECORD OF COMPLETION		
Training Prerequisites	**Date**	**Training Coordinator's Signature**
A. Completion of Port State Control Officer (PSCO) competency		
B. Complettion of on-line course: Alternate Fuels - Introduction to Liquefied Natural Gas, Self-Paced E-Learning (100355)		
C. Completion of this PQS Workbook		
D. Successful completion of final assessment under the observation of the Verifying Officer		
E. Successful completion of the final oral qualification board		
Qualification Board Members:		
F. Certification/Designation Letter submitted for approval		
G. Once Certification/Designation Letter is signed, enter competency & certification in TMT		
REMARKS:		

Task Number	Task Description	Date Completed
LFFA-PE01	Research vessel details in the Marine information for Safety and Law Enforcement (MISLE) database	
LFFA-PE02	Conduct safety meeting	
LFFA-CD01	Examine crew training documentation	
LFFA-CD02	Examine LNG as fuel endorsements & risk assessment	
LFFA-CD03	Examine required regulations	
LFFA-LM01	Examine maintenance & repair procedures	
LFFA-LM02	Examine operational procedures & fuel handling manual	
LFFA-LM03	Examine emergency procedures	
LFFA-LM04	Examine bunker procedures	
LFFA-GH01	Examine airlocks	
LFFA-GH02	Examine personnel protection equipment (PPE)	
LFFA-FF01	Examine water spray systems	
LFFA-FF02	Examine fixed dry chemical powder extinguishing system	
LFFA-FF03	Examine fire detection & alarm system	
LFFA-MI01	Examine ventilation	
LFFA-MI02	Examine emergency stops	
LFFA-MI03	Examine ESD Protected Machinery Space	
LFFA-FT01	Examine bunkering station	
LFFA-FT02	Examine bunkering control location	
LFFA-FT03	Examine fuel storage	
LFFA-FT04	Examine fuel tank monitoring	
LFFA-FT05	Examine pressure relief systems for LG fuel tanks	
LFFA-FT06	Examine means of maintaining fuel storage condition	
LFFA-FT07	Examine fuel containment system atmospheric controls	
LFFA-FT08	Examine inert gas system	
LFFA-FT09	Examine fuel piping	
LFFA-FT10	Examine safety functions of gas & fuel supply system	

Task Number	Task Description	Date Completed
LFFA-FT11	Examine gas detection system	
LFFA-ES01	Examine hazardous areas	
LFFA-ES02	Examine low - low liquid alarm & shutdown	
LFFA-ED01	Examine drills & exercises	
LFFA-FU01	Complete MISLE Activity	

Low Flashpoint Fuel Addendum PQS

DATE	LOCATION	VESSEL NAME	VESSEL TYPE	EXAM TYPE	LEAD EXAMINER

Task: **LFFA-PE01 Research vessel details in the Marine information for Safety and Law Enforcement (MISLE) database**

Condition: *During preparation for examination*

Standard: *In accordance with current policies, procedures and processes*

References:
1. International Convention for the Safety of Life at Sea (SOLAS) 1974, as amended
2. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016
3. IMO Resolution MSC.285(86) Interim Guidelines on Safety for Natural Gas-Fueled Engine Installations in Ships
4. COMDTINST M16000.6 Marine Safety Manual Volume I Administration & Management

Steps		References	Initials
PE01.1	Determine foreign authority, jurisdiction & applicable references	SOLAS 20 II-1/56 & 57 IGF Code IMO Res MSC.285(86)	
PE01.2	Review special notes pertaining to alternative design arrangements	SOLAS 20 II-1/55 IGF Code 2.3 MSM I/12.G.5	
PE01.3	Review special notes pertaining to system configuration	IGF Code 5.4.1 IGF Code 9.6 IGF Code 9.7	
PE01.4	Review special notes pertaining to independent tanks	IGF Code 2.2.23 IGF Code 6.4.15.1 & .2 IGF Code 6.4.15.3	
PE01.5	Review special notes pertaining to membrane tanks	IGF Code 2.2.31 IGF Code 6.4.15.4	
PE01.6	Review special notes pertaining to secondary barrier	IGF Code 2.2.37 IGF Code 6.4.3 IGF Code 6.4.4.4	

Verifying Officer Guidance: *Trainee should know that vessels constructed prior to 01 January 2017 may be subject to the Interim Guidelines on Safety for Natural Gas-Fueled Engine Installations in Ships (IMO Resolution MSC.285(86)), adopted on 01 June 2009.*

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-PE02 Conduct safety meeting**

Condition: *During preparation for examination*

Standard: *In accordance with current policies, procedures and processes*

References:
1. COMDTINST M16000.6 Marine Safety Manual Volume I Administration & Management
2. COMDTINST M16000.7B Marine Safety Manual Volume II Material Inspection Ch-2
3. International Chamber of Shipping Tanker Safety Guide Liquefied Gas

Steps		References	Initials
PE02.1	Verify team is outfitted with appropriate PPE	MSM I/10.D.5.a MSM I/8.A.3	
PE02.2	Verify team is outfitted with atmospheric monitors	MSM I/10.D.5.b	
PE02.3	Ensure team is aware of safety hazards associated with fuels	MSM I/10.C.1.a Tanker Safety Guide	
PE02.4	Determine if exam scope will require a Marine Chemist certification for space entry	29 CFR 1915, Part B MSM II/D.6.C.1.f	
PE02.5	Verify Marine Chemist has been scheduled for the exam (when applicable)	MSM I/10 App. A	

Verifying Officer Guidance: *PI02.1: i.e., long sleeve coveralls, gloves, safety toe shoes, hard hat, EEBD, etc. PI02.2: i.e., multi gas meters.*

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-CD01 Examine crew training documentation**

Condition: *While validating certificates and documents*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References:
1. International Convention on Standards of Training, Certification & Watchkeeping (STCW) 1978, as amended
2. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016
3. International Electrotechnical Commission (IEC) 60092-502: 1999 Electrical Installations in Ships Part 502: Tankers - Special Features
4. International Electrotechnical Commission (IEC) 60079: 2007 Explosive Atmospheres

Steps		References	Initials
CD01.1	Review basic training	IGF Code 19.2 STCW 10 V/3.4, 11 & 12	
CD01.2	Review advanced training	IGF Code 19.2 STCW 10 V/3.7, 11 & 12	
CD01.3	Review training for responsible personnel & personnel conducting inpection and maintenance on electrical equipment in hazardous areas	IGF Code 14.3.3, IEC 60092-502 Clause 9 IGF Code 18.3.3 IEC 60079-17	

Verifying Officer Guidance: *Trainees should be aware Reg V/3 of STCW Training Requirements for "interim guidelines does not specifically apply to ships so crewmembers are not required to hold a Certificate of Proficiency (CoP) Seek clarification of training requirements by the flag state.*
CD01.3: there may be other standards accepted by the Adminstration or IMO.

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-CD02 Examine LNG as fuel endorsements & risk assessment**

Condition: *While validating certificates and documents*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References:
1. International Convention for the Safety of Life at Sea (SOLAS) 1974, as amended
2. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
CD02.1	Verify endorsement on Passenger Ship Safety Certificate	SOLAS 20 Appendix 1/12(a)(ll)	
CD02.2	Verify endorsement on Cargo Ship Safety Construction Certificate	SOLAS 20 Appendix 1/12(a)(vi)	

Verifying Officer Guidance: *Details of risk and the means used to mitigate it shall be documented to the satisfaction of the Administration and may be required to be viewed during an expanded exam. An assessment required by 4.2.1 only needs to done where specified in section 4.2.2.*

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-CD03 Examine required regulations**

Condition: *While validating certificates and documents*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
CD03.1	Verify presence of IGF Code	IGF Code 18.2.1	
CD03.2	Verify presence of administration regulations incorporating IGF Code	IGF Code 18.2.1	

Verifying Officer Guidance: "Interim guidelines" for ships applicable to those guidelines.

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-LM01 Examine maintenance & repair procedures**

Condition: *While validating logs and manuals*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References:
1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016
2. International Electrotechnical Commission (IEC) 60079: 2007 Explosive Atmospheres

Steps		References	Initials
LM01.1	Verify presence	IGF Code 18.2.2	
LM01.2	Verify maintenance and repair procedures to include consideration of tank location and adjacent space	IGF Code 18.3.1 IGF Code Chapter 5	
LM01.3	Verify in-service survey, maintenance and testing on fuel containment system per Administration approved plans	IGF Code 18.3.2 IGF Code 6.4.1.8	
LM01.4	Verify inspection/maintenance of electrical equipment in hazardous locations	IGF Code 18.3.3 IEC 60079 parts 17 & 19	

Verifying Officer Guidance: *Trainee should verify the ship is being maintained in accordance with the plan. The plan identifies aspects to be examined or validated during surveys throughout the containment systems life and any necessary in-service survey, maintenance and testing.*

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-LM02 Examine operational procedures & fuel handling manual**

Condition: *While validating logs and manuals*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
LM02.1	Verify presence	IGF Code 18.2.3	
LM02.2	Verify contents	IGF Code 18.4.2.1 IGF Code 18.6.2 IGF Code 6.3.12	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-LM03 Examine emergency procedures**

Condition: *While validating logs and manuals*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
LM03.1	Verify presence	IGF Code 18.2.4	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-LM04 Examine bunker procedures**

Condition: *While validating logs and manuals*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
LM04.1	Verify presence	IGF Code 18.4.1.1 & .2	
LM04.2	Verify completion of safety checklist	IGF Code 18.4.1.1.3 IGF Code 18.4.3	
LM04.3	Verify PICs have signed copies of Delivery Notes	IGF Code 18.4.1.2 IGF Code 18 Annex 1	
LM04.4	Verify storage tank fill limit	IGF Code 6.8	
LM04.5	Verify portable tanks (if used) be in procedures	IGF Code 18.4.6.3	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-GH01 Examine airlocks**

Condition: *During general health and safety examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
GH01.1	Verify presence	IGF Code 5.11.1, .2 & .4	
GH01.2	Verify door self closing and no holding back	IGF Code 5.12.1	
GH01.3	Verify ventilation overpressure	IGF Code 5.12.2	
GH01.4	Verify free & easy passage	IGF Code 5.12.4	
GH01.5	Verify audible & visual alarms	IGF Code 5.12.5 & .6 IGF Code 13.3.9 & .10	
GH01.6	Verify essential equipment	IGF Code 5.12.7 IGF Code 14.3.9	
GH01.7	Verify presence of gas detection	IGF Code 15.8.1.7	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-GH02 Examine personnel protection equipment (PPE)**

Condition: *During general health and safety examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
GH02.1	Verify specific fuel properties and special equipment needed for the safe handling of the particular fuel within fuel handling manual.	IGF Code 18.4.2.1.6	
GH02.2	Verify appropriate PPE per vessel's fuel handling manual (only required during transfer operation).	IGF Code 18.4.6.2	

Verifying Officer Guidance: *PPE may include gloves, full face shield, protective footwear, fit for purpose clothing, hard hats, etc. PPE for cryogenic LFFs should be appropriate for cryogenic use. The PPE required for bunkering operations is not required to be stored onboard.*

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FF01 Examine water spray systems**

Condition: *During firefighting equipment examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References:
1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016
2. IMO Resolution MSC.285(86) Interim Guidelines on Safety for Natural Gas-Fueled Engine Installations in Ships

Steps		References	Initials
FF01.1	Verify installation	IGF Code 11.5.1 & 2 IGF Code 11.4.1	
FF01.2	Witness operational test of system	IGF Code 11.5.3 IGF Code 11.5.5	
FF01.3	Verify capacity of fire main fire pump if used to supply the system to operate simultaneously if water spray system is part of the fire main	IGF Code 11.5.3 IGF Code 11.5.5 IGF Code 11.4.1	
FF01.4	Verify stop valves are properly fitted in main supply line	IGF Code 11.5.4	
FF01.5	Verify fire main connection	IGF Code 11.5.6	
FF01.6	Verify remote operation of pumps and valves	IGF Code 11.5.7	
FF01.7	Verify nozzle(s) type	IGF Code 11.5.8	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FF02 Examine fixed dry chemical powder extinguishing system**

Condition: *During firefighting equipment examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References:
1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016
2. IMO MSC.1/Circ. 1432 Revised Guidelines for the Maintenance and Inspection of Fire Protection Systems & Appliances

Steps		References	Initials
FF02.1	Verify installation	IGF Code 11.6.1	
FF02.2	Verify servicing	IMO MSC.1/Circ. 1432	
FF02.3	Verify capacity	IGF Code 11.6.1	
FF02.4	Verify presence of manual release	IGF Code 11.6.1	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FF03 Examine fire detection & alarm system**

Condition: *During firefighting equipment examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
FF03.1	Verify fuel system fire detection & alarm	IGF Code 11.7.1	
FF03.2	Verify machinery space fire detection & alarm	IGF Code 15.9	
FF03.3	Witness operational test of fire detection & alarm systems	IGF Code 11.7 IGF Code 15.9	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-MI01 Examine ventilation**

Condition: *During machinery equipment examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
MI01.1	Verify location of inlets/outlets	IGF Code 13.3.5 & 6 IGF Code 6.7.2.8	
MI01.2	Verify operation of loss ventilation capacity alarm	IGF Code 15.10.1	
MI01.3	Verify safety system activation upon loss of ventilation	IGF Code 15.10.2	

Verifying Officer Guidance: *Trainee should refer to IGF Code Regulation 15, Table 1 for quick reference regarding ventilation alarms & monitoring.*

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-MI02 Examine emergency stops**

Condition: *During machinery equipment examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
MI02.1	Verify manual remote emergency stop locations	IGF Code 15.11.4	
MI02.2	Verify manual local emergency stop for gas compressor	IGF Code 15.11.4	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-MI03 Examine ESD Protected Machinery Space**

Condition: *During machinery equipment examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
MI03.1	Verify presence of redundant gas detection systems for ESD protected machinery spaces	IGF Code 15.8.2	
MI03.2	Verify operation of gas detection shutdowns and electrical equipment disconnects	IGF Code 5.6.3.3 IGF Code 12.3.3.2	
MI03.3	Verify arrangement of ventilation system	IGF Code 5.6.7 IGF Code 13.5	
MI03.4	Verify electrical equipment certification	IGF Code 12.3.3	

Verifying Officer Guidance: Note: there is no requirement for the procedures to stand alone. Therefore, you may find them combined with other procedures or manuals such as SOLAS emergency procedures, or included with the fuel handling manual.

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FT01 Examine bunkering station**

Condition: *During fuel transfer system examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
FT01.1	Verify location of natural ventilation	IGF Code 8.3.1.1	
FT01.2	Verify piping arrangement	IGF Code 8.3.1.2	
FT01.3	Verify presence and conditions of drip trays	IGF Code 8.3.1.3 IGF Code 5.10	
FT01.4	Verify pressure relief/liquid removal capabilities	IGF Code 8.3.1.4 IGF Code 8.5.5	
FT01.5	Verify deck/hull shielding	IGF Code 8.3.1.5 & .6	
FT01.6	Verify presence of manual & remote shutdown valve(s) in series or combined manually operated and remote valve(s)	IGF Code 8.5.3	
FT01.7	Verify manifold connections	IGF Code 8.4.1	
FT01.8	Verify presence of fuel schematic/piping & instrumentation diagram (P&ID)	IGF Code 18.4.2.2	
FT01.9	Verify presence and marking on manifold pressure indicator	IGF Code 15.4.4 & .7	
FT01.10	Verify presence ship-shore link (SSL)	IGF Code 8.5.7	
FT01.11	Verify extinguisher at bunkering station	IGF Code 11.6.2	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FT02 Examine bunkering control location**

Condition: *During fuel transfer system examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
FT02.1	Verify location and operation of monitoring equipment	IGF Code 15.5.1	
FT02.2	Verify presence of tank temperature gauge(s)	IGF Code 15.5.1 IGF Code 15.4.11	
FT02.3	Verify presence of water spray system pump & valve control(s)	IGF Code 15.5.1 IGF Code 11.5.7	
FT02.4	Verify presence of manually and automatic remote shutdown valve(s) in series or combined manually operated and remote valve(s)	IGF Code 15.5.1 IGF Code 8.5.3	
FT02.5	Verify operation of bunkering line ventilation failure audible and visual alarms	IGF Code 15.5.2	
FT02.6	Verify presence of gas detection audible and visual alarms	IGF Code 15.5.3	
FT02.7	Verify presence of fuel schematic/piping & instrumentation diagram (P&ID)	IGF Code 18.4.2.2	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FT03 Examine fuel storage**

Condition: *During fuel transfer system examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
FT03.1	Verify Maximum Allowable Relief Valve Setting (MARVS)	IGF Code 6.3.1 IGF Code 6.6.2	
FT03.2	Verify Maximum Allowable Working Pressure (MAWP)	IGF Code 6.3.2 IGF Code 15.4.4	
FT03.3	Verify condition of gas tight seal on tank connection space (if accessible)	IGF Code 6.3.4	
FT03.4	Verify pipe connections	IGF Code 6.3.5 IGF Code 6.3.9	
FT03.5	Verify presence and condition of drip trays	IGF Code 6.3.10	
FT03.6	Verify means for emptying tanks	IGF Code 6.3.11	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FT04 Examine fuel tank monitoring**

Condition: *During fuel transfer system examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
FT04.1	Verify liquid level gauge(s) arrangement	IGF Code 15.4.1	
FT04.2	Verify high liquid level alarm operation	IGF Code 15.4.2.1, .3 & .4	
FT04.3	Verify operation of automatic overfill prevention shutoff(s)	IGF Code 15.4.2.2, .3 & .4	
FT04.4	Verify presence of direct vapour space reading gauge	IGF Code 15.4.3 & .4	
FT04.5	Verify operation of high & low-pressure alarms	IGF Code 15.4.5	
FT04.6	Verify presence of fuel pump discharge pressure indicator	IGF Code 15.4.6, .8 & .9	
FT04.7	Verify operation of low liquid shutdown & alarm	IGF Code 15.4.10	
FT04.8	Verify temperature measurement devices	IGF Code 15.4.11	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FT05 Examine pressure relief systems for LG fuel tanks**

Condition: *During fuel transfer system examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
FT05.1	Verify presence of pressure relief device	IGF Code 6.7.2.1	
FT05.2	Verify minimum number of pressure relief valves (PRVs)	IGF Code 6.7.2.2, .5 & .13	
FT05.3	Verify interbarrier spaces are fitted with a pressure relief valve	IGF Code 6.7.2.3	
FT05.4	Verify PRV settings	IGF Code 6.7.2.4	
FT05.5	Verify means of emergency isolation	IGF Code 6.7.2.6	
FT05.6	Verify connection to venting system	IGF Code 6.7.2.7	
FT05.7	Verify location of PRV vent outlets	IGF Code 6.7.2, .8 & .9	
FT05.8	Verify means to drain liquid	IGF Code 6.7.2.10	
FT05.9	Verify vent screens	IGF Code 6.7.2.11	

Verifying Officer Guidance: *Trainees shall be familiar with IACS Unified Interpretation GC9 entitled Guidance for sizing pressure relief systems for interbarrier spaces, 1988.*

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FT06 Examine means of maintaining fuel storage condition**

Condition: *During fuel transfer system examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
FT06.1	Verify tank pressure & temperature control	IGF Code 6.9.1.1 & . 2	
FT06.2	Verify refrigerant compatibility	IGF Code 6.9.5.1	
FT06.3	Verify system availability	IGF Code 6.9.6.1	
FT06.4	Verify standby heat exchanger(s)	IGF Code 6.9.6.2	
FT06.5	Verify thermal oxidation system	IGF Code 6.9.4.1	

Verifying Officer Guidance: *Trainees Guidance: Examiners shall be made aware of all four methods available to control of tank pressure and temperature within 6.9.1.1. The USCG has not seen a wide use of some methods listed within to include re-liquefaction systems on-board.*

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FT07 Examine fuel containment system atmospheric controls**

Condition: *During fuel transfer system examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
FT07.1	Verify gas sampling points	IGF Code 6.10.3	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FT08 Examine inert gas system**

Condition: *During fuel transfer system examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
FT08.1	Verify continuous-reading oxygen content meter	IGF Code 6.14.1	
FT08.2	Verify set point of oxygen content by volume alarm	IGF Code 6.14.1	
FT08.3	Verify pressure controls & monitoring arrangements	IGF Code 6.14.2	
FT08.4	Verify nitrogen compartment ventilation	IGF Code 6.14.3	
FT08.5	Verify low oxygen in compartment alarm; if system is located outside the engine room	IGF Code 6.14.3	
FT08.6	Verify installation of backflow prevention	IGF Code 6.13	

Verifying Officer Guidance: *The IGF Code does not reference the FSS Code for inert gas systems.*

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FT09 Examine fuel piping**

Condition: *During fuel transfer system examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References:
1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016
2. ISO 14726:2008 Ships & Marine Technology - Identification Colours for the Content of Piping Systems

Steps		References	Initials
FT09.1	Verify markings	IGF Code 7.3.1.1 ISO 14726	
FT09.2	Verify bonding	IGF Code 7.3.1.2	
FT09.3	Verify relief valves	IGF Code 7.3.1.3	
FT09.4	Verify insulation	IGF Code 7.3.1.4	
FT09.5	Verify installation	IGF Code 9.2	
FT09.6	Verify fire protection requirements for piping going through RO-RO spaces	IGF Code 11.3.5	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FT10 Examine safety functions of gas & fuel supply system**

Condition: *During fuel transfer system examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
FT10.1	Verify location and operation of fuel storage valves	IGF Code 9.4.1	
FT10.2	Verify operation of master gas valve	IGF Code 9.4.2, .3 & .7	
FT10.3	Verify double block and bleed valve arrangement and operation	IGF Code 9.4.4, .5 & .9	
FT10.4	Verify presence of manual shutdown valve for each engine	IGF Code 9.4.8	
FT10.5	Verify presence of rupture detection system and location of shutoff valve	IGF Code 9.4.10	
FT10.6	Verify secondary piping enclosure outside machinery space	IGF Code 9.5	
FT10.7	Verify secondary piping enclosure in gas-safe machinery space	IGF Code 9.6	
FT10.8	Verify automatic shutdown signage	IGF Code 15.11.1	
FT10.9	Verify fuel supply shutdown signage	IGF Code 15.11.2	
FT10.10	Verify heavy lifting signage	IGF Code 15.11.3	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FT11 Examine gas detection system**

Condition: *During fuel transfer system examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
FT11.1	Verify gas detector installation(s)	IGF Code 15.8.1, .3 & .8	
FT11.2	Verify equipment meets recognized standard	IGF Code 15.8.5	
FT11.3	Verify alarm set points	IGF Code 15.8.6, .7 & .8	
FT11.4	Witness operational test of equipment	IGF Code 15.8.5 & .9	

Verifying Officer Guidance: *The IGF code notes the recognized standard as IEC 6079-29-1 - Explosive atmospheres - Gas detectors - Performance requirements of detectors for flammable detectors. This reference requires a calibration certificate and proof of gas detector maintenance.*

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-ES01 Examine hazardous areas**

Condition: *During electrical systems examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
ES01.1	Verify hazardous area classification(s)	IGF Code 12.3 & .5	
ES01.2	Verify condition and types of electrical equipment installed	IGF Code 12.3 IGF Code 14.3.3	

Verifying Officer Guidance: *Note IEC 60092-502:1999 Electrical installations in ships - Part 502: Tankers & IEC 60079-10-1:2008 Classification of areas - Explosive gas atmospheres as additional references. Refer to the electrical installation asset register (dossier register).*

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-ES02 Examine low - low liquid alarm & shutdown**

Condition: *During electrical systems examination*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
ES02.1	Verify operation of motor shutdown	IGF Code 14.3.7	
ES02.2	Verify operation of alarms and indicator(s)	IGF Code 14.3.7	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-ED01 Examine drills & exercises**

Condition: *While validating logs and manuals*

Standard: *In compliance with applicable policies, laws, regulations and standards*

References: 1. International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 2016

Steps		References	Initials
ED01.2	Verify gas related ship specific drills & exercises are conducted	IGF Code 17	

Verifying Officer Guidance:

Inspector's Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer's Signature:	**Date:**

Task: **LFFA-FU01 Complete MISLE Activity**

Condition: *Upon completion of the examination*

Standard: *In accordance with current policies, procedures and processes*

References: 1. Marine Information for Safety & Law Enforcement (MISLE 5.0) Vessels User Guide

Steps		References	Initials
FU01.1	Ensure Propulsion System Type indicates Dual Fuel (Diesel & Liquefied Gas)	MISLE Guide	
FU01.2	Enter alternative design into Special Notes	MISLE Guide	
FU01.3	Enter system configuration into Special Notes	MISLE Guide	
FU01.4	Enter tank type into Special Notes	MISLE Guide	

Verifying Officer Guidance: *Tank type includes membrane or Independent A, B, or C.*

FU01.4: Example for Special Note entry:

*This vessel is designed to: 2016 IGF Code/Interim guidelines
*Alternate Design: Yes/No See Document “IGF Alternate Design”
*System Configuration: See Document “IGF System Configuration”
*Tank Type: Type A/B/C or Membrane. Secondary Barrier: Yes/No.

Inspector’s Name: (Last, First, Initial)	**EMPLID:**
Verifying Officer’s Signature:	**Date:**

Reset

Performance Qualification Standard and Job Aid Change Recommendation Form

From:_____ Date:_____

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Remark(s)/Comment(s):

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