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# U.S. COAST GUARD



## FOREIGN GAS CARRIER EXAMINER (FGCE)

### PORT STATE CONTROL OFFICER PERFORMANCE AND QUALIFICATION STANDARD



Marine Inspection and Investigation School  
Training Center Yorktown

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## Foreign Gas Carrier Examiner Performance and Qualification Standard

### Competency Code: FGCE

#### References:

- (a) U.S. Coast Guard Sector Organization Manual, COMDTINST M5401.6 (series)
- (b) Marine Safety Manual, COMDTINST M16000 (series)
- (c) Performance, Training & Education Manual, COMDTINST M1500.10C
- (d) Safety and Environmental Health Manual, COMDTINST 5100.47

This Performance and Qualification Standard (PQS) workbook is your On the Job Training (OJT) performance checklist for certification as a Foreign Gas Carrier Examiner (FGCE). 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 Port State Control (PSC) Examination Log located in appendix C of this workbook.

The FGCE competency is one of five “specific cargo/vessel related” Port State Control Officer (PSCO) competencies. This qualification is not restricted to any particular rank or rate. Civilian GS employees are also eligible.

The following is a brief overview of how this PQS workbook works. On each task card you will find:

1. **Job:** the formal title of the qualification.  
*Example: “Foreign Gas Carrier Examiner”*
2. **Job Accomplishment:** the main deliverable for the qualification.  
*Example: “Certificate of Compliance”*
3. **Major Accomplishment:** the valuable products of a job or specialty which collectively make up the job accomplishment.  
*Example: “Certificates and Documents (CD)”*
4. **Vessel types:** the specific type of vessels within the formal title of the qualification that the task is associated with.  
*Example: “Foreign Liquefied Gas Carrier (LPG)”*
5. **Task:** action to be performed on the job. A unit of behavior which has value for producing major accomplishments/output; has a definite beginning (stimulus); is made up of two or more steps; and results in a measurable output.
6. **Condition:** specifies assistance, aids or constraints the trainee will be given. It states the condition(s)/limit(s) under which the task will be performed.
7. **Standard:** specifications of the levels of accuracy and quality necessary for success, i.e. how well a trainee must carry out the desired performance to complete the task.
8. **Steps:** the sequence of actions required to complete the task.

Those individuals that are assigned to Sectors/MSUs or MSDs that conduct examinations on liquefied petroleum gas (LPG) carriers that are authorized to carry flammable and/or chemical gases must complete all of the tasks that are identified by the vessel types *“Foreign Liquefied Gas Carrier (All)”* and *“Foreign Liquefied Gas Carrier (LPG)”*. Those individuals that are assigned to Sectors/MSUs or MSDs that conduct examinations on liquefied natural gas (LNG) carriers must complete all of the tasks that are identified by the vessel type *“Foreign Liquefied Gas Carrier (All)”* and *“Foreign Liquefied Gas Carrier (LNG)”*.

All tasks and steps must be validated by a designated Verifying Officer (VO). The VO shall observe the successful performance of each task and document such with signatures in the specific task card. VOs must enter their title, name and initials in the Record of Verifying Officer’s section before making entries in your PQS workbook.

Ideally, all steps and tasks within the PQS workbook shall be required to be completed prior to obtaining the FGCE competency. With the exception of the training prerequisites listed on page (I), the Sector Commander or designee may defer PQS items as authorized by references (a) and (d). The deferment of tasks should only be done when all reasonable attempts have been exhausted that would allow the apprentice the opportunity to demonstrate proficiency with a particular task. If a task is deferred, the reason for deferment must be clearly articulated in both the PQS workbook and the certification letter for record keeping and accountability.

The Sector Commander or designee may also defer the following prerequisites listed on page (I) with conditions:

1. **A.4:** The Gas Carrier Inspector Course may be deferred for up to 12 months contingent on the member successfully completing an exam administered by the LGCNCOE.
2. **C.2:** The completion of one Port State Control Officer competency or one Domestic Marine Inspector competency may be waived by the Sector Commander if the Sector’s Prevention leadership (CID and/or MITO) recognize that the Apprentice Marine Inspector has the maturity, capacity and initiative to successfully pursue an FGCE qualification.

Prior to any task being deferred for an individual seeking certification as a Foreign Gas Carrier Examiner (FGCE), that individual’s Chief, Inspections Division (CID), Port State Control Branch Chief or Marine Inspection Training Officer (MITO) shall notify the Liquefied Gas Carrier National Center of Expertise (LGCNCOE). The LGCNCOE will work with the individual and his/her unit to identify an opportunity for the individual to demonstrate proficiency with the task. If an opportunity cannot be identified, the LGCNCOE shall notify the individual’s unit via e-mail. A copy of the e-mail from the LGCNCOE shall be attached to the individual’s FGCE PQS workbook until proficiency with the task has been demonstrated.

A Certification Board should only be completed after all tasks and steps are signed by a VO. Upon satisfactory completion of the board, a Letter of Certification/Designation will be issued and the **Unit Training Coordinator should enter the certification in the Training Management Tool (TMT).**

**Appendices:**

- A. List of Additional References
- B. Glossary
- C. Port State Control Examination Log

**Enclosure:**

- 1. Liquefied Gas Industry Indoctrination Guide



## Foreign Gas Carrier Examiner PQS

<b>RECORD OF COMPLETION</b>		
<b>Training Prerequisites</b>	<b>Date</b>	<b>Training Coordinator's Signature</b>
A. Assign FGCE competency in TMT		
B. Completion of the following resident courses:		
1. Port State Control Officer Course (501864); <b>or</b>		
2. MST A-School (only if completed after January 2010); <b>or</b>		
3. Marine Inspector Course (only if completed before March 2006)		
4. Gas Carrier Inspector Course (351263)		
C. Liquefied Gas Industry Indoctrination Guide (meets Industry Specific Orientation Indoctrination requirement)		
D. Completion of:		
1. Port State Control Examiner (PSCE) competency; <b>and</b>		
2. Completion of one Port State Control Officer competency or one Domestic Marine Inspector competency		
E. Completion of this PQS Workbook		
F. Successful completion of final assessment under the observation of the Verifying Officer		
G. Successful completion of the final board by FGCECB		
<b>FGCECB Members Present for Board:</b>		
H. Certification/Designation Letter submitted for approval		
I. Once Certification/Designation Letter is signed make appropriate entries in TMT		
<b>REMARKS:</b>		

## Foreign Gas Carrier Examiner PQS

Task Number	Task Description	Date Completed
FGCE-PE01	Prepare a Certificate of Compliance for Issuance	
FGCE-PE02	Conduct a safety meeting	
FGCE-CD01	Examine the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk ( <b>LPG Carriers Only</b> )	
FGCE-CD02	Examine the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk (IGC Code)	
FGCE-CD03	Examine the Certificate of Fitness for the Carriage of Liquefied Gases in Bulk (GC Code)	
FGCE-CD04	Examine the Certificate of Fitness for the Carriage of Liquefied Gases in Bulk (EGC Code)	
FGCE-CD05	Verify that the information required to be provided to the master concerning allowable loading limits and maximum loading reference temperatures for each product carried is onboard	
FGCE-CD06	Examine documentation applicable to the changing and setting of cargo tank pressure relief valves	
FGCE CD07	Examine crew training documentation	
FGCE-CD08	Examine the Subchapter "O" endorsement	
FGCE-CD09	Examine Certificate of Inhibition ( <b>LPG Carriers Only</b> )	
FGCE-LM01	Examine the Cargo Record Book ( <b>LPG Carriers Only</b> )	
FGCE-LM02	Examine the Procedures & Arrangement (P&A) Manual ( <b>LPG Carriers Only</b> )	
FGCE-LM03	Examine the Shipboard Marine Pollution Emergency Plan (SMPEP) for Noxious Liquid Substances ( <b>LPG Carriers Only</b> )	
FGCE-LM04	Verify that required cargo information is onboard (Cargo Operations Manual)	
FGCE-LM05	Verify that the ship has a loading and stability information booklet	
FGCE-IE01	Examine fixed gas detection system	
FGCE-IE02	Examine portable gas detection equipment	
FGCE-IE03	Examine temperature indicating devices	
FGCE-IE04	Examine pressure monitoring devices	
FGCE-IE05	Examine overflow control system	
FGCE-GH01	Examine decontamination showers ( <b>LPG Carriers Only</b> )	
FGCE-GH02	Examine eye wash stations ( <b>LPG Carriers Only</b> )	
FGCE-GH03	Examine respiratory and eye protection [provided for emergency escape purposes] ( <b>LPG Carriers Only</b> )	
FGCE-GH04	Examine personnel safety equipment	

## Foreign Gas Carrier Examiner PQS

Task Number	Task Description	Date Completed
FGCE-GH05	Examine First Aid equipment	
FGCE-GH06	Examine air locks	
FGCE-CS01	Examine the Emergency Shutdown (ESD) system	
FGCE-CS02	Examine cargo tank pressure relief valves	
FGCE-CS03	Examine cargo piping	
FGCE-CS04	Examine cargo system valves	
FGCE-CS05	Examine cargo machinery room equipment	
FGCE-CE01	Examine the Inert Gas System (IGS)	
FGCE-CE02	Examine the Nitrogen Gas Generating System	
FGCE-CE03	Examine Inert Gas/Nitrogen storage tanks	
FGCE-LS01	Examine lifeboats	
FGCE-ES01	Examine electrical installations in the cargo machinery room	
FGCE-ES02	Examine electrical installations in gas dangerous zones on open decks and in spaces other than cargo machinery rooms	
FGCE-CV01	Examine cargo machinery motor room ventilation system	
FGCE-CV02	Examine cargo machinery room ventilation system	
FGCE-GF01	Examine the master gas valve <b>(LNG Carriers Only)</b>	
FGCE-GF02	Examine ventilation within the ventilation hood or casing <b>(LNG Carriers Only)</b>	
FGCE-GF03	Examine the gas detection system used for the protection of the cargo fuel system <b>(LNG Carriers Only)</b>	
FGCE-GF04	Examine the gas utilization unit(s) <b>(LNG Carriers Only)</b>	
FGCE-GF05	Examine gas fuel piping (double wall piping system) <b>(LNG Carriers Only)</b>	
FGCE-GF06	Examine gas fuel piping (ventilated pipe or duct system) <b>(LNG Carriers Only)</b>	
FGCE-GF07	Examine the Gas Combustion Unit (GCU) <b>(LNG Carriers Only)</b>	
FGCE-FF01	Examine fire water main equipment	
FGCE-FF02	Examine the deck water spray system	
FGCE-FF03	Examine chemical powder fire-extinguishing system	
FGCE-FF04	Examine cargo machinery room fixed fire-extinguishing system	

## Foreign Gas Carrier Examiner PQS

<b>Task Number</b>	<b>Task Description</b>	<b>Date Completed</b>
FGCE-FF05	Examine cargo motor machinery room fixed fire-extinguishing system	
FGCE-FF06	Examine firemen's outfits	
FGCE-FU01	Complete MISLE Activity	

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Pre-Exam (PE)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-PE01 Prepare a Certificate of Compliance for issuance

**Condition:** During preparation for examination

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

**References:**

1. Title 46, Code of Federal Regulations Part 154 Safety Standards for Self-Propelled Vessels Carrying Bulk Liquefied Gases
2. COMDTINST M16000.7B Marine Safety Manual Volume II Material Inspection
3. MPS-PR-SEC-04 Preparing for Inspections and Examinations

Steps		References	Initials
PE01.1	Prepare Certificate of Compliance	MPS-PR-SEC-04	
PE01.2	Attach the most recent Subchapter "O" Endorsement to the certificate	46 CFR 154.1802(a)(1)	
PE01.3	Forward the Certificate of Compliance with Subchapter "O" Endorsement to the OCMI or designated representative for signature	MSM II/D.6.E	

**Verifying Officer Guidance:** 01.2: The most recent SOE can be located in the documents section of vessel's MISLE file.

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Pre-Exam (PE)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-PE02 Conduct a 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
  3. CG-543 191819Z MAR 10 Safety Alert - Cargo Compressor Room Entries During Port State Control Exams & Law Enforcement Boardings of Liquefied Petroleum Gas (LPG) Carriers
  4. International Chamber of Shipping Tanker Safety Guide Liquefied Gas

Steps		References	Initials
PE02.1	Verify examination team is outfitted with the appropriate basic PPE	MSM I/10.D.5.A MSM I/ 8.A.3	
PE02.2	Verify examination team is outfitted with operational Atmospheric Monitors	MSM I/10.D.5.B	
PE02.3	Verify examination team is outfitted with an appropriate Emergency Escape Breathing Device (EEBD)	MSM I/10.D.5.D	
PE02.4	Determine if a marine chemist is required to certify the cargo machinery room as gas safe	MSM II/D.6.C.1.f CG-543 Safety Alert	
PE02.5	Ensure examination team is aware of the safety hazards associated with the cargo(s) being carried	MSM I/10.C.1.A.1.A Tanker Safety Guide	

**Verifying Officer Guidance:** 02.1: ie, long sleeve coveralls, gloves, safety toe shoes, safety hat, etc. 02.2: ie, multi gas meters. PE02.4: If a Marine Chemist Certificate is required to enter a cargo machinery room, follow your unit's local procedures.

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Certificates and Documents (CD)****Foreign Liquefied Gas Carrier (LPG)**

**Task:** FGCE-CD01 Examine the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk

**Condition:** While validating certificates and documents

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

**References:** 1. International Convention for the Prevention of Pollution from Ships (MARPOL) 1973, as modified

Steps		References	Initials
CD01.1	Verify certificate is valid	MARPOL II/5.3.2 & 10	
CD01.2	Verify certificate is issued by the administration or a recognized organization	MARPOL II/5.3.2 & 9.2	
CD01.3	Verify NLS cargo being carried is authorized on the certificate	MARPOL II/5.3.2 MARPOL II/Appendix III	
CD01.4	Verify that the intermediate survey has been carried out (when applicable)	MARPOL II/5.3.2 & 8.1.3	
CD01.5	Verify that the annual survey has been carried out (when applicable)	MARPOL II/5.3.2 & 8.1.4	

**Verifying Officer Guidance:** This task applies to vessels authorized to carry Annex II cargoes covered by the IBC Code. These cargoes will be identified by "\*" after their name in the table located within Chapter 19 of the IGC Code. 01.4: The intermediate survey conducted 3 months before/after the certificate's 2nd/3rd anniversary date. 01.5: The annual survey shall be conducted 3 months before/after the certificate's anniversary date.

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Certificates and Documents (CD)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CD02 Examine the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk (IGC Code)

**Condition:** While validating certificates and documents

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

**References:** 1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)

Steps		References	Initials
CD02.1	Verify the certificate references Resolution MSC.5(48) as amended by Resolution MSC.17(58)	IGC 1.5.4.2 IGC Appendix	
CD02.2	Verify the certificate is valid	IGC 1.5.6.1	
CD02.3	Verify that the certificate is issued by the administration or a recognized organization	IGC 1.5.5	
CD02.4	Verify that the cargoes being carried are authorized on the certificate	IGC 18.2.1	
CD02.5	Verify that any alternative arrangements or equivalencies are identified (when applicable)	IGC 1.4, 1.5.4.2 & 2.8.2 IGC Appendix	
CD02.6	Verify that the intermediate survey has been carried out (when applicable)	IGC 1.5.2.1.3	
CD02.7	Verify that the annual survey has been carried out (when applicable)	IGC 1.5.2.1.4	

**Verifying Officer Guidance:** *This task applies to vessels with a keel laid 1 July 86 or later. 02.6: The intermediate survey shall be carried out not more than 6 months before or 6 months after the half way date of the certificate's issue date. 02.7: The annual survey shall be carried out not more than 3 months before or 3 months after the anniversary date of when the certificate was issued.*

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Certificates and Documents (CD)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CD03 Examine the Certificate of Fitness for the Carriage of Liquefied Gases in Bulk (GC Code)

**Condition:** While validating certificates and documents

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

**References:** 1. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
CD03.1	Verify the certificate references Resolution MSC A.328(IX)	GC 1.6.3(a) GC Appendix	
CD03.2	Verify the certificate is valid	GC 1.6.5	
CD03.3	Verify that the certificate is issued by the administration or a recognized organization	GC 1.6.4	
CD03.4	Verify that the cargoes being carried are authorized on the certificate	GC 18.2.1	
CD03.5	Verify that any alternative arrangements or equivalencies are identified, if applicable	GC 1.5, 1.6.3(a) & 2.7.2 GC Appendix	
CD03.6	Verify that the intermediate survey has been carried out, if applicable	GC 1.6.1(c)	
CD03.7	Verify that the annual survey has been carried out, if applicable	GC 1.6.1(d)	

**Verifying Officer Guidance:** *This task applies to vessels with a keel laid 31Dec76 - 1July86. 03.6: The intermediate survey shall be carried out not more than 6 months before or 6 months after the half way date of the certificate's issue date. 03.7: The annual survey shall be carried out not more than 3 months before or 3 months after the anniversary date of when the certificate was issued.*

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Certificates and Documents (CD)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CD04 Examine the Certificate of Fitness for the Carriage of Liquefied Gases in Bulk (Existing Gas Carrier Code)

**Condition:** While validating certificates and documents

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

- References:**
1. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  2. Code for Existing Ships Carrying Liquefied Gases in Bulk (EGC Code)
  3. COMDTINST M16000.7B Marine Safety Manual Volume II Material Inspection

Steps		References	Initials
CD04.1	Verify the certificate references IMO Resolution A.329(IX)	GC 1.6.3(a) GC Appendix	
CD04.2	Verify the certificate is currently valid	GC 1.6.5	
CD04.3	Verify that the certificate is issued by the administration or a recognized organization	GC 1.6.4	
CD04.4	Verify that the cargoes being carried are authorized on the certificate	GC 18.2.1	
CD04.5	Verify that any alternative arrangements or equivalencies are identified (when applicable)	GC 1.5, 1.6.3(a) & 2.7.2 GC Appendix	
CD04.6	Verify that the intermediate survey has been carried out (when applicable)	GC 1.6.1(c)	
CD04.7	Verify that the annual survey has been carried out (when applicable)	GC 1.6.1(d)	
CD04.8	Identify the aspects of the vessel that do not comply with IMO Resolution A.328(IX)(Gas Carrier Code)	EGC 1.2.3(b) MSM II/F.4.C	

**Verifying Officer Guidance:** *This task applies to vessels with a keel laid before 31Dec76. 04.6: The intermediate survey shall be carried out not more than 6 months before or 6 months after the half way date of the certificate's issue date. 04.7: The annual survey shall be carried out not more than 3 months before or 3 months after the anniversary date of when the certificate was issued. 04.8: Gas Carriers built prior to 31Dec1976 are required to comply with the Gas Carrier Code, IMO Resolution A.328(IX) to the extent that they can. When aspects of a particular vessel cannot be brought into compliance with the Gas Carrier Code, those aspects shall be identified on the COF.*

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Certificates and Documents (CD)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CD05 Verify the information required to be provided to the master concerning allowable loading limits and maximum loading reference temperatures for each product carried is onboard

**Condition:** *While validating certificates and documents*

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

**References:**

1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
CD05.1	Verify that the information is approved by the administration	IGC 15.2 GC 15.2	
CD05.2	Verify that information concerning the Maximum Allowable Relief Valve Settings of pressure relief valves is included	IGC 15.2 GC 15.2	

**Verifying Officer Guidance:**

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Certificates and Documents (CD)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CD06 Examine documentation applicable to the changing and setting of cargo tank pressure relief valves

**Condition:** While validating certificates and documents

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. Title 46, Code of Federal Regulations Part 154 Safety Standards for Self-Propelled Vessels Carrying Bulk Liquefied Gases

Steps		References	Initials
CD06.1	Examine documentation from an "administration accepted" competent authority attesting to the proper setting of cargo tank pressure relief valves	IGC 8.2.5 GC 8.2.5	
CD06.2	Verify that procedures for changing cargo tank pressure relief valves are approved by the administration (LPG only)	IGC 8.2.7 GC 8.2.7	
CD06.3	Verify that all changes to cargo tank pressure relief valves are recorded in the ship's log (LPG only)	IGC 8.2.7 GC 8.2.7 46 CFR 154.1846(b)	

**Verifying Officer Guidance:**

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Certificates and Documents (CD)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CD07 Examine crew training documentation

**Condition:** While validating certificates, documents & manuals

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

**References:** 1. International Convention on Standards of Training, Certification & Watchkeeping (STCW) 1978, as amended

Steps		References	Initials
CD07.1	Verify each officer and rated individual with specific duties and responsibilities related to cargo or cargo equipment holds a certificate in basic training for liquefied gas tanker cargo operations	STCW V/1-2.1	
CD07.2	Verify the Master, Chief Engineer, Chief Mate, Second Engineer and any person with immediate responsibility for cargo related operations holds a certificate in advanced training for liquefied gas tanker cargo operations	STCW V/1-2.3	
CD07.3	Verify crew holds certificates of proficiency from the Administration demonstrating compliance with either STCW V/1-2.2 or STCW V/1-2.4	STCW V/1-2.5	

**Verifying Officer Guidance:**

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Certificates and Documents (CD)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CD08 Examine the Subchapter "O" endorsement

**Condition:** *While validating certificates and documents*

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

- References:**
1. Title 46, Code of Federal Regulations Part 154 Safety Standards for Self-Propelled Vessels Carrying Bulk Liquefied Gases
  2. CG-ENG Policy Letter 04-12 Alternate Pressure Relief Valve Settings on Vessels Carrying Liquefied Gases in Bulk in Independent Type B & Type C Tanks
  3. Marine Safety Center (MSC) C1-43 Guidelines for Foreign Liquefied Gas Carrier COC Endorsement

Steps		References	Initials
CD08.1	Verify that the IMO International Gas Code COF referenced matches the International Gas Code COF issued to the vessel	46 CFR 154.1802(1) MSC Guidelines C1-43	
CD08.2	Verify that the cargo containment system(s) onboard the vessel is accurately identified on the SOE	46 CFR 154.1802(1) MSC Guidelines C1-43	
CD08.3	Verify that the safety relief valves (MARVS) are set no higher than the values indicated on the SOE	46 CFR 154.1802(1) MSC Guidelines C1-43 CG-ENG Policy Ltr 04-12	
CD08.4	Verify cargo(s) authorized for carriage are also authorized on the International Gas Code COF	46 CFR 154.1802(1) MSC Guidelines C1-43	
CD08.5	Verify that any special restrictions noted are being complied with	46 CFR 154.1808 MSC Guidelines C1-43	

**Verifying Officer Guidance:**

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Certificates and Documents (CD)****Foreign Liquefied Gas Carrier (LPG)****Task:** FGCE-CD09 Examine Certificate of Inhibition**Condition:** *While validating certificates and documents***Standard:** *In compliance with applicable policies, laws, regulations and standards*

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. Title 46, Code of Federal Regulations Part 154 Safety Standards for Self-Propelled Vessels Carrying Bulk Liquefied Gases

Steps		References	Initials
CD09.1	Verify that the name of Inhibitor is indicated	IGC 17.8.1 GC 17.10 (a) 46 CFR 154.1818(b)(1)	
CD09.2	Verify that the amount of the inhibitor that was added to the cargo(es) is indicated	IGC 17.8.1 GC 17.10 (a) 46 CFR 154.1818(b)(1)	
CD09.3	Verify the date that the inhibitor was added is indicated	IGC 17.8.2 GC 17.10 (b) 46 CFR 154.1818(b)(2)	
CD09.4	Verify that the normal expected duration of the inhibitor's effective lifetime is indicated	IGC 17.8.2 GC 17.10 (b) 46 CFR 154.1818(b)(3)	
CD09.5	If the inhibitor has any temperature limitations that may effect it's effectiveness, verify that those limitations are indicated	IGC 17.8 GC 17.10 (c) 46 CFR 154.1818(b)(4)	
CD09.6	Verify that any actions that are required to be taken when that the length of the voyage exceeds the effective lifetime of the inhibitor are indicated	IGC 17.8 GC 17.10 (d) 46 CFR 154.1818(b)(5)	

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

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Logs and Manuals Examination (LM)****Foreign Liquefied Gas Carrier (LPG)****Task:** FGCE-LM01 Examine the Cargo Record Book**Condition:** *While validating logs and manuals***Standard:** *In compliance with applicable policies, laws, regulations and standards***References:** 1. International Convention for the Prevention of Pollution from Ships (MARPOL) 1973, as modified

Steps		References	Initials
LM01.1	Verify that the Cargo Record Book is properly formatted	MARPOL II/15 MARPOL II/Appendix II	
LM01.2	Verify each entry is signed by the officer in charge of the operation	MARPOL II/15.4	
LM01.3	Verify each page is signed by the master	MARPOL II/15.4	

**Verifying Officer Guidance:** *This task applies to vessels authorized to carry Annex II cargoes covered by the IBC Code. These cargoes will be identified by "\*" after their name in the table located within Chapter 19 of the IGC Code.*

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

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Logs and Manuals Examination (LM)****Foreign Liquefied Gas Carrier (LPG)**

**Task:** FGCE-LM02 Examine the Procedures & Arrangement (P&A) Manual

**Condition:** While validating logs and manuals

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

**References:** 1. International Convention for the Prevention of Pollution from Ships (MARPOL) 1973, as modified

Steps		References	Initials
LM02.1	Verify that the manual is approved by the administration	MARPOL II/14.1	
LM02.2	Verify that the manual is in the standard format	MARPOL II/14.1 MARPOL II/Appendix IV	

**Verifying Officer Guidance:** *This task applies to vessels authorized to carry Annex II cargoes covered by the IBC Code. These cargoes will be identified by "\*" after their name in the table located within Chapter 19 of the IGC Code.*

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)**

**Certificate of Compliance**

**Logs and Manuals Examination (LM)**

**Foreign Liquefied Gas Carrier (LPG)**

**Task:** FGCE-LM03 Examine the Shipboard Marine Pollution Emergency Plan (SMPEP) for Noxious Liquid Substances

**Condition:** While validating logs and manuals

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

**References:** 1. International Convention for the Prevention of Pollution from Ships (MARPOL) 1973, as modified

Steps		References	Initials
LM03.1	Verify that the plan is approved by the administration	MARPOL II/17.1	
LM03.2	Verify that a list of authorities or persons to be contacted in the event of an incident are identified	MARPOL II/17.2.2	

**Verifying Officer Guidance:** This task applies to vessels authorized to carry Annex II cargoes covered by the IBC Code. These cargoes will be identified by "\*" after their name in the table located within Chapter 19 of the IGC Code.



<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Logs and Manuals Examination (LM)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-LM04 Verify that the required cargo information (Cargo Operations Manual) is onboard

**Condition:** While validating logs and manuals

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. Title 46, Code of Federal Regulations Part 154 Safety Standards for Self-Propelled Vessels Carrying Bulk Liquefied Gases

Steps		References	Initials
LM04.1	Verify that a full description of the physical and chemical properties necessary for the safe containment of cargo exists	IGC 18.1.1 GC 18.1(a) 46 CFR 154.1810 (a)(5)	
LM04.2	Verify that information concerning action to be taken in the event of spills or leaks exists	IGC 18.1.2 GC 18.1(b) 46 CFR 154.1810 (a)(3)	
LM04.3	Verify that information concerning counter measures against accidental personal contact exists	IGC 18.1.3 GC 18.1(c) 46 CFR 154.1810 (a)(1)	
LM04.4	Verify that information concerning fire fighting procedures and fire fighting media to be used exists	IGC 18.1.4 GC 18.1(d) 46 CFR 154.1810 (a)(4)	
LM04.5	Verify that procedures for cargo transfer, gas freeing, ballasting, tank cleaning and changing cargoes exists	IGC 18.1.5 GC 18.1(e) 46 CFR 154.1810 (a)(10),(11) & (12)	
LM04.6	Verify that information concerning any special equipment needed for the safe handling of a particular cargo exists	IGC 18.1.6 GC 18.1(f) 46 CFR 154.1810 (a)(16)	
LM04.7	Verify that information concerning the minimum allowable inner hull steel temperatures exists	IGC 18.1.7 GC 18.1(g) 46 CFR 154.1810 (a)(5)	
LM04.8	Verify that information concerning emergency procedures exists	IGC 18.1.8 GC 18.1(h) 46 CFR 154.1810 (a)(15)	

**Verifying Officer Guidance:** Some vessels may be keeping this information in the ship's computer.

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Logs and Manuals Examination (LM)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-LM05 Verify that the ship has a loading and stability information booklet

**Condition:** *While validating logs and manuals*

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. Title 46, Code of Federal Regulations Part 154 Safety Standards for Self-Propelled Vessels Carrying Bulk Liquefied Gases
  4. Title 46, Code of Federal Regulations Part 170 Stability Requirements for All Inspected Vessels

Steps		References	Initials
LM05.1	Verify the booklet contains details of typical service conditions, to include loading, unloading and ballast conditions	IGC 2.2.5 GC 2.2.3 46 CFR 154.1809(b)(1)	
LM05.2	Verify the booklet contains a summary of the ship's survival capabilities	IGC 2.2.5 GC 2.2.3 46 CFR 154.1809(b)(2) & 170.110	

**Verifying Officer Guidance:**

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Instrumentation Examination (IE)****Foreign Liquefied Gas Carrier (All)****Task:** FGCE-IE01 Examine fixed gas detection system**Condition:** During instrumentation exam**Standard:** In compliance with applicable policies, laws, regulations and standards

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. Vessel's Cargo Operations Manual
  4. Vessel's Gas Detection Operator's Manual

Steps		References	Initials
IE01.1	Witness a satisfactory calibration of the fixed gas detection system	IGC 13.6.10 GC 13.6.10 Gas Detection Operator's Manual	
IE01.2	Verify that sampling points are installed in the required spaces	IGC 13.6.7 GC 13.6.7 Cargo Operations Manual	
IE01.3	Verify the location of sampling points relative to authorized cargo types (ie, Top or Bottom of space)	IGC 13.6.2 GC 13.6.2	
IE01.4	Verify the integrity of gas detection sampling pipe system	IGC 13.6.8 GC 13.6.8	

**Verifying Officer Guidance:** 01.1: The calibration of the fixed gas detection system shall be IAW the gas detection system's operating manual. 01.3: Relative density is the ratio of the density of one substance to another. For gasses, the relative density is the ratio of the density of the gas to that of air. For liquefied gas cargoes with a relative density less than 1.0, the gas will rise if a leak occurs. For gases with a relative density of more than 1.0, the gas will fall if a leak occurs. The relative density of the cargoes must be taken into account when locating the gas detection sampling points within a space.

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Instrumentation Examination (IE)****Foreign Liquefied Gas Carrier (All)****Task:** FGCE-IE02 Examine portable gas detection equipment**Condition:** *During instrumentation exam***Standard:** *In compliance with applicable policies, laws, regulations and standards*

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. Portable Gas Detection Operator's Manual

Steps		References	Initials
IE02.1	Witness a satisfactory calibration of the portable gas detection equipment	IGC 13.6.13 GC 13.6.13 Gas Detection Operator's Manual	
IE02.2	Verify that two sets of operational portable gas detection equipment are onboard	IGC 13.6.13 GC 13.6.13	
IE02.3	Verify that the portable gas detection equipment is suitable for the products being carried	IGC 13.6.13 GC 13.6.13	

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

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Instrumentation Examination (IE)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-IE03 Examine temperature indicating devices

**Condition:** *During instrumentation exam*

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
IE03.1	Verify that at least two temperature indicating devices are installed in each cargo tank, one near the top and one at the bottom of the tank	IGC 13.5.1 & 13.5.4 GC 13.5.1 & 13.5.4	
IE03.2	Verify that the temperature indicating devices are marked to show the lowest temperature for which the cargo tank has been approved by the Administration	IGC 13.5.1 & 13.5.4 GC 13.5.1 & 13.5.4	
IE03.3	When cargo is carried at less than -55C, verify temperature indicating devices are located within the insulation or on the hull with a secondary barrier	IGC 13.5.2, 13.5.4 GC 13.5.2 & 13.5.4	

**Verifying Officer Guidance:**

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Instrumentation Examination (IE)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-IE04 Examine pressure monitoring devices

**Condition:** During instrumentation exam

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

**References:**

1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
IE04.1	Verify that each cargo tank vapor space has a pressure gauge with an indicator in the control position	IGC 13.4.1 GC 13.4.1	
IE04.2	Verify that the maximum allowable pressure is marked on the cargo tank pressure gauge indicators	IGC 13.4.1 GC 13.4.1	
IE04.3	Verify that the minimum allowable pressure is marked on the cargo tank pressure gauge indicators	IGC 13.4.1 GC 13.4.1	
IE04.4	Verify that each cargo tank vapor space has a high pressure alarm	IGC 13.4.1 GC 13.4.1	
IE04.5	Verify the operation of the cargo tank vapor space high pressure alarms	IGC 13.4.1 GC 13.4.1	
IE04.6	Verify that each cargo tank vapor space has a low pressure alarm (when vacuum protection is required)	IGC 13.4.1 GC 13.4.1	
IE04.7	Verify the operation of the cargo tank vapor space low pressure alarms (when applicable)	IGC 13.4.1 GC 13.4.1	
IE04.8	Verify that each manifold cargo line is fitted with at least one pressure gauge	IGC 13.4.2 GC 13.4.2	
IE04.9	Verify that hold/interbarrier spaces without open communication to the atmosphere are provided with operational pressure gauges	IGC 13.4.4 GC 13.4.4	

**Verifying Officer Guidance:** 04.1: If the loading/unloading of a ship is performed by the use of remotely controlled valves & pumps, all controls and indicators associated with a given cargo tank should be concentrated in one control position. On larger ships this position may be a cargo control room located within the accommodation space and on smaller ships the control position may be located on deck within the cargo area.

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Instrumentation Examination (IE)****Foreign Liquefied Gas Carrier (All)****Task:** FGCE-IE05 Examine overflow control system**Condition:** *During instrumentation exam***Standard:** *In compliance with applicable policies, laws, regulations and standards*

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
IE05.1	Verify that the high level alarm provides an audible warning	IGC 13.3.1 GC 13.3.1	
IE05.2	Verify that the high level alarm provides a visual warning	IGC 13.3.1 GC 13.3.1	
IE05.3	Verify that an automatic shutoff valve is installed that prevents the tanks from becoming liquid full	IGC 13.3.1 GC 13.3.1	

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

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****General Health & Safety Examination (GH)****Foreign Liquefied Gas Carrier (LPG)**

**Task:** FGCE-GH01 Examine decontamination showers

**Condition:** During general health and safety examination

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

**References:** 1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)

Steps		References	Initials
GH01.1	Verify that decontamination showers are suitably marked	IGC 14.4.3	
GH01.2	Verify that decontamination showers are capable of operating in all ambient conditions	IGC 14.4.3	
GH01.3	Verify that decontamination showers are located on deck and in convenient locations	IGC 14.4.3	

**Verifying Officer Guidance:** This task is only applicable to vessels authorized to carry cargoes that have 14.4.3 identified in column "i" of the table located in Chapter 19 of the IGC Code.

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****General Health & Safety Examination (GH)****Foreign Liquefied Gas Carrier (LPG)****Task:** FGCE-GH02 Examine eye wash stations**Condition:** *During general health and safety examination***Standard:** *In compliance with applicable policies, laws, regulations and standards***References:** 1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)

Steps		References	Initials
GH02.1	Verify that eye wash stations are suitably marked	IGC 14.4.3	
GH02.2	Verify that eye wash stations are capable of operating in all ambient conditions	IGC 14.4.3	
GH02.3	Verify that eye wash stations are located on deck and in convenient locations	IGC 14.4.3	

**Verifying Officer Guidance:** *This task is only applicable to vessels authorized to carry cargoes that have 14.4.3 identified in column "i" of the table located in Chapter 19 of the IGC code.*

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

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****General Health & Safety Examination (GH)****Foreign Liquefied Gas Carrier (LPG)**

**Task:** FGCE-GH03 Examine respiratory and eye protection (provided for emergency escape purposes)

**Condition:** During general health and safety examination

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

**References:** 1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)

Steps		References	Initials
GH03.1	Verify that each person onboard is provided with suitable respiratory and eye protection	IGC 14.4.2	
GH03.2	Verify that filter type respiratory protection is not being used for this purpose	IGC 14.4.2.1.1	
GH03.3	Verify that SCBAs have a duration of service of at least 15 minutes	IGC 14.4.2.1.2	
GH03.4	Verify that emergency escape respiratory equipment is identified as not to be used for cargo handling or fire fighting purposes	IGC 14.4.2.2	
GH03.5	Verify that two additional sets of respiratory and eye protection are permanently located on the bridge	IGC 14.4.2.3	

**Verifying Officer Guidance:** This task is only applicable to vessels authorized to carry cargoes that have 14.4.2 identified in column "i" of the table located in Chapter 19 of the IGC Code.

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****General Health & Safety Examination (GH)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-GH04 Examine personnel safety equipment

**Condition:** During general health and safety examination

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. Title 46, Code of Federal Regulations Part 154 Safety Standards for Self-Propelled Vessels Carrying Bulk Liquefied Gases

Steps		References	Initials
GH04.1	Verify at least two sets of safety equipment onboard in addition to the firemen's outfits required by IGC 11.6.1 & GC 11.6.1	IGC 14.2.1 GC 14.3	
GH04.2	Verify that each set of personnel safety equipment contains the required equipment	IGC 14.2.2 GC 14.4	
GH04.3	Verify that an adequate supply of compressed air is available	IGC 14.2.3.1 & .2 IGC 14.2.4 GC 14.5(a)(i), (a)(ii), & GC 14.5(b)	
GH04.4	Verify that compressed air used for safety equipment is inspected once a month by a responsible officer	IGC 14.2.6 GC 14.7 46 CFR 154.1846(a)	
GH04.5	Verify that compressed air used for safety equipment is inspected once a year by an expert	IGC 14.2.6 GC 14.7	
GH04.6	When 14.4.2 is identified in the table in chap 19 & the vsl has a cargo capacity of >2,000 m <sup>3</sup> , verify two additional sets of safety equip are provided with at least three spare charged air bottles for each additional set	IGC 14.4.4	

**Verifying Officer Guidance:** 04.1: IGC/GC 11.6.1 requires 4 firemen's outfits for vessels with a cargo capacity of 5,000 m<sup>3</sup> and below, and 5 outfits with a capacity of more than 5,000 m<sup>3</sup>. 04.2: Each set contains 1 SCBA with at least 1,200 l of air; protective clothing, boots, gloves and goggles; steel cored rescue line with belt; explosion proof lamp. 04.5: An expert typically is an individual, not part of the vessel's crew, who works ashore at a facility that conducts servicing and inspections on compressed air equipment used for breathing purposes.

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****General Health & Safety Examination (GH)****Foreign Liquefied Gas Carrier (All)****Task:** FGCE-GH05 Examine First Aid equipment**Condition:** During general health and safety examination**Standard:** In compliance with applicable policies, laws, regulations and standards

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. International Medical Guide for Ships
  4. Medical First Aid Guide (MFAG)

Steps		References	Initials
GH05.1	Verify that a stretcher, that is suitable for hoisting an injured person from a below space, is available in a readily accessible location	IGC 14.3.1 & GC 14.8	
GH05.2	Verify that first aid equipment is available	IGC 14.3.2 & GC 14.9 International Medical Guide for Ships Medical First Aid Guide (MFAG)	
GH05.3	Verify that oxygen resuscitation equipment is onboard	IGC 14.3.2 & GC 14.9 International Medical Guide for Ships Medical First Aid Guide (MFAG)	
GH05.4	Verify that antidotes are onboard (when required for a specific cargo)	IGC 14.3.2 & GC 14.9 Medical First Aid Guide (MFAG)	

**Verifying Officer Guidance:** 05.1: These stretchers will be outfitted with belts for securing an injured person and straps that can be used to hoist the strtecher from a lower location.

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Air Lock Examination (AL)****Foreign Liquefied Gas Carrier (All)****Task:** FGCE-AL01 Examine air locks**Condition:** *During general health and safety examination***Standard:** *In compliance with applicable policies, laws, regulations and standards*

**References:**

1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
AL01.1	Verify that the air lock doors are self closing	IGC 3.6.2 GC 3.6.2	
AL01.2	Verify the operation of the audible alarm system indicating if more than one door is not in the closed position	IGC 3.6.3 GC 3.6.3	
AL01.3	Verify the operation of the visual alarm indicating if more than one door is not in the closed position	IGC 3.6.3 GC 3.6.3	
AL01.4	Verify that no hold back arrangements for the doors are in place	IGC 3.6.2 GC 3.6.2	

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

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Cargo Systems Examination (CS)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CS01 Examine the Emergency Shutdown (ESD) system

**Condition:** During cargo systems examination

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

**References:**

1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
CS01.1	Verify that the (ESD) system can be activated in at least two remote locations	IGC 5.6.4 GC 5.3.4(a)	
CS01.2	Verify that the fusible elements are located at the tank domes and at the loading stations	IGC 5.6.4 GC 5.3.4(a)	
CS01.3	Verify that the fusible elements are not painted over	IGC 5.6.4 GC 5.3.4(a)	
CS01.4	Verify that the emergency shutdown valves fully close in less than 30 seconds from activation	IGC 5.6.4 GC 5.3.4(b)	
CS01.5	Verify that cargo pumps and compressors shutdown	IGC 5.6.1.3 GC 5.3.1(c)	

**Verifying Officer Guidance:** 01.5: An operational test to demonstrate this step may not always be possible. Factors that may preclude an examiner from witnessing a shutdown of cargo pumps and compressors may include loading/discharging operations that are underway, pressure of cargo tanks and the amount of time that may be required to put the equipment back on line. Coordination between the examiner and chief mate/master should take place prior to witnessing the shutdown of pumps and compressors.

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Cargo Systems Examination (CS)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CS02 Examine cargo tank pressure relief valves

**Condition:** *During cargo systems examination*

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. Title 46, Code of Federal Regulations Part 154 Safety Standards for Self-Propelled Vessels Carrying Bulk Liquefied Gases

Steps		References	Initials
CS02.1	Verify that cargo tanks with a volume exceeding 20 m <sup>3</sup> are fitted with at least two pressure relief valves	IGC 8.2.1 GC 8.2.1	
CS02.2	Verify that pressure relief valves have been sealed after being set and approved by the classification society	IGC 8.2.5 GC 8.2.5	
CS02.3	Where pressure relief valve settings are capable of being changed onboard, verify that the relief valve setting is stated at each pressure relief valve	IGC 8.2.7 GC 8.2.7 46 CFR 154.1846(c)(2)	
CS02.4	Verify that suitable protection screens are fitted on vent outlets	IGC 8.2.14 GC 8.2.14	

**Verifying Officer Guidance:** 02.3: *Only applicable to LPG carriers.*

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Cargo Systems Examination (CS)****Foreign Liquefied Gas Carrier (All)****Task:** FGCE-CS03 Examine cargo piping**Condition:** During cargo systems examination**Standard:** In compliance with applicable policies, laws, regulations and standards

**References:**

1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
CS03.1	Verify that low temperature piping is thermally isolated from the adjacent hull structure	IGC 5.2.1.3 GC 5.2.2	
CS03.2	Verify that protection for the hull is present in areas where low temperature piping can be regularly dismantled or where leakage may be anticipated	IGC 5.2.1.3 GC 5.2.2	
CS03.3	Verify that all gasketed pipe joints are electrically bonded	IGC 5.2.1.4 GC 5.2.3	
CS03.4	Verify that cargo piping which may be isolated in a liquid full condition are provided with relief valves	IGC 5.2.1.6 GC 5.2.5(a)	
CS03.5	Verify that the piping is in good condition, free of cracks and excessive corrosion	IGC 5.2.4.2 & 1.5.3 GC 5.2.6(d)(i) & 1.6.2	

**Verifying Officer Guidance:** 03.2: The water curtain protecting the hull under manifolds on an LNG carrier satisfies this requirement.

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Cargo Systems Examination (CS)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CS04 Examine cargo system valves

**Condition:** During cargo systems examination

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

**References:**

1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
CS04.1	On cargo tanks with MARVS not exceeding 0.7 bar gauge, verify the presence of shut off valves on liquid lines that are capable of manual operation	IGC 5.6.1.1 GC 5.3.1 (a)	
CS04.2	On cargo tanks with MARVS not exceeding 0.7 bar gauge, verify the presence of shut off valves on vapor lines that are capable of manual operation	IGC 5.6.1.1 GC 5.3.1 (a)	
CS04.3	On cargo tanks with MARVS exceeding 0.7 bar gauge, verify the presence of a manually operated stop valve on liquid lines	IGC 5.6.1.2 GC 5.3.1 (b)	
CS04.4	On cargo tanks with MARVS exceeding 0.7 bar gauge, verify the presence of a manually operated stop valve on vapor lines	IGC 5.6.1.2 GC 5.3.1 (b)	
CS04.5	On cargo tanks with MARVS exceeding 0.7 bar gauge, verify the presence of a remotely controlled emergency shutdown valve on liquid lines	IGC 5.6.1.2 GC 5.3.1 (b)	
CS04.6	On cargo tanks with MARVS exceeding 0.7 bar gauge, verify the presence of a remotely controlled emergency shutdown valve on vapor lines	IGC 5.6.1.2 GC 5.3.1 (b)	

**Verifying Officer Guidance:** 04.3 - 04.6: Only Type C independent tanks are authorized to have MARVS exceeding 0.7 bar gauge. A single valve may be substituted for the two separate valves provided the valve complies with IGC 5.6.4/GC 5.3.4, is capable of local manual operation and provides full closure of the line.

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Cargo Systems Examination (CS)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CS05 Examine cargo machinery room equipment

**Condition:** During cargo systems examination

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. COMDTINST M16000.7B Marine Safety Manual Volume II Material Inspection

Steps		References	Initials
CS05.1	Verify that cargo compressors are free of leaks and are in good order	IGC 3.3 & 1.5.3 GC 3.3 & 1.6.2 MSM II/D.1.G.1.c(2)	
CS05.2	Verify that cargo vaporizers are free of leaks and are in good order	IGC 3.3 & 1.5.3 GC 3.3 & 1.6.2 MSM II/D.1.G.1.c(2)	
CS05.3	Verify that gas tight seals on compressor shafts passing through decks and/or bulkheads are well lubricated and are in good order	IGC 3.3.2 & 1.5.3 GC 3.3.2 & 1.6.2 MSM II/D.1.G.1.c(2)	
CS05.4	Verify that reliquefaction system equipment is free of leaks and is in good order	IGC 7.2 & 1.5.3 GC 7.2 & 1.6.2 MSM II/D.1.G.1.c(2)	

**Verifying Officer Guidance:** *The FGCE shall determine that the Cargo Machinery Room equipment is in good order by obtaining a general impression through visual observation that a good standard of maintenance exists and that the equipment appears to be functional.*

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Cargo Environmental Control Examination (CE)****Foreign Liquefied Gas Carrier (All)****Task:** FGCE-CE01 Examine the Inert Gas System (IGS)**Condition:** *During cargo environmental control examination***Standard:** *In compliance with applicable policies, laws, regulations and standards*

**References:**

1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
CE01.1	Verify the system has an operational oxygen content meter	IGC 9.5.1 GC 9.5.1	
CE01.2	Verify the system has an operational alarm that indicates if the oxygen content of the inert gas reaches a level higher than 5%	IGC 9.5.1 GC 9.5.1	
CE01.3	Verify that a means to prevent the backflow of cargo gas is provided	IGC 9.5.2 GC 9.5.2	

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

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Cargo Environmental Control Examination (CE)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CE02 Examine the Nitrogen Gas Generating System

**Condition:** *During cargo environmental control examination*

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
CE02.1	Verify the system has an operational oxygen content meter	IGC 9.5.1 GC 9.5.1	
CE02.2	Verify the system has an operational alarm that indicates if the oxygen content of the inert gas reaches a level higher than 5%	IGC 9.5.1 GC 9.5.1	
CE02.3	Verify that a means to prevent the backflow of cargo gas is provided	IGC 9.5.2 GC 9.5.2	

**Verifying Officer Guidance:**

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Cargo Environmental Control Examination (CE)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CE03 Examine Inert Gas/Nitrogen storage tanks

**Condition:** *During cargo environmental control examination*

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
CE03.1	Verify that storage is sufficient for normal consumption of at least 30 days	IGC 9.2.1 & 9.2.2.1 GC 9.2.1 & 9.2.2(a)	
CE03.2	Verify that inert gas stored for cargo related services is not used for fire fighting	IGC 9.4.2 GC 9.4.2	

**Verifying Officer Guidance:** 03.1: *Amount of Liquid N2 storage x 696 = Total N2 capacity. Compare total N2 capacity to the amount of normal N2 usage for a 30 day period.*

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Lifesaving Equipment Examination (LS)****Foreign Liquefied Gas Carrier (All)****Task:** FGCE-LS01 Examine lifeboats**Condition:** *During lifesaving equipment examination***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. Lifesaving Appliances including LSA Code, 2010

Steps		References	Initials
LS01.1	Verify the satisfactory condition of the self contained air support system	SOLAS 09 III/31.1.6 LSA 4.8	
LS01.2	Verify the satisfactory condition of air supply system pressure visual indicators	SOLAS 09 III/31.1.6 LSA 4.8	
LS01.3	Verify the operation of the lifeboat water spray system protection system	SOLAS 09 III/31.1.7 LSA 4.8	

**Verifying Officer Guidance:** 01.3: *LPG carriers authorized to carry only toxic cargoes are not required to have a water spray system protection system. This task can only be accomplished when the lifeboat is waterborne.*

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

**Foreign Gas Carrier Examiner (FGCE)**

**Certificate of Compliance**

**Electrical Systems Examination (ES)**

**Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-ES01 Examine electrical installations in the cargo machinery room

**Condition:** *During electrical systems examination*

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
ES01.1	Verify that lighting fixtures are pressurized or flameproof	IGC 10.2.4.1 GC 10.2.5(a)	
ES01.2	Verify that general alarm audible indicators have flameproof enclosures	IGC 10.2.4.4 GC 10.2.5 (d)	
ES01.3	Verify wiring is in good condition	IGC 10.1.2 GC 10.1.2	

**Verifying Officer Guidance:**



<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Electrical Systems Examination (ES)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-ES02 Examine electrical installations in gas dangerous zones on open decks and in spaces other than cargo machinery rooms

**Condition:** *During electrical systems examination*

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
ES02.1	Verify that certified safe type equipment is used	IGC 10.2.5.1.1 GC 10.2.6(a)	
ES02.2	Verify that through runs of cables are used	IGC 10.2.5.1.2 & 10.2.5.2.2 GC 10.2.6(b) & 10.2.7(b)	
ES02.3	Verify that lighting fixtures are pressurized or flameproof	IGC 10.2.5.2.1 GC10.2.7(a)	
ES02.4	Verify that equipment used in spaces protected by airlocks that are not certified safe deenergize upon loss of overpressure in the space	IGC 10.2.5.4 & 3.6.4 GC 10.2.9 & 3.6.4	
ES02.5	Verify wiring is in good condition	IGC 10.1.2 & 1.5.3.1 GC 10.1.2 & 1.6.2(a)	

**Verifying Officer Guidance:**

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Cargo Area Ventilation System Examination (CV)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CV01 Examine cargo machinery motor room ventilation system

**Condition:** *During Cargo Area Ventilation System Examination*

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

**References:**

1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
CV01.1	Verify system can be controlled from outside of the space	IGC 12.1.1 GC 12.1.1	
CV01.2	Verify that motor room has a positive ventilation system installed	IGC 12.1.4 GC 12.1.4	
CV01.3	Verify that any adjacent air locks have mechanical ventilation and are maintained at an overpressure	IGC 3.6.5 GC 3.6.5	
CV01.4	Verify that ventilation duct openings have protection screens installed	IGC 12.1.11 GC 12.1.11	
CV01.5	Verify that a warning notice is posted outside of the space (requiring the use of ventilation when entering the space)	IGC 12.1.1 GC 12.1.1	

**Verifying Officer Guidance:**

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Cargo Area Ventilation System Examination (CV)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-CV02 Examine cargo machinery room ventilation system

**Condition:** During cargo area ventilation system examination

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

**References:**

1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
CV02.1	Verify that system can be controlled from outside of the space	IGC 12.1.1 GC 12.1.1	
CV02.2	Verify that the cargo machinery room has a negative ventilation system installed	IGC 12.1.5 GC 12.1.5	
CV02.3	Verify that ventilation extraction can be accomplished from either the upper or lower parts of the space, or both, depending on the cargoes carried	IGC 12.1.3 GC 12.1.3	
CV02.4	Verify that ventilation duct openings have protection screens installed	IGC 12.1.11 GC 12.1.11	
CV02.5	Verify that a warning notice is posted outside of the space (requiring the use of ventilation when entering the space)	IGC 12.1.1 GC 12.1.1	

**Verifying Officer Guidance:** 02.3: *Relative density is the ratio of the density of one substance to another. For gasses, the relative density is the ratio of the density of the gas to that of air. For liquefied gas cargoes with a relative density less than 1.0, the gas will rise if a leak occurs. For gases with a relative density of more than 1.0, the gas will fall if a leak occurs. The relative density of the cargoes must be taken into account when locating the ventilation extraction points within a space.*

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)**

**Certificate of Compliance**

**Gas Fuel Supply System Examination (GF)**

**Foreign Liquefied Gas Carrier (LNG)**

**Task:** FGCE-GF01 Examine the master gas valve

**Condition:** *During gas fuel supply system examination*

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
GF01.1	Verify the closing of the master gas valve in the event of a loss of ventilation in the ventilation hood or casing	IGC 16.3.7 GC 16.7	
GF01.2	Verify the closing of the master gas valve in the event of a loss of pressurization in the double wall gas fuel piping	IGC 16.3.7 GC 16.7	

**Verifying Officer Guidance:**



<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)**

**Certificate of Compliance**

**Gas Fuel Supply System Examination (GF)**

**Foreign Liquefied Gas Carrier (LNG)**

**Task:** FGCE-GF02 Examine ventilation within the ventilation hood or casing

**Condition:** *During gas fuel supply system examination*

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
GF02.1	Verify that ventilation air is capable of sweeping across the Gas Utilization Unit(s)	IGC 16.3.4 GC 16.5	
GF02.2	Verify that ventilating air is exhausted at the top of the Ventilation Hood or Casing	IGC 16.3.4 GC 16.5	

**Verifying Officer Guidance:**



<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)**

**Certificate of Compliance**

**Gas Fuel Supply System Examination (GF)**

**Foreign Liquefied Gas Carrier (LNG)**

**Task:** FGCE-GF03 Examine the gas detection system used for the protection of the cargo fuel system

**Condition:** *During gas fuel supply system examination*

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
GF03.1	Verify that an alarm is activated when gas concentrations reach 30% LEL	IGC 16.3.10 GC 16.10	
GF03.2	Verify that the master gas valve closes when gas concentrations reach 60% LEL	IGC 16.3.4 & 16.3.10 GC 16.5 & 16.10	

**Verifying Officer Guidance:**



<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)**

**Certificate of Compliance**

**Gas Fuel Supply System Examination (GF)**

**Foreign Liquefied Gas Carrier (LNG)**

**Task:** FGCE-GF04 Examine the gas utilization unit(s)

**Condition:** *During gas fuel supply system examination*

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
GF04.1	Verify that each Gas Utilization Unit has two valves in series located in the gas fuel pipe leading to the consuming unit	IGC 16.3.6 GC 16.6	
GF04.2	Verify that each Gas Utilization Unit has one valve located between the two valves that are in series and that it vents to a safe location	IGC 16.3.6 GC 16.6	

**Verifying Officer Guidance:**



<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Gas Fuel Supply System Examination (GF)****Foreign Liquefied Gas Carrier (LNG)**

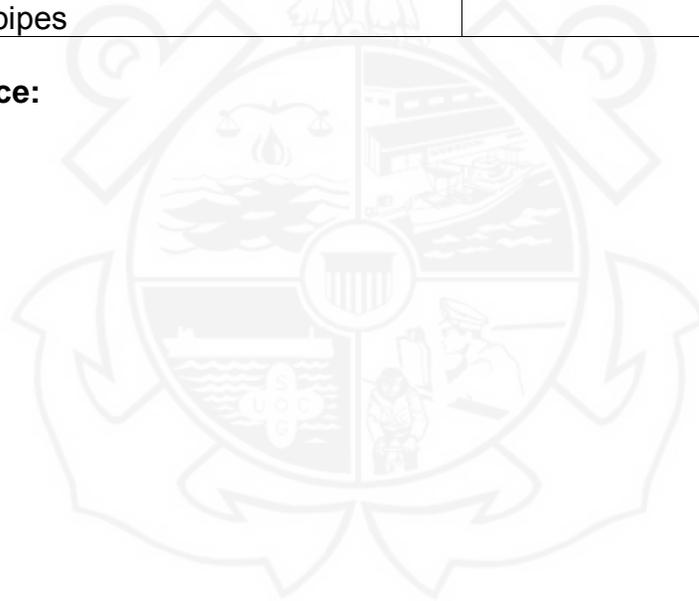
**Task:** FGCE-GF05 Examine gas fuel piping (double wall piping system)

**Condition:** *During gas fuel supply system examination*

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
GF05.1	Verify that the space between the concentric pipes is pressurized, with inert gas, at a pressure greater than the gas fuel pressure	IGC 16.3.1.1 GC 16.2(a)	
GF05.2	Verify the activation of suitable alarms to indicate a loss of inert gas pressure between the concentric pipes	IGC 16.3.1.1 GC 16.2(a)	

**Verifying Officer Guidance:**

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Gas Fuel Supply System Examination (GF)****Foreign Liquefied Gas Carrier (LNG)**

**Task:** FGCE-GF06 Examine gas fuel piping (ventilated pipe or duct system)

**Condition:** *During gas fuel supply system examination*

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
GF06.1	Verify the proper operation of mechanical exhaust ventilation between the gas fuel piping and inner wall of the pipe or duct	IGC 16.3.1.2 GC 16.2(b)	
GF06.2	Verify that continuous gas detection is provided	IGC 16.3.1.2 GC 16.2(b)	

**Verifying Officer Guidance:**

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)**

**Certificate of Compliance**

**Gas Fuel Supply System Examination (GF)**

**Foreign Liquefied Gas Carrier (LNG)**

**Task:** FGCE-GF07 Examine the Gas Combustion Unit (GCU)

**Condition:** *During gas fuel supply system examination*

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

**References:** 1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)

Steps		References	Initials
GF07.1	Verify that the Gas Combustion Unit is in an operational condition	IGC 16.6, 1.5.3 & 7.1.1.2	
GF07.2	Verify that alarms are operational IAW the Gas Combustion Unit Operations Manual	IGC 16.6, 1.5.3 & 7.1.1.2	

**Verifying Officer Guidance:** *No specific regulations or standards currently exist for GCUs. This task must be completed by visual assessment and/or the review of maintenance and operations records.*



<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Firefighting Systems Examination (FF)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-FF01 Examine fire water main equipment

**Condition:** During firefighting equipment examination

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

**References:**

1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
FF01.1	Verify the satisfactory operation of the fire main system	IGC 11.2.1 GC 11.2.1	
FF01.2	Verify that fire hydrants are located such that at least two jets of water can reach any part of the cargo area	IGC 11.2.2 GC 11.2.2	
FF01.3	Verify all firefighting nozzles are an approved dual-purpose type	IGC 11.2.4 GC 11.2.4	
FF01.4	Verify all firefighting systems pipes, valves nozzles and other fittings are resistant to corrosion by seawater	IGC 11.2.4 GC 11.2.4	
FF01.5	Verify remote starting from the navigation bridge or control station outside the cargo area if ship's engine room is unattended	IGC 11.2.5 GC 11.2.5	

**Verifying Officer Guidance:** 01.1: The fire pump must be capable of attaining a pressure of at least 5.0 bars. 01.4: This is a visual verification where the examiner will be looking for obvious signs of corrosion, wastage, etc.

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Firefighting Systems Examination (FF)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-FF02 Examine the deck water spray system

**Condition:** During firefighting equipment examination

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)

Steps		References	Initials
FF02.1	Verify the system protects the areas required by IGC11.3.1/GC11.3.1	IGC 11.3.1 GC 11.3.1	
FF02.2	Witness an operational test of the system	IGC 11.3.2 GC 11.3.2	
FF02.3	When the carriage of Propylene Oxide and Ethylene Oxide is authorized, verify that the system is capable of local operation	IGC 17.20.17 GC 17.12.8(r)	
FF02.4	Verify deck water spray pumps can be started remotely outside of the cargo area	IGC 11.3.6	
FF02.5	When the fire pump is also used to supply the deck water spray system, verify its capacity has been increased to cover all areas required to be covered by the deck water spray system	IGC 11.3.3 GC 11.3.3	

**Verifying Officer Guidance:**

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Firefighting Systems Examination (FF)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-FF03 Examine chemical powder fire-extinguishing system

**Condition:** During firefighting equipment examination

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. International Convention for the Safety of Life at Sea (SOLAS) 1974, as amended
  4. IMO MSC.1/Circ. 1432 Guidelines for the Maintenance and Inspection of Fire Protection Systems & Appliances

Steps		References	Initials
FF03.1	Verify required periodic system servicing has been completed	SOLAS 09 II-2/14.2.2 IMO MSC.1/Circ.1432	
FF03.2	Verify the condition of the independent self-contained dry chemical powder units (1,000m <sup>3</sup> or less only require one)	IGC11.4.3 & CG11.4.3	
FF03.3	Verify the condition of the inert gas storage pressure vessels	IGC 11.4.2 & GC 11.4.2	
FF03.4	Verify the condition of on deck hoses and nozzles	IGC 11.4.5 & GC 11.4.5	
FF03.5	Verify the arrangement of deck monitors to protect the cargo loading and discharge maniflod areas	IGC 11.4.2 & GC 11.4.2	
FF03.6	Verify an additional dry chemical powder unit for ships fitted with bow or stern loading and discharge arrangements	IGC 11.4.7 & CG 11.4.7	

**Verifying Officer Guidance:** *This task is only applicable to vessels authorized to carry flammable cargoes.*

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Firefighting Systems Examination (FF)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-FF04 Examine cargo machinery room fixed fire-extinguishing system

**Condition:** During firefighting equipment examination

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. International Convention for the Safety of Life at Sea (SOLAS) 1974, as amended
  4. International Code for Fire Safety Systems (FSS Code), 2007
  5. IMO MSC.1/Circ. 1318 Guidelines for the Maintenance and Inspection of Fixed Carbon Dioxide Fire-Extinguishing Systems

Steps		References	Initials
FF04.1	Verify required periodic system servicing has been completed	SOLAS 09 II-2/14.2.2 IMO MSC.1/Circ.1318	
FF04.2	Verify condition of agent storage bottles	SOLAS 09 II-2/14.2.1	
FF04.3	Verify that all openings into the space are capable of being secured	IGC 11.5.1 & GC 11.5.1 FSS Code Ch 5	
FF04.4	Verify system is properly marked	IGC 11.5.1 & GC 11.5.1 FSS Code Ch 5	

**Verifying Officer Guidance:**

<b>Inspector's Name:</b> (Last, First, Initial)	<b>EMPLID:</b>
<b>Verifying Officer's Signature:</b>	<b>Date:</b>

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Firefighting Systems Examination (FF)****Foreign Liquefied Gas Carrier (All)**

**Task:** FGCE-FF05 Examine cargo machinery motor room fixed fire-extinguishing system

**Condition:** During firefighting equipment examination

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

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. International Convention for the Safety of Life at Sea (SOLAS) 1974, as amended
  4. International Code for Fire Safety Systems (FSS Code), 2007
  5. IMO MSC.1/Circ. 1318 Guidelines for the Maintenance and Inspection of Fixed Carbon Dioxide Fire-Extinguishing Systems

Steps		References	Initials
FF05.1	Verify required periodic servicing has been completed	SOLAS 09 II-2/14.2.2 IMO MSC.1/Circ.1318	
FF05.2	Verify condition of agent storage bottles	SOLAS 09 II-2/14.2.1.2	
FF05.3	Verify that all openings into the space are capable of being secured	IGC 11.5.1 & GC 11.5.1 FSS Code Ch 5	
FF05.4	Verify system is properly marked	IGC 11.5.1 & GC 11.5.1 FSS Code Ch 5	

**Verifying Officer Guidance:**

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Firefighting Systems Examination (FF)****Foreign Liquefied Gas Carrier (All)****Task:** FGCE-FF06 Examine firemen's outfits**Condition:** During firefighting equipment examination**Standard:** In compliance with applicable policies, laws, regulations and standards

- References:**
1. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)
  2. Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code)
  3. International Convention for the Safety of Life at Sea (SOLAS) 1974, as amended
  4. International Code for Fire Safety Systems (FSS Code), 2007

Steps		References	Initials
FF06.1	Verify required amount are onboard	IGC 11.6.1 GC 11.6.1	
FF06.2	Verify the satisfactory condition of required equipment	SOLAS 09 II-2/10.10.1 FSS Code Ch 3	
FF06.3	Verify the satisfactory condition of firemen's outfits	SOLAS 09 II-2/14.2.2.1 SOLAS 09 II-2/14.2.2.3.11	
FF06.4	Verify proper stowage	SOLAS 09 II-2/10.3	

**Verifying Officer Guidance:** 06.1: <5,000 m<sup>3</sup> = 4 outfits, >5,000 m<sup>3</sup> = 5 outfits

**Inspector's Name:** (Last, First, Initial)

**EMPLID:**

**Verifying Officer's Signature:**

**Date:**

**Foreign Gas Carrier Examiner (FGCE)****Certificate of Compliance****Follow Up Actions (FU)****Foreign Liquefied Gas Carrier (All)****Task:** FGCE-FU01 Complete MISLE Activity**Condition:** Upon completion of the examination**Standard:** In accordance with current policies, procedures and processes**References:** 1. Mission Management System (MMS) Work Instruction - MISLE Data Entry Requirements for Foreign Vessels

Steps		References	Initials
FU01.1	Ensure the COC status is changed from "In Process" to "Valid"	Work Instruction 5.e.1	
FU01.2	Scan COC into MISLE documents for Initial and Renewal examinations	Work Instruction 8	
FU01.3	Change SOE status from "In Process" to "Valid" on the MSC issued certificate	Work Instruction 5.e.1	
FU01.4	Modify the SOE Issued and Expiration dates to reflect the latest examination	Work Instruction 5.e.1	

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

## Appendix A

### **List of Additional References:**

Procedures for Port State Control 2011, 2012 Edition

International Safety Management Code and Guidelines on Implementation of the ISM Code, 2010 Ed

IMO Resolution A.788(19) – Guidelines on Implementation of the International Safety Management (ISM) Code by Administrations

Liquefied Gas Handling Principles on Ships and in Terminal, Third Edition (SIGTTO)

An Introduction to the Design and Maintenance of Cargo System Pressure Relief Valves on Board Gas Carriers (SIGTTO)

Gas Concentrations in the Insulation Spaces of membrane LNG Carriers, March 2007 (SIGTTO)

A Guide to Contingency Planning for Marine Terminals Handling Liquefied Gases in Bulk, Second Edition 2001 (SIGTTO)

A Contingency Planning and Crew Response Guide for Gas Carrier Damage at Sea and in Port Approaches, Third Edition 1999 (SIGTTO)

Tanker Jetty Safety; Management of the Ship/Shore Interface (Witherby, 2007)

LNG Operational Practice (Witherby, 2006)

LNG Shipping Competency Standards; Guidance and Suggested Best Practice for the LNG Industry in the 21<sup>st</sup> Century (Witherby, 2006)

DNV Classification Notes 61.2, LNG Boil-Off Re-Liquefaction Plants and Gas Combustion Units, May 2006

Natural Gas By Sea; The Development of a New Technology (Witherby, 1993)

Liquefied Gases; Marine Transportation and Storage (Witherby, 2000)

LNG Shipping Knowledge; Underpinning Knowledge to the SIGTTO Standards (Witherby, 2011)

## Appendix B

**Glossary:** The following terms are used in this workbook and should be reviewed in order to better understand its contents:

**Advise:** to counsel or recommend

**Assign:** to give responsibility, to place under the control of a task

**Amend (Modify):** to make minor changes in/to

**Brief:** to give information or final precise instructions

**Change:** to make different in some particular way

**Check:** to inspect for satisfactory condition, accuracy, safety or performance

**Compare:** to examine (two or more objects, ideas, people, etc.) in order to note similarities and/or differences

**Communicate:** to convey knowledge of or information about: make known

**Confirm:** to validate, establish the truth, accuracy or genuineness of something

**Create:** to cause to happen; bring about; arrange, as by intention or design

**Discuss:** to verbally present a topic in detail for examination or consideration

**Determine:** to settle or decide by choice of alternatives or possibilities. "Decide" refers to arriving at a conclusion and to pronounce that decision. "Determine" is to settle or decide by choice of alternatives or possibilities and to fix precisely

**Endorse:** to approve, support or sustain; to sign one's name on a document or other instrument

**Ensure:** to make certain, to guarantee

**Enter:** to make a record of; record or register

**Evaluate:** to determine the significance or worth of, usually by careful appraisal and study

**Examine:** to look at or consider a thing carefully and in detail in order to discover something about it

**Identify:** to determine critical or necessary conditions or other factors; to determine the specific model of an item; to ascertain the origin, nature or definitive characteristics of; to recognize or establish as being a particular person or thing

**Inspect:** to examine officially; to look carefully at or over; view closely and critically

**Issue:** to serve legally binding federal documentation, notices or declarations to an individual, business or other distinctive entity

## Appendix B

**Locate:** to determine or set the position of; to find

**Make:** to create or cause to happen

**Modify (Amend):** to make minor changes in/to

**Observe (Witness):** to watch carefully

**Obtain:** to gain or attain

**Open:** to set in action, begin, start or commence

**Prepare:** plan, gather and assemble information to produce a document (i.e. COI); to put together, to combine elements and produce a product, to make ready

**Provide:** to supply or make available

**Review:** to go over for the purpose of determining correctness or currency; to examine a document or process for accuracy in content and/or format and report errors or updates to the author or controlling authority

**Schedule:** to appoint, assign, or designate for a fixed time

**Update:** to bring up to date or make current

**Validate:** to substantiate accuracy or truth of by comparison or investigation

**Verify:** to confirm or establish the accuracy or truth of something

**Witness (Observe):** to watch carefully















**Performance Qualification Standard and Job Aid Change  
Recommendation Form**

From: \_\_\_\_\_ Date: \_\_\_\_\_

PQS/CG-840 Title:


Section(s) Affected:


Remark(s)/Comment(s):


Reference(s):


Signature: \_\_\_\_\_

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