

# IAT-LNG audit checklist

Audit checklist of the IAPH tool for auditing  
LNG Bunker Facility Operators

Ship-to-Ship version

Bunker Facility Operator:

Auditing Organization:

Date:

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## User License – Terms and Conditions

Please read the Terms and Conditions (the Terms) carefully before using the IAPH Audit Tool (the Tool) as produced and distributed by the International Association of Ports and Harbors (IAPH). The Terms can be found in the description document that comes with the Tool (IAT-LNG-ST5-1).

The Terms apply to users of the Tool and to those that download and/or distribute the Tool. Your access to and use of the Tool is conditioned on your acceptance of and compliance with the Terms.

**By using or distributing the Tool you agree to be bound by these Terms. If you disagree with any part of the Terms then you may not use or distribute the Tool.**

## Confidentiality statement

All information disclosed within this document is confidential and will not be revealed to any other party without written permission of the applicant, except where disclosure is required by law.

## PART I – COMPANY, VESSELS, AND AUDIT INFORMATION

### Company

	Company Information
Company name:	
Company role: <i>E.g. bunker vessel operator</i>	
Address:	
Post address:	
Phone number:	
Contact person information:	

## Applicable vessel

	Vessel information
Vessel name:	
Distinctive identification: <i>E.g. IMO number</i>	
Port of registry:	
Type of ship and gross tonnage:	
Vessel owner: <i>Please provide company name, address, phone and contact person.</i>	
Vessel charterer: <i>Please provide company name, address, phone and contact person.</i>	
Vessel operator: <i>Please provide company name, address, phone and contact person.</i>	
Crewing agency: <i>Please provide company name, address, phone and contact person.</i>	

## Audits

	Company audit	Vessel audit	Reality check
Lead auditor:			
Supporting auditor:			
Date:			
Location:			
Signature lead auditor:			
Signature supporting auditor:			

## PART II – INTRODUCTION

### IAPH Audit Tool description

#### Objective

The objective of the IAPH Audit Tool for LNG Bunker Facility Operators is to support port authorities in their decision-making process of issuing a license (to operate) to a LNG bunker facility operator. As such the tool supports a systematically and independent process for obtaining audit evidence and objectively assessing facts in order to determine the extent to which pre-defined system safety criteria have been met.

#### System requirements

Eight high-level system safety criteria are set as 'system requirements'. Whether or not a bunker facility operator (the company) is in compliance with these requirements is determined by the assessment of the results of an audit.

During this audit, system checks are carried out at two levels:

- Management board and office organization level;
- Bunker vessel level.

For each system requirement a set of audit checks is laid down. Assessment of the outcome of these checks determines whether the company meets the specific system requirement. A well-organized and system safety-based LNG bunker operation process is in place if the company meets all eight system requirements. The system requirements are the following:

- 1) The company's management board has formulated a mission with regard to good performances in carrying out LNG bunker operations in a safe and environmentally friendly way through compliance with regulations and the prevention of incidents. In addition, the company has set objectives with respect to improving these performances and the management board works proactively to achieve these objectives. The company has a well-functioning quality management system<sup>1)</sup> to support its safety quality commitment.

<sup>1)</sup> The following is meant by a 'quality management system': A quality management system helps a company to work effectively to meet the system criteria. The system ensures the achievement of good performances with respect to safe operations by the company or by the companies involved in the operations, i.e. preventing incidents or environmental incidents and improvement of these performances. This way of working is supported by ICT where necessary.

- 2) The quality management system guarantees optimal training and competence of staff.
- 3) The quality management system guarantees optimal resources, such as LNG bunker equipment, and optimal planned maintenance of this equipment by a planned maintenance system (PMS).
- 4) The quality management system guarantees optimal preparation for performing LNG bunker operations; e.g. procedures with respect to risk assessment, SIMOPS, mooring system, compatibility checks between the ship and the bunker vessel.
- 5) The quality management system guarantees optimal safety in performing LNG bunker operations; e.g. procedures with respect to the use of checklists.
- 6) The quality management system guarantees optimal completion (aftercare) of the LNG bunker operations and guarantees that all employees are familiar with the obligation to report and make written records of any safety related non-conformities (i.e. incidents, near-incidents/near-misses and hazardous occurrences) and to act accordingly. The system also enables access to information showing to what extent these non-conformities happen in the company and what measures the company has taken for the prevention of future occurrences. In addition, the system ensures the reporting safety related non-conformities to the ports.
- 7) The company has appointed an independent Quality Manager who is responsible for the internal control on the mission and objectives mentioned above under requirement 1. The Quality Manager, for instance an HSE manager, has adequate education, training and experience. The Quality Manager is the point of contact for the port(s).
- 8) The Quality Manager bears the responsibility for internal auditing of the quality management system and for initiating improvements of the system. He or she reports on a half-yearly basis to the port(s) on their achievements with respect to the performance of safe and environmentally friendly LNG bunker operations, including a list of all relevant documentation versions.

## Explanation and usage of the audit checklist

### Checklist guidance

For each system requirement a set of audit checks is laid down by means of a checklist. The checklist has the following structure:

Nr.	Audit item company office	Result	Audit item LNG bunker vessel	Result	Reality check (Operational audit item)	Result	Clarification and reference
1	Company/Management level. Is it arranged for – are procedures in place?  <input type="checkbox"/> <i>Sub question 1</i> <input type="checkbox"/> <i>Sub question 2</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Sub item 1</i></li> <li><input type="checkbox"/> <i>Sub item 2</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Ships level. Is the LNG bunker vessel's crew aware?  <input type="checkbox"/> <i>Sub question 1</i> <input type="checkbox"/> <i>Sub question 2</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Sub item 1</i></li> <li><input type="checkbox"/> <i>Sub item 2</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Company/Management or LNG bunker vessel's level. Do they all act accordingly?  <input type="checkbox"/> <i>Sub question 1</i> <input type="checkbox"/> <i>Sub question 2</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Sub item 1</i></li> <li><input type="checkbox"/> <i>Sub item 2</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Ref. SGMF Gas as a marine fuel bunker guidelines v2.0 2017
<b>Auditor findings:</b>							

Here the auditor will enter his or her findings on the above audit items.

When the 'Yes' checkbox is ticked, the audit item is in compliance. When 'Obs' is selected, an observation was made by the auditor. No selection means the item was not checked.

On the top is the main question for this audit item (in a normal font). Under the main question, in italic font, additional questions and/or items to check may be given to support answering the main question. The auditor will tick the supporting questions / items that have been discussed during the audit.

In this part clarification of the audit check and / or reference to a standard, guideline or best practice may be found.

### Audit color legend

The following color code may be used by auditors to differentiate on how items have been audited.

Checked in advance by documentation desk study
Checked by audit
Discussed during audit
Not checked



### PART III – DOCUMENTS SUPPLIED BY COMPANY

This list is initially empty and will be filled in by the auditing team

Nr	Document	Company reference	Version and date	Status	Available on board	Findings
001					<input type="checkbox"/> Yes	
002					<input type="checkbox"/> Yes	
003					<input type="checkbox"/> Yes	
004					<input type="checkbox"/> Yes	
005					<input type="checkbox"/> Yes	
006					<input type="checkbox"/> Yes	
007					<input type="checkbox"/> Yes	
008					<input type="checkbox"/> Yes	
009					<input type="checkbox"/> Yes	
010					<input type="checkbox"/> Yes	
011					<input type="checkbox"/> Yes	
012					<input type="checkbox"/> Yes	
013					<input type="checkbox"/> Yes	
014					<input type="checkbox"/> Yes	
015					<input type="checkbox"/> Yes	
016					<input type="checkbox"/> Yes	
017					<input type="checkbox"/> Yes	
018					<input type="checkbox"/> Yes	
019					<input type="checkbox"/> Yes	
020					<input type="checkbox"/> Yes	
021					<input type="checkbox"/> Yes	
022					<input type="checkbox"/> Yes	
023					<input type="checkbox"/> Yes	
024					<input type="checkbox"/> Yes	
025					<input type="checkbox"/> Yes	

## PART IV – AUDIT CHECKLIST

### Safety system requirement 1 – Company mission on system safety and Quality Management System

The company's management board has formulated a mission with regard to good performances in carrying out LNG bunker operations in a safe and environmentally friendly way through compliance with regulations and the prevention of incidents. In addition, the company has set objectives with respect to improving these performances and the management board works proactively to achieve these objectives. The company has a well-functioning quality management system<sup>1)</sup> to support its safety quality commitment.

Nr	Audit item company office	Result	Audit item LNG bunker vessel	Result	Reality check (Operational audit item)	Result	Clarification and reference
1-1	Does the LNG bunker company have a manifested vision and mission that shows that the management supports an excellent safety and environmental performance during LNG bunker operations?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the captain of the LNG bunker vessel acquainted with the manifested vision and mission of the company?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the crew of the LNG bunker vessel acquainted with the manifested vision and mission of the company?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	This check shows whether the company is motivated to perform on a high level of safety. C1-S12-15, S5-7, S8-9
<b>Auditor findings:</b>							
1-2	Are the vision and mission translated into a clear policy, consisting of rules and measures, with regard to safety and environmental performance?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the crew of the LNG bunker vessel acquainted with the policy of the company?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are the rules and measures that are imposed by the policy unequivocally clear to the crewmembers?  How many of proposed improvements (for instance by the QM) have been implemented?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1-S12-15, S5-7, S8-9 (See QM in 7)
<b>Auditor findings:</b>							
1-3	Does the policy show a drive for continuous improvement of performance?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the crew of the LNG bunker vessel acquainted with the aim to continuously improve with regard to safety and environmental performance?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the crew point out which most recent actions were taken that aimed to improve safety and environmental performance?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Should be an integral part of the policy, the continuous improvement is explicitly considered by this check. Measures from previous accreditation audits should be discussed here as well. C1-S12-15, S5-7, S8-9
<b>Auditor findings:</b>							
1-4	Has the company reserved a budget for the improvement of performance?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Does the captain of the LNG bunker vessel have a budget for safety related improvement actions?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		Financial means are usually required for improvement actions. Budget does not have to be specific but may be part of the general budget. C1-S11-15

<b>Auditor findings:</b>							
1-5	Does the LNG bunker company have an operational quality management system (QMS) to manage the efforts to comply with this policy?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's leading staff acquainted with the company's QMS?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are the requirements of the QMS clear to the crew members? Is input consistently delivered by the crew members in order to make the QMS effective?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1-S12-15, S5-7, S8-9
<b>Auditor findings:</b>							
1-6	Does the company's annual plan mention objectives for safety and environmental performance with regard to LNG activities for instance based on LNG safety and environmental Key Performance Indicators (KPIs)?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's leading staff aware of the objectives in the annual plan with regard to safe operations?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Does the LNG bunker vessel's captain report on the operation performance in such way that it contributes to the LNG Safety and environmental KPI's?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	It's important to know whether the organization formulates improvement goals.  Including actions and recommendations of other inspections and or vetting systems.  Measures from previous accreditation audits should be discussed here as well. C1-S12-15, S5-7, S8-9
<b>Auditor findings:</b>							
1-7	Is a responsibility plan in place for all tasks during a LNG bunkering?  <input type="checkbox"/> <i>Is the appointed PIC overall responsible for the LNG bunker operation, also on the receiving vessel?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are all responsibilities well known on board of the vessel?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Do the people on board act according their responsibilities?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1-5.3, S3-4, S2-1.5/6/7, S1-1.6
<b>Auditor findings:</b>							
1-8	Have the LNG Safety and environmental KPI's of last year been met, and if not have improvement actions been undertaken?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's leading staff aware of the LNG Safety and environmental KPI's as determined by the management? Is the LNG bunker vessel's leading staff informed / aware of this review and its key findings or recommendations with regard to safety and environmental performance?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show the latest indication of performance?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	It's important that written goals are translated to measurable KPIs. C1-S12-15, S5-7, S8-9
<b>Auditor findings:</b>							

1-9	Does the company perform a regular general risk assessment with regard to safe and environmentally friendly LNG bunker operations?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's leading staff invited to participate in the general risk assessments?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		It's important that the company has a knowledge on the highest risks within their operations. Participation from the operation employees is essential. C1-S12-15, S5-7, S8-9
<b>Auditor findings:</b>							
1-10	Are procedures in place to review the applicable international, national and local regulations, port by-laws, industry guidelines, standards, checklists, and classification societies rules and guidelines, and inform all appropriate company employees accordingly?  <input type="checkbox"/> How does the company assure that the LNG bunker vessel's crew is informed on the latest rules and regulations (including Port Bye laws, manufacturer, LNG supplier information, Flag State, etc.)?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Has the LNG bunker vessel's leading staff any responsibility in the update of procedures due to possible updates of applicable regulations or requirements?  <input type="checkbox"/> In which way is the crew be informed on changes in regulations or requirements? <input type="checkbox"/> Does each crew member have to sign for having read changes to procedures and/or documents?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a responsible crew member indicate whether work instructions are different for LNG bunkering in different ports, and in what way these may be different?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1-S12-15, S5-7, S8-9
<b>Auditor findings:</b>							
1-11	Are procedures in place to identify all documents, information, analysis, procedures, licenses, accreditations, etc. required by Authorities.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are all required permits granted to perform the planned LNG bunkering?  <input type="checkbox"/> Is there a system to follow up eventual expiring periods for granted permissions?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a responsible crew member indicate whether documentation is different for LNG bunkering in different ports or locations, and in what way this may be different?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1-S12-15, S5-7, S8-9
<b>Auditor findings:</b>							

## Safety system requirement 2 – Training and Competence

The quality management system guarantees optimal training and competence of staff.

Nr	Audit item company office	Result	Audit item LNG bunker vessel	Result	Reality check (Operational audit) - Crew	Result	Clarification and reference
2-1	Has the company defined and documented a functional description with the required qualifications and competence for each position that is involved in the operation of safe the LNG bunker operations.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		n/a		S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
<b>Auditor findings:</b>							
2-2	Does the company have a training program in place that defines the required training for all personnel based on the functional descriptions and their competences?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		n/a		S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
<b>Auditor findings:</b>							
2-3	Does the company have a training management system in place that guarantees and documents the proper training and competence of all personnel, all the time, by: <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>planning and recording of training;</i></li> <li><input type="checkbox"/> <i>planning and recording of refresher training;</i></li> <li><input type="checkbox"/> <i>evaluation of training</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's captain able to verify whether the crew members have the required training and skills, and when they are due for a refresh training? <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Are LNG bunker vessel's crewmembers able to verify whether they have the required training and skills, and when they are due for a refresh training?</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show that all of the current on-board crewmembers have the required training and skills as determined by the training program? <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Is anyone on board due for a refresher training? How was he/she informed?</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, S6-11.7, i2
<b>Auditor findings:</b>							
2-4	Has the company appointed a dedicated responsible person for the training program and hence the training and competence of personnel?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's captain aware of the by the company appointed responsible person for training and competence of personnel?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
<b>Auditor findings:</b>							

2-5	Is a procedure in place that ensures that the training program is up to date, based on the appropriate legislation and company's requirements with regards to the competence of personnel?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		n/a		S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
<b>Auditor findings:</b>							
2-6	Is a procedure in place that ensures that the training program is effective; i.e. that verifies that trained staff has learned training goals as set?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is LNG bunker vessel's leading staff involved in checks on effectiveness of training? (For instance, by evaluations after the training).	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
<b>Auditor findings:</b>							
2-7	Is a procedure in place that ensures that always a sufficient number of in LNG bunker operation trained and experienced LNG bunker vessel's staff and crew is on board?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Is LNG bunker vessel's leading staff involved in checks on whether a sufficient number of in LNG bunker operations trained and experienced crew is on board?</p> <p><input type="checkbox"/> <i>Do crew changes have an impact on the number of LNG bunker operations trained and experience crew?</i></p> <p><input type="checkbox"/> <i>In case the captain noticed a lack of in LNG bunker operations trained and experienced crew, can he act accordingly?</i></p> <p><input type="checkbox"/> <i>What will be the proper reaction?</i></p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is a sufficient number of in LNG bunker operations trained and experienced crew on board?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
<b>Auditor findings:</b>							
2-8	<p>Does the training program include a familiarization training on LNG for all the LNG bunker vessel's staff, including but not limited to:</p> <p><input type="checkbox"/> <i>Properties and hazards of LNG relevant to the LNG bunkering operations;</i></p> <p><input type="checkbox"/> <i>International or national regulations and guidelines regarding LNG fuel transfer operations;</i></p> <p><input type="checkbox"/> <i>Potential effects of mixing LNG with different properties;</i></p> <p><input type="checkbox"/> <i>Risk reducing measures;</i></p> <p><input type="checkbox"/> <i>First aid specific to frost-bite and asphyxiation;</i></p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof of the LNG bunker vessel's staff having received a familiarization training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly chosen applicable LNG bunker vessel's crew member proof having received the required training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2

<b>Auditor findings:</b>							
2-9	Does the training program include a familiarization training for all LNG bunker vessel's staff with regard to the company's specific requirements, procedures and documents?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof of crew members holding this position having received such a familiarization training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly chosen applicable crew member proof to be acquainted with the company's requirements, procedures and documents?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
<b>Auditor findings:</b>							
2-10	Does the training program include a familiarization training for all LNG bunker vessel's staff with regard to the LNG bunker vessel's specific equipment, arrangements, procedures and operational characteristics?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof of crew members holding this position having received such a familiarization training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly chosen applicable crew member proof to be acquainted with the LNG bunker vessel's specific equipment, arrangements, procedures and operational characteristics?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
<b>Auditor findings:</b>							
2-11	Does the training program include training the LNG bunker vessel's leading staff on the local LNG regulations (Port Bye Laws)?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's leading staff acquainted with the local LNG regulations (Port Bye Laws);	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are ship and LNG bunker operations in compliance with the LNG regulations in the Port Bye Laws?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
<b>Auditor findings:</b>							
2-12	Does the training program include training the personnel involved in LNG bunker operations in the use of the "Ship To Ship" LNG Bunkering Checklist?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are LNG bunker vessel's crewmembers involved in the LNG bunker operations acquainted with the use of the "Ship To Ship" LNG Bunkering Checklist	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the 'Ship To Ship' LNG Bunkering Checklist properly used?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
<b>Auditor findings:</b>							
2-13	Does the training program include training the LNG bunker vessel's leading staff including 'persons in charge' (PIC), and/or the "LNG bunker superintendents" on forehand with the content of the bunker management plan?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are the LNG bunker vessel's captain, the person in charge (PIC), and/or the "LNG bunker superintendent" acquainted with the content of the bunker management plan / Bunker manual?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are ship and operations in compliance with the bunker management plan / Bunker manual?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2

<b>Auditor findings:</b>							
2-14	Does the training program include a nautical simulation training of manoeuvring the bunker vessel and approaching a receiving ship, for personnel holding a position that includes this duty?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof of crew members holding this position having received such a nautical simulation training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly chosen applicable LNG bunker vessel's crewmember prove having received the required training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2

<b>Auditor findings:</b>							
2-15	Does the training program include a training on mooring and unmooring procedures, including but not limited to:  <input type="checkbox"/> <i>Procedures for passing lines between vessels;</i> <input type="checkbox"/> <i>Quick release systems;</i> <input type="checkbox"/> <i>Properties of mooring lines;</i> <input type="checkbox"/> <i>Fender management;</i> <input type="checkbox"/> <i>Measures to minimize chafing of lines;</i> <input type="checkbox"/> <i>Awareness of snap-back zones,</i>  for personnel holding a position that includes these duties.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof of crew members holding this position having received such a training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly chosen applicable LNG bunker vessel's crewmember proof having received the required training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2

<b>Auditor findings:</b>							
2-16	Does the training program for watch keeping on the bridge include procedures specifically for LNG bunkering?  <input type="checkbox"/> <i>Will there be a bridge watch during LNG bunkering?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof of crew members holding this watch keeping position during LNG bunkering having received a training in procedures especially for LNG bunkering?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly chosen applicable LNG bunker vessel's crew member proof having received the required training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2

<b>Auditor findings:</b>							
2-17	Does the training program include training the operation of the LNG bunker vessel's specific machinery for personnel holding a position that includes this duty?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof of crew members holding this position having received a specific machine operating training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly chosen applicable LNG bunker vessel's crew member proof having received the required training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2



<b>Auditor findings:</b>							
2-18	Does the training program for deck watch keeping include procedures specifically for LNG bunkering?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof of crew members having received deck watch keeping training specifically for LNG bunkering?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly chosen applicable LNG bunker vessel's crew member proof having received the required training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
<b>Auditor findings:</b>							
2-19	Does the training program include training the LNG bunker vessel's leading staff on roles and responsibilities of the involved parties during LNG bunker operations?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof of the LNG bunker vessel's leading staff having received responsibilities training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly chosen applicable LNG bunker vessel's crew member proof having received the required training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
<b>Auditor findings:</b>							
2-20	<p>Does the training program include, for personnel with a position that includes these duties, a practical or simulation training of the LNG bunker handling, including but not limited to:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> LNG fuel transfer operations;</li> <li><input type="checkbox"/> international or national regulations and guidelines</li> <li><input type="checkbox"/> potential effects of mixing LNG with different properties;</li> <li><input type="checkbox"/> safe operation of LNG fuel transfer equipment;</li> <li><input type="checkbox"/> procedures to be followed during normal LNG bunkering operations: <ul style="list-style-type: none"> <li><input type="checkbox"/> pre-transfer procedures, tests, and checks;</li> <li><input type="checkbox"/> safe connection procedure;</li> <li><input type="checkbox"/> ESD linking;</li> <li><input type="checkbox"/> checks and procedures during LNG bunkering operations;</li> <li><input type="checkbox"/> draining and purging procedures;</li> <li><input type="checkbox"/> safe disconnection procedure;</li> <li><input type="checkbox"/> LNG fuel quantity and properties confirmation;</li> <li><input type="checkbox"/> management of operations other than LNG fuel transfer (SIMOPS) that can occur simultaneously with that transfer;</li> <li><input type="checkbox"/> routine maintenance and testing procedures;</li> <li><input type="checkbox"/> all other procedures applied for the specific operation;</li> </ul> </li> <li><input type="checkbox"/> risk reducing measures;</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof of crew members holding this position having received such a LNG bunker practical handling or simulation training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly chosen applicable LNG bunker vessel's crew member proof having received the required training?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2

**Auditor findings:**

2-21	<p>Does for personnel holding a position that includes these duties, the training program include training for:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> the operation and handling of cranes;</li> <li><input type="checkbox"/> procedures for the safe access to both ships;</li> <li><input type="checkbox"/> of the connection and disconnection of the hoses/arms;</li> <li><input type="checkbox"/> hose slinging and support arrangements;</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Can the LNG bunker vessel's captain show proof of crew members holding this position having received such a training?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Can a randomly chosen applicable LNG bunker vessel's crew member proof having received the required training?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
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**Auditor findings:**

2-22	<p>Does the training program include a training on handling incidents and emergency operations, by rapid situation assessment techniques with focus of re-stabilization of unstable situations, including but not limited to:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>aborting mooring operations;</i></li> <li><input type="checkbox"/> <i>collision;</i></li> <li><input type="checkbox"/> <i>cargo spill;</i></li> <li><input type="checkbox"/> <i>emergency disconnection and departure;</i></li> <li><input type="checkbox"/> <i>sudden change of ambient/sea conditions;</i></li> <li><input type="checkbox"/> <i>loss of power by receiving ship or bunker vessel</i></li> <li><input type="checkbox"/> <i>loss of monitoring/control/safety systems (ESD)</i></li> <li><input type="checkbox"/> <i>loss of communication;</i></li> <li><input type="checkbox"/> <i>events leading to ESD activation</i></li> <li><input type="checkbox"/> <i>abnormal operating parameters;</i></li> <li><input type="checkbox"/> <i>activated alarms;</i></li> </ul> <p>for personnel holding a position that includes handling these situations?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Can the LNG bunker vessel's captain show proof of crew members holding the position having received such a training on handling incidents and emergency operations?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Can a randomly chosen applicable LNG bunker vessel's crew member proof having received the required training?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-1.8, S4, S3-4.3, S6- 8, S2-1.8, i2
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**Auditor findings:**

### Safety system requirement 3 – Resources and Maintenance

The quality management system guarantees optimal resources, such as LNG bunker equipment, and optimal planned maintenance of this equipment by a planned maintenance system (PMS).

Nr	Audit item company office	Result	Audit item LNG bunker vessel	Result	Reality check (Operational audit item)	Result	Clarification and reference
3-1	Are procedures in place to check that all bunkering equipment is certified by the relevant Classification Society (on-board equipment) or by relevant Authorities (on-shore equipment).	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are procedures in place to check if the available certifications are still valid? Is there a program in place for recertification of equipment? Are all certifications available on board?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is a randomly selected LNG bunker vessel's crew member aware of test- and certification procedures for essential and vulnerable equipment.  <input type="checkbox"/> Ask to show several of pieces of this equipment.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5, S6-9, S3-5, S12-14.3, i4-ESI-I, i6;
<b>Auditor findings:</b>							
3-2	Are the technical requirements for the loading arm and hose arrangement as per best practice guidelines? (see reference)	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is a procedure available to perform the pre-bunkering check for the loading arm and hose arrangement to check if these are appropriate for use?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a responsible crew member provide some elements or examples that indicate that the loading arm and hose arrangement are not fit for use?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5, S6-9, S3-5 S2-9.2, S12-14.3, i4-appendix 8, i6;
<b>Auditor findings:</b>							
3-3	Are the technical requirements for the coupling and connecting flanges as per best practice guidelines? (see reference)	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is a procedure available to perform the pre-bunkering check for the coupling and connecting flanges to check if these are appropriate for use?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly chosen applicable crew member describe the actions to check the coupling and connecting flanges are fit for use.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5, S6-9, S3-5 S2-9.2, S12-14.3, i4-appendix 8, i6;
<b>Auditor findings:</b>							
3-4	Are the technical requirements for leakage detection as per best practice guidelines? (see reference)	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are procedural prescriptions available for when pre-bunkering test show that some of the leakage detection systems do not work properly?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly chosen applicable LNG bunker vessel's crew member describe what action is normally to be taken if a leakage detection doesn't work? What action is normally to be taken if a leakage detection device frequently gives alarm signals?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5, S6-9, S3-5, S12-14.3, i4-appendix 8, i6;
<b>Auditor findings:</b>							
3-5	Are the technical requirements for the Emergency Shut Down (ESD) systems as per best practice guidelines? (see reference)  <input type="checkbox"/> Does this include an ESD link between the ESD	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Does the ship PIC or the LNG bunker vessel's crew have a possibility to adapt the ESD parameters of the Emergency Shut Down (ESD) systems? Are there any restrictions to do so?  <input type="checkbox"/> Is the ship able to connect an ESD link between the	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a responsible LNG bunker vessel's crew member describe the pre-bunkering test procedure for the (ESD) systems and the actions taken if such a test gives a negative result?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5, S6-9, S3-5, S12-14.3, i4-appendix 8, i6;

	<i>system of the supplying LNG bunker facility and the ESD system of the receiving ship?</i>		<i>ESD system of the supplying LNG bunker facility and the ESD system of the receiving ship?</i>		<input type="checkbox"/> <i>Is an ESD link established between the ESD system of the supplying LNG bunker facility and the ESD system of the receiving ship?</i>		
<b>Auditor findings:</b>							
3-6	Are the technical requirements for the emergency release system as per best practice? (see reference).	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is a procedure available to perform the pre-bunkering check for the emergency release system?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the responsible LNG bunker vessel's crew member describe the functioning of the emergency release system?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5, S6-9, S3-5, S12-14.3, i4-appendix 8, i6;
<b>Auditor findings:</b>							
3-7	Are the technical requirements for the bunkering transfer rate as per best practice guidelines considered? (see reference).	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is a procedure available to determine the bunkering transfer rate and how are the technical requirements being checked?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		S5-5, S6-9, S3-5, S12-14.3, S2-7, i4-appendix 8, i6;
<b>Auditor findings:</b>							
3-8	Are the technical requirements for the vapour return line as per best practice guidelines? (see reference)	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are procedures available with regard to the choice and use of a vapour return line?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are work instructions available for the use of a vapour return line?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5, S6-9, S3-5, S12-14.3, S2-7, i4-appendix 8, i6;
<b>Auditor findings:</b>							
<b>Auditor findings:</b>							
3-9	Are the technical requirements for the Cryogenic Protection as per best practice guidelines? (see reference).	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are procedural prescriptions available for when pre-bunkering test show that some part of the cryogenic protection systems does not work properly or is broken?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Ask the LNG bunker vessel's bunker watch or other crew member if there are any instructions what to do or how to act if the water curtain stops to work properly during the bunkering operation?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5, S6-9, S3-5, S12-14.3, i4-appendix 8, i6;
<b>Auditor findings:</b>							
3-10	Does the company have a Planned Maintenance System (PMS)?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof that maintenance of the LNG bunker equipment/installation performed according the PMS	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's crew before a bunker operation able to show the latest PMS forms with regard to LNG bunker equipment and has maintenance taken place according PMS procedures?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5.8.9, S6-11.5, S8-9.16, S12; i4-appendix 8, i6;

<b>Auditor findings:</b>							
3-11	Does the PMS include a live cycle equipment replacement policy?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof that equipment is replaced according the live cycle equipment replacement policy? Does it occur that the replacement policy is delayed? Are all ordered spare parts received in time? What happens with the replaced equipment (to avoid an inappropriate re-use)?  <input type="checkbox"/> <i>Are procedures on board for:</i> <ul style="list-style-type: none"> <li><i>o Hose cares;</i></li> <li><i>o Preservations of hoses;</i></li> <li><i>o Replacement of hoses.</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is it clear to any randomly chosen LNG bunker vessel's crew member what equipment is not allowed to be used? Can it be proven that the current replacement process is un-delayed?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5.8.9, S6-11.5, S8-9.16, S12; i4-appendix 8, i6;
<b>Auditor findings:</b>							
3-12	Does PMS include the management of spare parts?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's leading staff show: <ul style="list-style-type: none"> <li>– What kind of spare parts are available on the ship?</li> <li>– What kind of spare parts are available within 24 hours?</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is it clear to any random chosen LNG bunker vessel's crew member where the spare parts are stored on the ship?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5.8.9, S6-11.5, S8-9.16, S12, i4-appendix 8, i6;
<b>Auditor findings:</b>							
3-13	Does PMS include an inspection schedule with appropriate intervals?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are the maintenance inspections integrated into LNG bunker vessel's operational maintenance routine?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is it clear to any random chosen LNG bunker vessel's crew member whether he has the possibility to report the inappropriate functioning of equipment during maintenance inspections?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5.8.9, S6-11.5, S8-9.16, S12, i4-appendix 8, i6;
<b>Auditor findings:</b>							
3-14	Does PMS include a procedure for reporting non-conformities, with possible cause if known.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Does PMS include a system to record and/or follow up for reported non-conformities, with possible cause if known. Is the role off the LNG bunker vessel's leading staff and crew with regard to the reporting mechanism clearly described?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is it clear to any random chosen LNG bunker vessel's crew member whether he has the possibility to report in a formal way the inappropriate character or malfunctioning of equipment, with possible cause if known?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5.8.9, S6-11.5, S8-9.16, S12, i4-appendix 8, i6;
<b>Auditor findings:</b>							

3-15	Does PMS include a procedure for pre- and post-operational checks on equipment.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are any prescriptions available on the frequency of execution of procedures for pre- and post-operational checks on equipment? Is it possible to adapt this frequency? What records are kept?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's operational crew show that the frequency of performed checks on different parts of equipment is according procedures? Verify on the performed actions during the check.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5.8.9, S6-11.5, S8-9.16, S12, i4-appendix 8, i6;
<b>Auditor findings:</b>							
3-16	Does PMS include procedures for appropriate corrective action.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are the procedures for corrective action integrated into LNG bunker vessel's operational maintenance routine?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's operational crew show the corrective actions that have been taken with regard to reported inappropriate or malfunctioning of equipment?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5.8.9, S6-11.5, S8-9.16, S12, i4-appendix 8, i6;
<b>Auditor findings:</b>							
3-17	Does PMS include a reporting and recording procedure of corrective actions.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Does the LNG bunker vessel's operational maintenance routine contain a reporting and recording procedure of corrective actions? How many of the corrective actions are effectively recorded and reported?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's operational crew informed about the action that has been taken due to a reported inappropriate or malfunctioning of equipment?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S5-5.8.9, S6-11.5, S8-9.16, S12, i4-appendix 8, i6;
<b>Auditor findings:</b>							

## Safety system requirement 4 – Optimal Preparations

The quality management system guarantees optimal preparation for performing LNG bunker operations; e.g. procedures with respect to risk assessment, SIMOPS, mooring system, compatibility checks between the ship and the bunker vessel.

Nr	Audit item company office	Result	Audit item LNG bunker vessel	Result	Reality check (Operational audit item)	Result	Clarification and reference
4-1	Are procedures in place for the use of Part A of the IAPH LNG Bunker Checklist Ship To Ship ('Pre Bunker Operations Checklist') during the pre-planning of the LNG bunkering?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are the LNG bunker vessel's leading staff and/or crew involved in the implementation of part A of the IAPH LNG Bunkering Checklist Ship To Ship ('Pre Bunker Operations Checklist') during the pre-planning of the LNG bunkering?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	On forehand of a bunker operation, can the LNG bunker vessel's crew show part A of the IAPH LNG bunker checklist?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S10, S3-11, S5-AnnexA, i1-15, i6;
<b>Auditor findings:</b>							
4-2	Is a procedure in place to get approval for the planned bunker operation(s) that: <ul style="list-style-type: none"> <li><input type="checkbox"/> confirms on forehand the application is compliant with local regulations and local spatial planning;</li> <li><input type="checkbox"/> provides all the application required documentation;</li> <li><input type="checkbox"/> updates all parties involved in case of changes in the application or provided application.</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's crew aware of the location specific elements that may intervene in the approval process of a LNG bunker operation?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is a randomly selected LNG bunker vessel's crew member acquainted with local conditions and requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S10, S12-7, S3-4.1, i1-12, i6;
<b>Auditor findings:</b>							
4-3	Are procedures in place to arrange for a LNG bunkering location specific HAZID, HAZOP and/or risk assessment, as required, and to provide this to the LNG bunker vessel?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's leading staff aware of any possible local situation that may lead to an abortion/relocation of the planned bunker operation? Do the bunker vessel's leading staff has access to the full documentation of the performed HAZID's, HAZOP's and/or risk assessments with regard to the planned LNG transfer?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is there a local situation on the scene that should lead to an additional risk assessment due to local aspects? Are all the activities in the vicinity of the bunker operation foreseen (i.e. as SIMOPS).	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S10, S12-8, S3-12, S6-7, i4-1.3, i6;
<b>Auditor findings:</b>							

4-4	Is a procedure in place to work within the risk criteria of the competent authority?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's crew aware of the reports concerning risk assessment and do they have access to these reports? Is the LNG bunker vessel's leading staff capable to tell in their own words what the companies risk policy contains and how this fits with competent authorities' risk acceptance?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly selected LNG bunker vessel's crew member if a certain situation is acceptable for LNG bunker transfer, or the ESD button has to be activated or other action to be taken.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	No international standards with regard to risk perimeters and external safety are available today. Local criteria should be observed. S12-8, i4-1.3, i6;
<b>Auditor findings:</b>							
4-5	Are procedures in place to arrange an LNG bunkering transfer system and compatibility assessment during the planning stage?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the Person in Charge (for planning?) from the LNG bunker vessel involved in the specific lay-out of the transfer-system and compatibility assessment during the planning stage?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		S3-4.1, S6-8.3, S5-6, S2-2.1.1, i1-8.11, i4-appendix 8, i6;
<b>Auditor findings:</b>							
4-6	Are procedures in place for structure and content of the LNG bunkering compatibility assessment?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Do the persons in charge of each LNG bunker vessel and receiving vessel have an extensive list of items (and proper information of the own assets) that need to be assessed in order to verify different possible options for each separate operation?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are LNG bunker operations in compliance with the agreements out of the compatibility check?  <input type="checkbox"/> <i>Are all operations performed as planned, or have there been any adaptations due to incomplete assessment or unforeseen events?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S3-4.1, S6-8.3, S5-6, S2-2.1.1, i1-8.11, i4-appendix 8, i6;
<b>Auditor findings:</b>							
4.7	Are procedures in place to acquaint the LNG bunker operation Person In Charge (PIC) on forehand with the information out of the STS LNG bunkering compatibility meeting.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Has LNG bunker vessel's staff, including the person in charge (PIC), and/or the "LNG bunker superintendent" acquainted themselves on forehand specific for the planned LNG bunkering?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is Person In Charge (PIC) familiar with compatibility.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S3-4.1, S6-8.3, S5-6, S2-2.1.1; i4-5, i1-7+15, i6;
<b>Auditor findings:</b>							
4-8	Are there procedures in place to involve or to inform the adjacent terminal in the planning and preparations for the LNG bunker operation?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	In what stage of the preparation of a LNG bunker operation will there be a first contact and exchange of information, idea's and operational requirements with the adjacent terminal?  <input type="checkbox"/> <i>Is there an available list of issue to be discussed? Is emergency response considered?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		With regard to interaction with logistics and incident- or emergency response of the terminal.  S10, S3-4.1, S6-8.3, S5-6, i1-15, i3, i6;



**Auditor findings:**

4.9	<p>Is a LNG bunker vessel's specific bunker management plan (BMP) in place and based on specific standards and guidelines?</p> <p><input type="checkbox"/> <i>What standards and guidelines are used for the development of the BMP?</i></p> <p><input type="checkbox"/> <i>Are all standards or guidelines for the content of the BMP regarded and incorporated in the BMP?</i></p> <p><input type="checkbox"/> <i>If not, which items are not incorporated and what is the reason behind the difference with the standard or guidelines.</i></p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Are the LNG bunker vessel's captain and crew acquainted with the LNG bunker vessel's specific bunker management plan?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Is the LNG bunker operation based on the LNG bunker vessel's specific bunker management plan?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S7-1.5, S3- 4.13, i3, i6;
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**Auditor findings:**

4.10	<p>Are procedures in place to establish jointly agreed control zones based on the ships particulars, the planned LNG bunkering specifics and specific local and nautical regulations or circumstances;</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Are LNG bunker vessel's captain and crew acquainted with the required control zones?</p> <p><input type="checkbox"/> <i>Did the Port authority approved the applicable control zones?</i></p> <p><input type="checkbox"/> <i>Is the Terminal acquainted with the required control zones?</i></p> <p><input type="checkbox"/> <i>Is there a map or plan available with the designation of the control zones to be installed during the bunker operation?</i></p> <p><input type="checkbox"/> <i>Is this map or plan available and known to all relevant crewmembers?</i></p> <p><input type="checkbox"/> <i>Are the LNG bunker vessel's leading staff and relevant crewmembers aware of criteria and aspects that have influence on the extent of those control zones?</i></p> <p><input type="checkbox"/> <i>On what basis and criteria, the bunker vessel officer would propose the boundaries of such control zones?</i></p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Are LNG bunker operations both on the LNG bunker vessel and receiving ship in compliance with the required control zones?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S13, S3-3, S6-7.2, i3, i6;
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**Auditor findings:**

4.11	<p>Does the LNG bunker management plan include procedures for simultaneous operations (SIMOPS) during the LNG-Bunkering?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Are LNG bunker vessel's captain and crew acquainted with SIMOPS requirements and restrictions?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Are LNG bunker operations both on the LNG bunker vessel and receiving ship in compliance with SIMOPS requirements and restrictions?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S1, S3-2.6, S5-Annex B, S12-11, i1-15.07, i6;
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	<input type="checkbox"/> Are the regular SIMOPS on the receiving ship prescribed in the Bunker Management Plan? <input type="checkbox"/> Is SMOPS risk mitigation during LNG bunkering prescribed in the BMP of the receiving ship? <input type="checkbox"/> Is risk mitigation during LNG bunkering prescribed in the BMP of the supplying ship? <input type="checkbox"/> Is the required risk mitigation on both ships based on a SIMOPS HAZID? <input type="checkbox"/> Is the proper SIMOPS risk mitigation as prescribed in both BMP's consolidated in the JPO and LNG bunker checklist?		<input type="checkbox"/> Is the terminal acquainted with SIMOPS requirements and restrictions? <input type="checkbox"/> Is the PIC instructed to establish an overall risk mitigation plan for SIMOPS or SIMBOPS, for both ships and if applicable the terminal? <input type="checkbox"/> Has the LNG bunker vessel's crew any available list of activities that are allowed or forbidden to be performed on the bunker facility during LNG-bunkering? <input type="checkbox"/> Has the LNG bunker vessel's crew any available list of activities that are allowed or forbidden to be performed on the receiving vessel during LNG-bunkering? <input type="checkbox"/> In which way will the LNG bunker vessel's crew perform an assessment to deal with simultaneous operations and who will be involved in such an assessment?		<input type="checkbox"/> Is an overall risk mitigation plan for SIMOPs on board? <input type="checkbox"/> Are all involved parties, (ships and terminal) and involved personnel acquainted with the content of the overall SIMOPS plan?		
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**Auditor findings:**

4.12	<p>Is a contingency plan in place to be activated in the event of a system shut down or system failure?</p> <input type="checkbox"/> Are procedures in place to ensure all crew should be made aware of any actions required in the event of a system shut-down?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Are LNG bunker vessel's leading staff and/or the person in charge (PIC) acquainted with the contingency plan that is to be activated in the event of a system shut-down or system failure?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Are crewmembers aware of any actions required in the event of system shut down or system failure?</p> <input type="checkbox"/> When was the latest exercise or drill to test the contingency plan?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S1-3.5, S2-10, S6-11.6, i4-appendix 8, i1-8.11, i6;
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**Auditor findings:**

4.13	<p>Is a contingency plan in place to be activated in the event of an emergency?</p> <input type="checkbox"/> Are procedures in place to ensure all relevant parties should be made aware of any actions required in the event of an emergency shut-down, or an emergency release of the transfer system, including making reports to the relevant Flag and Port Authorities?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Have the captain of the LNG bunker vessel, the person in charge (PIC), and/or the "LNG bunker superintendent" acquainted themselves on forehand with the contingency plan to be activated in the event of an emergency?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Are all relevant parties aware of any actions required in the event of an emergency shut-down (ESD1), or an emergency release of the transfer system (ESD2)?</p> <input type="checkbox"/> Is the LNG bunker vessel's crew aware of the obligation to report misses and near missis, including ESD1 and ESD 2 activations caused by an emergency to relevant authorities? <input type="checkbox"/> Is the LNG bunker vessel's crew aware to whom they have to report misses and near missis?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S1-3.5, S2-10, S6-11.6, i4-appendix 8, i1-8.11, i6;
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**Auditor findings:**

## Safety system requirement 5 – Safe Operations

The quality management system guarantees optimal safety in performing LNG bunker operations; e.g. procedures with respect to the use of checklists.

Nr	Audit item company office	Result	Audit item LNG bunker vessel	Result	Reality check (Operational audit item)	Result	Clarification and reference
5-1	<p>Does the company prescribe the use of an LNG bunker checklist?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>What standards and guidelines are used for the development of the LNG Bunker checklist for your ship?</i></li> <li><input type="checkbox"/> <i>Did you add additional ship specific items, or did you leave out items from the guidelines which are not applicable for your ship?</i></li> <li><input type="checkbox"/> <i>Do you have a procedure for the proper use of the checklist?</i></li> <li><input type="checkbox"/> <i>Are procedures in place for the handling of used LNG Bunkering Checklists and the sharing of relevant information after the bunkering is completed?</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Are the LNG bunker vessel's leading staff and/or the person in charge (PIC) acquainted with the proper use of the STS LNG bunker checklist?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Does the crew know what to do in case a situation doesn't comply with the checklist or in case it changed during the operation to a non-compliant?</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Is the STS checklist on board and properly used?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Are all relevant checklists completed and filled in conform the actual situation?</i></li> <li><input type="checkbox"/> <i>Is the operation compliant with the filled in items of the checklist?</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S10, S3-11, S5-Annex A, i3, i6;
<b>Auditor findings:</b>							
5-2	<p>Are procedures in place to create a joint plan of operations (JPO) to combine LNG bunker management plan of the LNG supplying vessel and the LNG receiving vessel, that manages:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Agreement on the mooring and unmooring plan with respect to the possible influence on the mooring (and fender?) arrangements of the receiving vessel, any local regulations and conditions and the output from location specific risk assessment?</i></li> <li><input type="checkbox"/> <i>Establishment of jointly agreed control zones based on the ships particulars,</i></li> <li><input type="checkbox"/> <i>the planned LNG bunkering specifics and specific local and nautical regulations or circumstances;</i></li> <li><input type="checkbox"/> <i>Development of a specific LNG bunkering procedure for on preselected LNG bunkering guidelines.</i></li> <li><input type="checkbox"/> <i>Simultaneous operations for the LNG bunker operation;</i></li> <li><input type="checkbox"/> <i>Development of a location specific emergency response plan and bunker operation safety</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Can the LNG bunker vessel's captain show proof of having a framework for such a joined plan of operation?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Is determined who is responsible for the establishment of such a plan?</i></li> <li><input type="checkbox"/> <i>What are the elements of input that the bunker vessel has to deliver and what are the elements of input that the receiving vessel will have to deliver?</i></li> <li><input type="checkbox"/> <i>Are the captains of the vessels involved in the development or have the captains of the vessels, and/or the person in charge (PIC), and/or the "LNG bunker superintendent" acquainted themselves on forehand specific with the approach / mooring plan</i></li> <li><input type="checkbox"/> <i>Are specific LNG bunker procedures available for each concerned receiving ship and the delivering bunkering facility?</i></li> <li><input type="checkbox"/> <i>Are these procedures developed during planning stage or pre-operation stage?</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Is the LNG bunker vessel's crew acquainted with the Joint plan of Operations?</p> <p><i>Before the start of a bunker operation:</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Ask a randomly selected crew member if he is aware of the existence of a joint plan of operations and if he has access to this plan for the performance of his duties.</i></li> <li><input type="checkbox"/> <i>Is the mooring arrangement between both ships as stipulated on the agreed mooring plan? What was the reason for a possible adaptation of the mooring arrangement? What was the approval procedure of the adaption?</i></li> <li><input type="checkbox"/> <i>Are the control zones clear and understood to the people around the bunker operation? Are the control zones clear and understood to the people responsible for the other activities?</i></li> <li><input type="checkbox"/> <i>Is there a specific LNG bunkering procedure for the concerned ship and bunkering facility based on</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S2-7, S7-1.5, S3- 4.13, i4-appendix8, i1-15, i6;

	instructions.		<input type="checkbox"/> Have all stakeholders involved with the LNG bunker operation acquainted themselves on forehand specific with the joint plan of operation (JPO)?		which preselected LNG bunkering guideline? <input type="checkbox"/> Are work instructions available for each specific receiving vessel? When are the specific instructions for each individual ship communicated to the crew? <input type="checkbox"/> Has the LNG bunker vessel's crew any available list of activities that are allowed or forbidden to be performed on the bunker facility during LNG-bunkering? Has the LNG bunker vessel's crew any available list of activities that are allowed or forbidden to be performed on the receiving vessel during LNG-bunkering? In which way will the LNG bunker vessel's crew perform an assessment to deal with simultaneous operations? Who will be involved in such an assessment? <input type="checkbox"/> Have the LNG bunker vessel's crew participated in the development of a location specific emergency response plan or are they informed about it? <input type="checkbox"/> Ask a randomly selected crew member if a certain situation is acceptable for LNG bunker transfer, or the ESD button has to be activated or other action to be taken.		
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**Auditor findings:**

5-3	Are your operational safety procedures in line with all standards and best practice guidelines?  <input type="checkbox"/> What references did you use for the development of the procedures for a safe operation of your LNG bunker vessel?  <input type="checkbox"/> Did you add additional ship specific items, or did you leave out items from the guidelines in your procedures which are not applicable for your ship?  <input type="checkbox"/> Which of the below, by standards and guidelines advised, procedures have you incorporated in your own operational procedures? Show two of these procedures, as per auditor's choice, for an insight view:  <ul style="list-style-type: none"> <li>○ Exchange information</li> <li>○ A pre-operation meeting;</li> <li>○ Briefing of crew;</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are LNG bunker vessel's leading staff and/or the person in charge (PIC) acquainted with the procedures for a safe operation?  <input type="checkbox"/> Does the crew see any "gaps" or procedures that are not workable? <input type="checkbox"/> Are all operational procedures available on board? <input type="checkbox"/> Are officers and crew trained in the application of operational procedures	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's crew familiar with the operational safety procedures?  <i>Conversation and questions:</i> <input type="checkbox"/> the PIC is appointed and in charge? <input type="checkbox"/> the PIC does anticipate on current and forecasted environmental conditions? <input type="checkbox"/> Do all parties involved in the LNG-bunkering know the PIC? <input type="checkbox"/> Is a pre-LNG bunker meeting executed with the responsible persons of the involved vessels? <input type="checkbox"/> Is there a proper manifold, and hose/equipment watch? <input type="checkbox"/> Is involved personal briefed, and does they understand their responsibilities? <input type="checkbox"/> Are LNG bunker hoses/arms and any associated emergency release systems safely connected? <input type="checkbox"/> Is an appropriate vapour management system, vapour return line and associated emergency	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S1, S3, S5-6, S12, S13, S2-7, i4-appendix 8, i1 6-7-8.11-12-15, i6;
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	<ul style="list-style-type: none"> <li>○ Pre-operational checks;</li> <li>○ Conducting initial checks of the transfer system;</li> <li>○ Conducting initial checks of the safety system;</li> <li>○ Monitoring of the mooring arrangement;</li> <li>○ Monitoring of the transfer system;</li> <li>○ Monitoring of transfer rate and pressures;</li> <li>○ Manifold, and hose/equipment watch keeping;</li> <li>○ Hose handling;</li> <li>○ Connection and use of LNG bunker hoses/arms;</li> <li>○ Connection of vapour return line;</li> <li>○ Connection and use of linked ESD and ERS;</li> <li>○ Testing of the release equipment;</li> <li>○ Vapour management system;</li> <li>○ Boundary of the safety zone;</li> <li>○ Personnel in the safety zone;</li> <li>○ PPE use in the safety zone;</li> <li>○ Gas detection in the safety zone;</li> <li>○ Communication systems;</li> <li>○ Protection from cryogenic brittle fracture;</li> <li>○ Electrical isolation in the LNG bunker line;</li> <li>○ Purging, inerting and cooling down prior transfer;</li> <li>○ Leak test prior transfer;</li> <li>○ Support of the transfer system;</li> <li>○ Zero emission during normal transfer;</li> <li>○ Draining and purging after the transfer;</li> <li>○ Disconnection of hoses/arms;</li> <li>○ Unmooring and separation of vessels;</li> </ul>		<p>release system safely connected</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Is the emergency shutdown system (ESD) properly connected and tested?</li> <li><input type="checkbox"/> Are LNG bunker transfer rates monitored together with associated vapour management procedures?</li> <li><input type="checkbox"/> Are initial checks of the bunkering and safety system conducted to ensure a safe transfer of LNG during the bunkering phase is ensured?</li> <li><input type="checkbox"/> Are the boundaries of the safety zone associated with bunker station and connection, clearly marked out?</li> <li><input type="checkbox"/> Is a communication system with back-up provided between the both ships?</li> <li><input type="checkbox"/> Did both ships operate on the same working channel for communication?</li> <li><input type="checkbox"/> Is the communication tested before the transfer operation started?</li> <li><input type="checkbox"/> Is the protection from cryogenic brittle fracture of the receiving ship deck and structure caused by leakage of LNG fitted as per IGF code requirements and the approved design?</li> <li><input type="checkbox"/> Is the electrical isolation in the LNG bunker line in place before bunkering commences?</li> <li><input type="checkbox"/> Is the release equipment inspected and tested?</li> <li><input type="checkbox"/> Did the crew performed a visual inspection before physical connection of the bunker hoses and connecting systems?</li> <li><input type="checkbox"/> Is the piping at LNG bunker vessel inerted and cooled down prior to the connection with the ship to be bunkered?</li> <li><input type="checkbox"/> Is during connecting of the transfer system, humidity at the flange mating surfaces avoided and were all mating surfaces clean?</li> <li><input type="checkbox"/> Are hoses suitable supported?</li> <li><input type="checkbox"/> Are the dry breakaway couplings visually examined to confirm that they are in an operational condition?</li> <li><input type="checkbox"/> Is the transfer system purged after connection?</li> <li><input type="checkbox"/> Is the transfer system checked on leaks during inerting?</li> <li><input type="checkbox"/> Is a linked ESD system connected, tested warm and cold, and is it ready for use?</li> <li><input type="checkbox"/> Is during the transfer operation, personnel in the safety zone limited to essential staff only and wears the appropriate personal protective equipment (PPE) and an individual portable gas detector?</li> </ul>	
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					<input type="checkbox"/> <i>Is during the whole transfer process the ESD operational and an ERS provided?</i> <input type="checkbox"/> <i>Is the transfer process without emissions?</i> <input type="checkbox"/> <i>Are the bunker lines, transfer system and tank condition and levels continuously monitored for the duration of the transfer operation?</i> <input type="checkbox"/> <i>Are the mooring lines supervised during the entire bunkering operation?</i> <input type="checkbox"/> <i>Is the system continuously monitored for leaks during the operation?</i> <input type="checkbox"/> <i>Is the unmooring operation in compliance with the procedure?</i>	
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**Auditor findings:**

5-4	<p>Are procedures in place to define the boundary conditions such as transfer rate, boil-off handling and loading limit have been agreed between the supplier and the ship to be bunkered?</p> <p><i>Are procedures in place to ensure an agreement before commencing the bunker LNG transfer on:</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Transfer time, temperature and pressure of the delivered LNG, pressure inside the receiving LNG bunker vessel's tank, delivery line measurement, and vapour return line measurement (if applicable)</i></li> <li><input type="checkbox"/> <i>The maximum LNG temperature that the receiving ship can handle</i></li> <li><input type="checkbox"/> <i>The maximum loading level and transfer rate, including cool down and topping up?</i></li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Are instructions on board, and is ships personal instructed to ensure the boundary conditions such as transfer rate, boil-off handling and loading limit have been agreed between the supplier and the ship to be bunkered?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Are all operational parameters known by the personnel involved in the LNG bunkering?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>S10, S2-7, S5-6.2, S12, i4-appendix 8, i1 6-7-8.11-12-15, i5-9.3, i6;</p>
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**Auditor findings:**

5-5	<p>Are procedures in place to establish that any site-specific and vessels specific risk mitigations will be in place, including control zones such as the security and safety zones?</p> <p><input type="checkbox"/> <i>Are the port and terminal acquainted with the</i></p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Is the PIC instructed to establish an overall plan for site-specific and vessels specific risk mitigation, including security and safety zones?</p> <p><input type="checkbox"/> <i>Does the port have obligations to maintain the</i></p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Is all require site-specific and vessels specific risk mitigations in place, including security and safety zones?</p> <p><input type="checkbox"/> <i>Does the PIC anticipate on current and forecasted</i></p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>S12, S13, S3-3, i4-1.4, i6;</p>
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	<i>necessary control zones?</i> <input type="checkbox"/> <i>Is a procedure in place to act on (changing) environmental conditions with operational impact;</i> <input type="checkbox"/> <i>Are procedures in place to ensure the local emergency response organization is acquainted of actions required in the event of an emergency?</i>		<i>necessary risk mitigation in control zones?</i> <input type="checkbox"/> <i>Does the terminal have obligations to maintain the necessary risk mitigation in control zones?</i>		<i>environmental conditions?</i> <input type="checkbox"/> <i>Does the port control safe passing distances for other vessels?</i> <input type="checkbox"/> <i>Does the terminal control activities in the safety and security zone?</i>		
<b>Auditor findings:</b>							
5-6	Are procedures in place to inform the necessary authorities with regard to the LNG bunkering operation?  <input type="checkbox"/> <i>Are procedures in place to ensure the permission for the transfer operation is available from the relevant authority?</i> <input type="checkbox"/> <i>How is ensured that the checklist is compliant with the port regulations of the ports you want to bunker?</i> <input type="checkbox"/> <i>How is ensured that the planned activities are in compliance with all applicable (local) regulatory requirements?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are instructions on board, and is the PIC instructed to ensure the permission for the transfer operation is available from the relevant authority?  <input type="checkbox"/> <i>Are instructions on board, and is the PIC instructed to inform the necessary authorities with regard to the LNG bunkering operation?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are the necessary authorities informed with regard to the LNG bunkering operation?  <input type="checkbox"/> <i>Are all required reports made to the appropriate authorities? Is the permission for the transfer operation available from the relevant authority?</i> <input type="checkbox"/> <i>Is the operation conducted in compliance with all applicable regulatory requirements?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	S12, S3-4, i1-12, i6;
<b>Auditor findings:</b>							

## Safety system requirement 6 – Aftercare

The quality management system guarantees optimal completion (aftercare) of the LNG bunker operations and guarantees that all employees are familiar with the obligation to report and make written records of any safety related non-conformities (i.e. incidents, near-incidents/near-misses and hazardous occurrences) and to act accordingly. The system also enables access to information showing to what extent these non-conformities happen in the company and what measures the company has taken for the prevention of future occurrences. In addition, the system ensures the reporting safety related non-conformities to the ports.

Nr	Audit item company office	Result	Audit item LNG bunker vessel	Result	Reality check (Operational audit item)	Result	Clarification and reference
6-1	Does the LNG bunker company have a manifested statement that defines a policy on reporting safety-related non-conformities (e.g. incidents, near misses, hazardous occurrences) on a non-punitive basis?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's leading staff aware of the company's policy and the agreements with regard to confidentiality and the non-punitive outcome of reporting non-conformities (e.g. incidents, near misses, hazardous occurrences)?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	On a company level: How many reports have been received/ collected?  <input type="checkbox"/> <i>Can some of them be shown?</i> <input type="checkbox"/> <i>Can be indicated what has been done?</i> <input type="checkbox"/> <i>Are there statistics?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	This check shows whether the company is motivated to have its personnel report incidents and near misses without any consequences for the person that files the report. C1, S8-9.18, S12, S5-7;
<b>Auditor findings:</b>							
6-2	Does the LNG bunker company, through its policy, stimulate a culture which features an atmosphere of responsible behavior and trust whereby people are encouraged to provide essential safety-related non-conformities without fear of retribution?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Does the LNG bunker vessel's leading staff feel safe and stimulated to report non-conformities?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly selected LNG bunker vessel's crew member show proof of reporting of an incident or near miss after the LNG bunker operation?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1, S8-9.18, S12;
<b>Auditor findings:</b>							
6-3	Has the company appointed a dedicated responsible person for the stimulation and follow-up of non-conformity reporting?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's captain aware of the by the company appointed responsible person for the stimulation and follow-up of non-conformity reporting?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly selected LNG bunker vessel's crew member name by the company appointed responsible person for the stimulation and the follow-up of non-conformity reporting?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	For instance, the Quality Manager. C1, S8-9.18, S12;
<b>Auditor findings:</b>							
6-4	Does the company have a system in place that supports non-punitive reporting of safety-related non-conformities?  <input type="checkbox"/> <i>Can the company show proof of the system being in use?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof of such a system being in place and being used?  <input type="checkbox"/> <i>Is there a proper way for a crewmember to report on the functioning of safety procedures to the QM?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly selected LNG bunker vessel's crew member tell more about using the reporting system?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1, S8-9.18, S12;
<b>Auditor findings:</b>							



6-5	Are safety-related non-conformities (e.g. incidents, near misses, hazardous occurrences) clearly defined within the company policy, and hence in the reporting system?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof that such definitions are clear and that crew members have been informed on these definitions; i.e. on which non-conformities they are expected to report.	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly selected LNG bunker vessel's crew member name some of the non-conformities he/she is expected to report?  <input type="checkbox"/> Request to read log and reports after a bunker operation	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1, S8-9.18, S12;
<b>Auditor findings:</b>							
6-6	Does the company have a procedure in place that ensures the investigation of safety-related non-conformities that are being reported?  <input type="checkbox"/> Can the company show proof of the procedure being in use? <input type="checkbox"/> Is there a Flow-Chart of Communication?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof that reported non-conformities have been investigated by the company?  <input type="checkbox"/> Is there an onboard Flow-Chart of Communication?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly selected applicable LNG bunker vessel's crew member show whether he/she has been involved in a near miss investigation?  <input type="checkbox"/> Request to read log and reports after a bunker operation	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1, S8-9.18, S12;
<b>Auditor findings:</b>							
6-7	Are adequate financial and capacity resources available for investigations of safety-related non-conformities (e.g. incidents, near misses, hazardous occurrences)?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		n/a		C1;
<b>Auditor findings:</b>							
6-8	Does the company have a procedure in place to ensure that a responsible person investigates any reported non-conformity to improve the situation, QMS or (operational) procedure?  <input type="checkbox"/> Who is responsible? <input type="checkbox"/> How long does it take to respond to incident and near misses reporting? <input type="checkbox"/> How long does it take to change, decide and implement an improved procedure?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are there any reports on the functioning / improvements communicated on board of the vessel?  <input type="checkbox"/> How are new procedures communicated? <input type="checkbox"/> By whom? <input type="checkbox"/> On which intervals?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Are investigation reports available?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1, S8-9.18, S12;
<b>Auditor findings:</b>							
6-9	Does the company have a procedure in place that ensures publishing the outcome and any required procedural improvements based on investigation outcome of a safety-related non-conformity?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can the LNG bunker vessel's captain show proof of a safety-related non-conformity that has led to a follow up (e.g. briefing, change of procedure etc.)?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Can a randomly selected LNG bunker vessel's crew member tell more about reported non-conformities being followed-up?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1, S8-9.18, S12;

<input type="checkbox"/> Can the company show proof of the procedure being in use?	<input type="checkbox"/> Does the crew receive feedback on their reporting on the functioning of safety procedures?	<input type="checkbox"/> Request to read latest Fleet Circulars
<input type="checkbox"/> Is there a Flow-Chart of Communication?	<input type="checkbox"/> Is there an onboard Flow-Chart of Communication?	

**Auditor findings:**

6-10	<p>Does the company have a procedure in place that ensures feedback to the reporting person on the investigation outcome of a safety-related non-conformity?</p> <p><input type="checkbox"/> Can the company show proof of the procedure being in use?</p> <p><input type="checkbox"/> Is there a Flow-Chart of Communication?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> Obs</p>	<p>Can the LNG bunker vessel's captain show proof of a near miss that has led to a follow up?</p> <p><input type="checkbox"/> Does the crew receive feedback on their reporting on the functioning of safety procedures?</p> <p><input type="checkbox"/> Is there an onboard Flow-Chart of Communication?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> Obs</p>	<p>Can a randomly selected applicable LNG bunker vessel's crew member show whether he/she has been involved in a near miss investigation.</p> <p><input type="checkbox"/> Request to read latest Fleet Circulars</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> Obs</p>	C1, S8-9.18, S12;
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**Auditor findings:**

## Safety system requirement 7 – Quality Manager

The company has appointed an independent Quality Manager who is responsible for the internal control on the mission and objectives mentioned above under requirement 1. The Quality Manager, for instance an HSE manager, has adequate education, training and experience. The Quality Manager is the point of contact for the port(s).

Nr	Audit item company office	Result	Audit item LNG bunker vessel	Result	Reality check (Operational audit item)	Result	Clarification and reference
7-1	Has the company appointed a Quality Manager (QM) and has the QM's role been described, for instance in the Quality Management Manual?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is interaction between the ship and QM established based on the company QM role description?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel's crew aware of the appointed QM?  <input type="checkbox"/> Can the captain show proof of interaction with the QM? <input type="checkbox"/> Can the LNG bunker vessel's crew name the QM? <input type="checkbox"/> Is the crew aware of the QM's role? <input type="checkbox"/> What does the crew discuss with the QM?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1, S12, S5-7
<b>Auditor findings:</b>							
7-2	Can it be shown that the QM is independent?  <input type="checkbox"/> What (company statement) indicates this independency? <input type="checkbox"/> In case the QM is a hired external, does the contract not withhold the QM's independency?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		n/a		For instance, a company statement, Quality Policy C1, S12, S5-7
<b>Auditor findings:</b>							
7-3	Does the QM have professional competence, knowledge and experience?  <input type="checkbox"/> Which documents of education and/or training indicate this?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		Can the QM show a specific training certificate (e.g. Internal Auditor training, DPA Course)?  <input type="checkbox"/> What can the QM tell about his job description?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1, S12, S5-7
<b>Auditor findings:</b>							
7-4	Does the QM have sufficient resources (personnel, time and money) available to be effective?  <input type="checkbox"/> Full time or part time QM? <input type="checkbox"/> How much staff? <input type="checkbox"/> How much percent of your working time is the QM using for these QM tasks?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		Can the QM show a list of follow-ups?  <input type="checkbox"/> Can the QM show a list of proposed improvements by QM to management?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1, S12, S5-7

	<input type="checkbox"/> <i>Can the QM show audit reports indicating the invested time?</i> <input type="checkbox"/> <i>How often does the QM visit the fleet?</i>						
<b>Auditor findings:</b>							
7-5	Is the QM aware of his responsibilities with regard to the internal control on the company mission and objectives; i.e. communication with the (top)management?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		Can the QM show a last internal audit report to the management and the follow-up (e.g. Corrective Action and Preventive Action Plan)?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	It's important to know whether the QM is taken seriously by the management.  C1, S12, S5-7
<b>Auditor findings:</b>							
7-6	Is the fleet regularly visited by the QM?  <input type="checkbox"/> <i>On which intervals the fleet is visited by the QM?</i> <input type="checkbox"/> <i>Can the QM show last visiting (audit) report &amp; follow-up?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Is the LNG bunker vessel regularly visited by the QM?  <input type="checkbox"/> <i>On which intervals is the vessel visited by the QM?</i> <input type="checkbox"/> <i>Are reports made up and available?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Has the LNG bunker vessel been visited by the QM?  <input type="checkbox"/> <i>Can the captain show a last date of a visit by the QM?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	Acc. ISM at least every 12 months visits/internal audits by the company  C1, S12, S5-7
<b>Auditor findings:</b>							
7-7	Is the QM appointed as contact person for port authorities?  <input type="checkbox"/> <i>If not, what is the reason?</i> <input type="checkbox"/> <i>If not, who is the alternative contact person for the competent authority?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		Is the QM aware of the contact person of the port?	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1, S12, S5-7
<b>Auditor findings:</b>							

## Safety system requirement 8 – Internal Control and Reporting

The Quality Manager bears the responsibility for internal auditing of the quality management system and for initiating improvements of the system. He or she reports on a half-yearly basis to the port(s) on their achievements with respect to the performance of safe and environmentally friendly LNG bunker operations, including a list of all relevant documentation versions.

Nr	Audit item company office	Result	Audit item LNG bunker vessel	Result	Reality check (Operational audit item)	Result	Clarification and reference
8-1	<p>Does the company have a functioning system for internally auditing the QMS?</p> <p><input type="checkbox"/> Are procedures in place?</p> <p><input type="checkbox"/> Does the QM audit the QMS at regular intervals?</p> <p><input type="checkbox"/> How long does it take for the management to respond to the QMS reporting?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Are the LNG bunker vessel's captain and crew aware that the QMS is audited?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Do internal and external audit reports correspond to planned audit schedule?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1, S12, S5-7
<b>Auditor findings:</b>							
8-2	<p>Are there procedures for improving the safety and environmental performance on LNG bunker operations based on the internal QSM audit?</p> <p><input type="checkbox"/> Does the QM gather information of performance of safety procedures for safe LNG bunker operations? (e.g. monitoring, supervising the operations during visits)</p> <p><input type="checkbox"/> Are risk assessments available? How often are they reviewed?</p> <p><input type="checkbox"/> Does the QM propose improvements?</p> <p><input type="checkbox"/> In what way and on which interval does the QM report to the management on the functioning of the QMS? (e.g. Reports, Follow-up, PMS)</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		<p>Is there any of the following:</p> <p><input type="checkbox"/> Reports and communication on visit?</p> <p><input type="checkbox"/> Reports and communication on inspections / internal audits?</p> <p><input type="checkbox"/> Reports and communication on a corrective and preventive action plan?</p> <p><input type="checkbox"/> Reports and communication on follow-up?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>System: audit (gather information) -&gt; advice improvements -&gt; initiate agreement -&gt; initiate change -&gt; communicate on it.</p> <p>Input awareness is bottom up (learning system)</p> <p>C1, S12, S5-7</p>
<b>Auditor findings:</b>							
8-3	<p>Does the QM regularly report to the LNG bunker vessel's crew on the functioning / improvements of the QMS (e.g. new procedures etc.)</p> <p><input type="checkbox"/> How are changes and/or new procedures communicated?</p> <p><input type="checkbox"/> On which intervals?</p> <p><input type="checkbox"/> What are the last changes in the Quality Management System?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Are reports on the functioning / improvements of the QMS and/or procedural changes received and communicated on board of the vessel?</p> <p><input type="checkbox"/> In what way are captain and crew informed on changes and/or new procedures received?</p> <p><input type="checkbox"/> How are changes and/or new procedures communicated onboard?</p> <p><input type="checkbox"/> Does each crew member have to sign for having</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	<p>Is there any of the following:</p> <p><input type="checkbox"/> Request to see revision index of Quality Management System</p> <p><input type="checkbox"/> Reports and communication on visit?</p> <p><input type="checkbox"/> Reports and communication on inspections / internal audits?</p> <p><input type="checkbox"/> Reports and communication on a corrective and preventive action plan?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	C1, S12, S5-7

			<i>read changes to procedures?</i> <input type="checkbox"/> <i>On which intervals?</i> <input type="checkbox"/> <i>What were the last changes?</i>		<input type="checkbox"/> <i>Reports and communication on follow-up?</i>		
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**Auditor findings:**

8-4	Does the QM regularly report to the port authority on the functioning / improvements of the QMS (e.g. new procedures etc.)  <input type="checkbox"/> <i>How are changes and/or new procedures communicated?</i> <input type="checkbox"/> <i>On which intervals?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> Obs	n/a		n/a		C1, S12, S5-7
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**Auditor findings:**

## PART V – AUDIT REPORT

Here the auditing team describes the audits that were held, impressions it got, explanation of results, et cetera; i.e. all information that a port authority may use to interpret the outcome of the audits.



## APPENDIX 1 – LIST OF REFERENCES

Reference nr.	Company
<b>C1</b>	EN ISO 9001 2015

Reference nr.	Seagoing vessels	Reference nr.	Inland vessels
<b>S1</b>	SGMF: Simultaneous Operations (SIMOPS) during LNG bunkering	<b>I1</b>	CCR: RPR rp1nl_022016
<b>S2</b>	CDI, ICS OCIMF SIGTTO: Ship to ship transfer Guide 2013	<b>I2</b>	CCR: RSP
<b>S3</b>	SGMF: Bunkering Safety Guidelines 2.0 2017	<b>I3</b>	CCR: Checklist RPR L_ctrl_avitaillement_GNL_nl
<b>S4</b>	SGMF: Competency and assessment guidelines 2017	<b>I4</b>	UN-ECE-CEPIC: ES_TRIN_nl
<b>S5</b>	ISO: ISO 20519 2017	<b>I5</b>	UN-ECE- WP 15 ADN
<b>S6</b>	ISO: ISO/TS 18683 2015	<b>I6</b>	EU-Masterplan RMD, report 2.3IB, 2.4A
<b>S7</b>	IACS: LNG bunkering guidelines No.142 2015		
<b>S8</b>	SIGTTO: Liquefied Gas Handling principles on ships and in Terminals 2016		
<b>S9</b>	ICS: Tanker Safety Guide Liquefied Gas		
<b>S10</b>	IAPH: Checklists		
<b>S11</b>	IAPH: Accreditation		
<b>S12</b>	EMSA: Guidance on LNG Bunkering to Port Authorities and Administrations 2018 (v 0.0)		
<b>S13</b>	SGMF: Recommendations of controlled zones during bunkering 2018		

### Usage

The audit checklist refers to a best practice using a reference number. Information on this best practice can then be found in this list. The best practice may be equal or different for seagoing and inland vessels. (C=Company - S=Seagoing - I=Inland)