



SAFETY AUDIT ASSESSMENT TOOL – LIQUID TANKER AND DISTRIBUTION OF LIQUID PRODUCTS

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Amendments to Doc 102/03

All	Revision of Doc.102/03 Appendix C8
All	New format of Safety Audit / Assessment Tool

NOTE Technical changes from the previous edition are underlined

1 Introduction

Auditing is a proactive management tool for use by an organisation or activity as a part of its management responsibilities. It is used to proactively confirm compliance, detect potential issues and facilitate future improvement.

EIGA Doc 102, *Audit Guidelines*, provides an overview of audit and self-assessment processes, identifies different types of audits and lists the key points for ensuring success [1].¹

Sections 8.2 and 8.4 of Doc. 102 refer to EIGA's audit tools document series that can be used in verification of findings and evidence collection and in action plans and follow up to audits.

This publication is part of that series.

2 Scope and purpose

2.1 Scope

This publication provides a checklist focusing on a specific area of safety, health and environment, management systems and technical practices within the industrial and medical gas industry.

This checklist does not incorporate all the requirements of local or national legislation. These should be taken into consideration when planning any audit or developing audit checklists.

The tool or combination of tools used can depend upon the type of audit and the organisation, location or site characteristics.

2.2 Purpose

Each Safety Audit / Assessment tool contains a list of questions that may be used by the auditor in the format shown in 3.1. Each question has a sequential reference number, the question itself and where relevant a reference to the EIGA publication or external publication that provides guidance on that specific topic.

These question sets may then be use at different stages of the audit process, by combining them with additional information columns in a manual or automated audit system, depending on company systems.

Section 3.2 shows the format of how the question set may be used for collection of evidence and development of findings.

¹ References are shown by bracketed numbers and are listed in order of appearance in the reference section.

Section 3.3 shows the format of how the question set may be used for management of actions arising from the audit.

Forms may be adapted or combined depending on audit and action monitoring systems used by a company.

The Auditor should not ask the questions on this list in isolation but should read them in conjunction with EIGA Doc 102, *Audit Guidelines*, EIGA Doc 224, *Static Vacuum Insulated Cryogenic Vessels Operation and Inspection* and EIGA Doc 24, *Vacuum Insulated Cryogenic Storage Tank Systems Pressure Protection Devices* [1, 2, 3].

3 Formats for Audit Checklists

3.1 Format for Audit / Assessment Tool Questions

Question reference	Question	Document Section Reference
<i>Use sequential numbering system within each section, for example 1.2, 1.3. Try to avoid multiple clustered questions under the same number but describe them as separate questions.</i>		<i>In EIGA reference document or external reference document</i>

3.2 Typical Format for collection of evidence and development of findings

Question reference	Question	Document Section Reference	Yes No N/A	Description of Evidence / Comments (Ref...)	Findings (Ref...)	Recommendations for improvement (Ref Doc xxx 8.2.6)	Action Required Yes/No
<i>Use sequential numbering system within each section, for example 1.2, 1.3. Try to avoid multiple clustered questions under the same number but word them as separate questions.</i>		<i>In EIGA reference document or external reference document</i>	<i>Answer is yes, no or question is not applicable</i>				

3.3 Typical format for management of actions arising from the audit

Question reference	Findings	Action(s)	By Whom	Dates	
				Target	Complete
<i>Use sequential numbering system within each section, for example 1.2, 1.3. Try to avoid multiple clustered questions under the same number but word them as separate questions.</i>					

4 Cryogenic liquid storage at customer premises – Question set

- 1 General
- 2 Safety and warning notices
- 3 Maintenance of tank and associated equipment
- 4 Electrics (when applicable)

NOTE This questionnaire is not exhaustive and may need to be complemented / adapted in order to cover all the procedures, plant and equipment on site.

	Question	Yes	No	N/A	Comment	Agreed Action	By Whom	Dates	
								Target	Compl
1.0	General Precautions								
1.1	Are safety distances in compliance with legal / company regulations <u>or EIGA recommendations</u>								
1.2.1	Is the storage area external to buildings and well ventilated								
1.2.2	If not, is it installed to a safe standard								
1.3.1	Is there clear access for tankers								
1.3.2	Does the tanker unloading position permit rapid evacuation of tanker in event of an emergency								
1.3.3	Is the tanker unloading area of suitable material for the discharge of oxygen (<u>where</u> applicable)								
1.4	Are the tank controls easily accessible during product transfer								

	Question	Yes	No	N/A	Comment	Agreed Action	By Whom	Dates	
								Target	Compl
1.5	Are unauthorised persons prohibited from the installation area								
1.6	Are all product vent lines routed to a safe location								
1.7	Is the area fenced (<u>if required</u>) and properly maintained								
1.8	Is there an emergency exit from the installation compound (<u>where fences are installed</u>)								
1.9	Is a tank data plate provided and legible								
1.10	Is adequate lighting provided to ensure good visibility during <u>filling process</u>								
1.11	Is the installation protected from mechanical damage by tankers / vehicles								

	Question	Yes	No	N/A	Comment	Agreed Action	By Whom	Dates	
								Target	Compl
1.12	Is documentation available on request (such as test certificates for vessel and pressure systems, maintenance records, repair records, modifications)								
1.13	Is the installation area kept clean and free from obstacles								
2.0	Safety and Warning Notices								
2.1	Is a 'Keep Clear' or 'No Parking' sign posted near transfer area								
2.2	Are following notices (as applicable) posted and legible: No Smoking, No Naked Flame, No Combustible Material, Liquid Oxygen / Nitrogen / Argon, <u>No Oil / Grease</u>								
2.3.1	Is a flowsheet displayed adjacent to the <u>tank</u>								
2.3.2	Is it up-to-date and legible								

	Question	Yes	No	N/A	Comment	Agreed Action	By Whom	Dates	
								Target	Compl
2.3.3	Are emergency telephone numbers clearly <u>displayed</u>								
2.4	Is gas supplier's <u>emergency</u> telephone number clearly <u>displayed</u> and kept up to date								
3.0	Maintenance of Tank Conditions and Associated Equipment								
3.1	Is the tank and associated equipment regularly inspected as part of the preventative maintenance programme (see Section 7 EIGA Doc 224 [2])								
3.2	Is the area kept free from combustible / flammable material, for example <u>wood</u> , oil, grease, tar								
3.3	Is <u>an effective</u> customer installation defect reporting system in <u>place</u>								

	Question	Yes	No	N/A	Comment	Agreed Action	By Whom	Dates	
								Target	Compl
3.4	Are tank / vaporiser holding down bolts secure								
3.5	Is tank foundation in good condition, <u>for example no sign of cracking</u> or settlement								
3.6	Is tanker unloading area <u>free from</u> any defects or damage								
3.7	Are established procedures available for inspection / overhaul of tank safety devices, see EIGA Doc 24 [3]								
3.8	Are all safety valves <u>clearly marked</u> / tagged (test date, set pressure, duty, serial number, type)								
3.9	Are all safety valves secured against reaction forces								
3.10	<u>Are all relief devices</u> free from obstructions								

	Question	Yes	No	N/A	Comment	Agreed Action	By Whom	Dates	
								Target	Compl
3.11	Are relief device outlets directed to a safe location (not to endanger people)								
3.12	Are changeover valves upstream of safety valves in the correct position								
3.13	Are safety cut-out devices (when fitted) inspected / checked at stipulated intervals (low temperature protection switches / pressure switches)								
3.14	Is access to manual vent valves free from obstruction								
3.15	Are all pipework, valves and controls clearly identified in accordance with the flowsheet								
3.16	Are dust caps provided at each fill point								

	Question	Yes	No	N/A	Comment	Agreed Action	By Whom	Dates	
								Target	Compl
4.0	Electrics (when applicable)								
4.1	Is the installation earthed <u>where required by regulation</u>								
4.2	Is the electric power supply socket <u>(when installed) installed according to applicable regulation</u>								

5 References

- [1] EIGA Doc 102, *Audit Guidelines*, www.eiga.eu
- [2] EIGA Doc 224, *Static Vacuum Insulated Cryogenic Vessels Operation and Inspection*, www.eiga.eu
- [3] EIGA Doc 24, *Vacuum Insulated Cryogenic Storage Tank Systems Pressure Protection Devices*, www.eiga.eu