

GENERAL SPECIFICATION

SAFETY

GS EP SAF 351

Escape, evacuation and rescue from fixed installations

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1. Scope

1.1 Purpose

The purpose of this general specification is to define the rules to allow all personnel on a hydrocarbon production, processing and/or storage installation to leave safely an area where a hazardous event has occurred, or is likely to occur. This includes, by order of chronology, the following steps:

- To maintain the safety of personnel when they escape to another location to avoid the effects of a hazardous event (refer to section 7),
- To ensure safe evacuation of the installation (refer to sections 8),
- To facilitate rescue of personnel in distress or injured (refer to section 9).

This shall be achieved:

- Within a time delay compatible with the design of passive protection means in place (e.g. fire resistance rating of the muster area),
- Under safe conditions, for all possible weather conditions included in the design.

The general architecture and organization of EER facilities are summarized in Fig 1 displayed in section 1.3.

1.2 Scope and limitations of use

1.2.1 Scope

This general specification is applicable to fixed offshore platforms and onshore installations handling hydrocarbon, for production, processing and/or storage purposes. Permanently anchored tankers, barges, F(P)SOs (spread or turret moored) are considered as fixed installations and requirements for escape (refer to section 7) are applicable; it may happen however that requirements for evacuation from this type of facilities, in particular as imposed by [IMO SOLAS](#), are more stringent than those developed in section 8 of the present document. In such a case [IMO SOLAS](#) requirements shall apply. This general specification does not cover Mobile offshore units, and in particular the Mobile Offshore Drilling Units (MODU).

For F(P)SO and FPU, this specification shall be read in conjunction with [GS EP SAF 380](#) which provides specific requirements for these installations.

Important notice: Although the scope of the present document is not to provide guidelines for the establishment of proper evacuation procedures, it must be stressed that all requirements conveyed are making sense only if a proper evacuation and emergency situation management philosophy has been set up and put in force.

1.2.2 Limitations of use

This general specification is limited to highlight safety considerations and should not be considered as a substitute for proper design, specification of miscellaneous pieces of structures, essential, emergency and vital electrical services and communications.

1.3 Escape, evacuation and rescue scheme

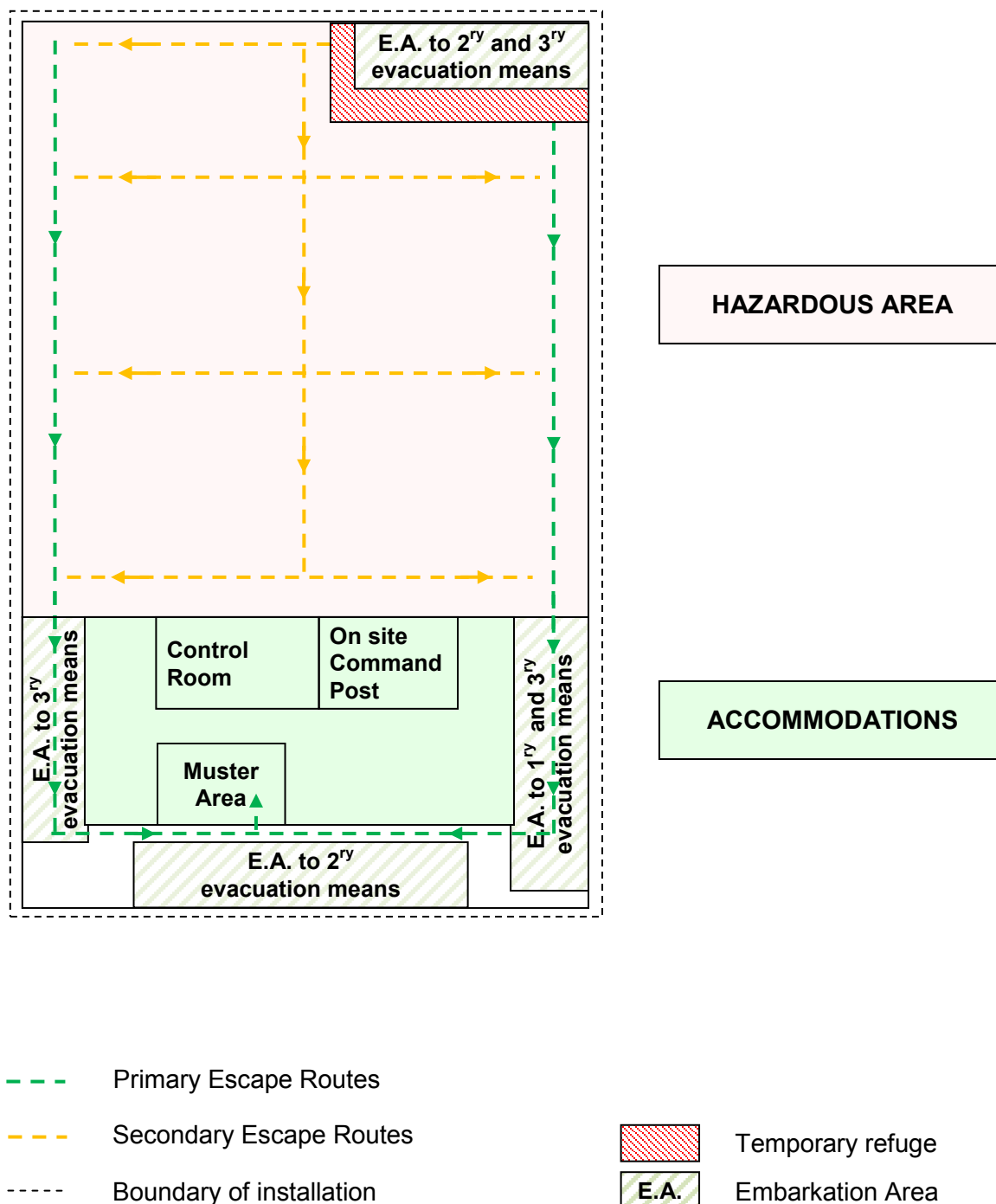


Figure 1: Offshore Escape, Evacuation and Rescue scheme

2. Reference documents

The reference documents listed below form an integral part of this General Specification.

External Documents

Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the effective date of this document.

Reference	Title
DNV-OS-E406	Offshore standard - Design of free fall lifeboats
EN 403	Respiratory protective devices for self-rescue. Filtering devices with hood for escape from fire. Requirements, testing, marking
ISO 7010	Graphical symbols- Safety colours and safety signs- Safety signs used in workplaces and public areas
ISO 13702	Petroleum and natural gas industries -- Control and mitigation of fires and explosions on offshore production installations -- Requirements and guidelines
ISO 15544	Petroleum and natural gas industries – Offshore production installations – Requirements and guidelines for emergency response
ISO 24409	Ships and marine technology - Design, location and use of shipboard safety signs, safety-related signs, safety notices and safety markings
IMO SOLAS	International Convention for the Safety Of Life At Sea (SOLAS), 1974 and subsequent amendments.
LSA Code	Life-Saving Appliances including LSA Code, IMO- edition 2010
Minnesota Seagrant	Hypothermia prevention : Survival in cold water
NORSOK S-001	Technical Safety
NOGEPA – Industry guideline nr7	Rescue at sea
OTO 95 038	Review of probable survival times for immersion in the North Sea
PIP PNE00003	Process Industry Practices – Process Unit and Offsites Layout Guide
HSE UK L65	Prevention of fire and explosion, and emergency response on offshore installations
UKOOA HS010	Guidelines for safety related telecommunication systems on fixed offshore installations

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Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published.

Reference	Title
GS EP ELE 081	Lighting
GS EP EXP 407	Identification of Safety Critical Elements
GS EP INS 134	Design and supply of integrated control and safety system
GS EP INS 307	POB, E-Mustering and E-Tracking
GS EP LSO 141	Specifications for Helicopter
GS EP LSO 202	Personnel transfer between watercrafts and between watercrafts and offshore structures
GS EP LSO 209	Life Jackets & Immersion Suits Specifications
GS EP SAF 221	Safety rules for buildings
GS EP SAF 253	Impacted, restricted areas and fire zones
GS EP SAF 380	Safety engineering requirements for an F(P)SO
GS EP STR 101	Design of offshore jacket and subsea structures
GS EP STR 651	General principles for a F(P)SO design
GS EP STR 901	Design rules and construction standards for ancillary structures of offshore installations
GS EP TEL 002	Telecom shutdown philosophy
GS EP TEL 111	Design and installation of a Telephony System
GS EP TEL 130	Marine and Air/Ground Radio Links
GS EP TEL 133	Trunked radio networks
GS EP TEL 140	Public Address and General Alarm (PAGA)
GS EP TEL 160	Closed-Circuit Television (CCTV)

3. Terms and definitions

There are three types of statements in this General Specification: “shall”, “should” and “may”. They shall be understood as follows:

Shall	Is to be understood as mandatory. Any deviation from a “shall” statement requires a derogation approved by the Company.
Should	Is to be understood as strongly recommended to comply with the requirements of the specification. Alternatives shall provide a similar level of protection and this shall be documented.
May	Is used where alternatives are equally acceptable.

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For the purpose of this document only, the following terms and definitions apply.

Accidental Limit States (ALS)	Excessive structural damage as a consequence of accidents, such as collisions, grounding, explosion and fire, which affect the safety of the structure, environment and personnel. Design against the ALS shall ensure that the structure resists accidental loads and maintain integrity and performance of the structure due to local damage or flooding (DNV-OS-E406).
CCTV	Closed Circuit Television
Evacuation, Escape and Rescue (EER)	Range of possible actions in an emergency Note: Such actions may include escape, muster, refuge, evacuation, escape to the sea and rescue/recovery (ISO 15544).
Evacuation, Escape and Rescue Strategy (EERS)	Strategy that results from an evaluation of events that may require EER Note: This strategy describes the measures required and their role. (ISO 15544).
Embarkation area	Place from which personnel leave the installation during evacuation. Examples: a helideck and associated waiting area or a lifeboat/liferaft boarding area (ISO 15544).
Emergency Shutdown (ESD)	Control actions undertaken to shut down equipment or processes in response to a hazardous situation (ISO 13702).
Emergency Shutdown System	Safety Instrumented System (SIS) which carries out the emergency shutdown and depressurisation functions, e.g. ESD-0 and ESD-1.
Emergency response (ER)	Actions taken by personnel on or off the installation to control or mitigate a hazardous event and execute abandonment (ISO 15544)
Emergency response team	Group of personnel who have designated duties in an emergency (ISO 15544).
Escape	Act of personnel moving away from a hazardous event to a place where its effects are reduced or removed (ISO 15544).
Escape route	Route leading to the place where people muster, or to an area from which people may leave the installation in an emergency (ISO 15544).
Evacuation	Planned method of leaving the installation in an emergency (ISO 15544).
Evacuation route	Escape route which leads from the muster area to the place(s) used for primary or secondary evacuation from the installation (ISO 15544).
Fatigue Limit States (FLS)	Fatigue crack growth and associated failure of structural details due to stress concentration and damage accumulation under the action of repeated loadings (DNV-OS-E406).
FiFi	A floating unit capable of producing a water jet and/or water fog jet that shall enable it to work outside the fire zone and avoid endangering the floating unit itself and that is capable of reaching the upper deck or drilling platform.