



Exploration & Production

GENERAL SPECIFICATION

SAFETY

GS EP SAF 371

Emergency control facilities

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1. Scope

1.1 Purpose of the specification

The purpose of this general specification is to define the safety requirements for the emergency control systems in production, processing, transportation and storage installations.

On the basis of the hazard tree proposed by [API RP 14J](#), the objectives of the emergency control facilities can be summarised as follows:

- **Containment of hydrocarbons and preventing of ignition**
 - Provide adequate operator interface for better control of the loss of containment once hydrocarbon leakage has occurred (see **chapter 0**)
 - Render ignition sources shut-off operation easier and more efficient in case of loss of containment of hydrocarbons (see **chapter 0**).
- **Mitigation**
 - Improve efficiency and ease activation and control of mitigation measures (see **chapter 0**)
 - Provide an emergency station where suitable conditions are met and in which key personnel can undertake mitigation duties in case of an emergency (see **chapter 0**).
- **Escape, Evacuation and Rescue**
 - Alert personnel during an emergency conditions (see **chapter 7**)
 - Provide an emergency station where suitable conditions are met and in which key personnel undertake EER co-ordination duties (see **chapter 0**)
 - Provide telecommunications within the installation and to other relevant location during an emergency condition (see **chapter 0**).

1.2 Applicability

This specification is not retroactive. It shall apply to new installations and to major modifications or extensions of existing installations. This specification applies to onshore and offshore installations.

This specification is limited to highlight safety considerations, and it should not be considered as a substitute for proper design, specification, implementation or operations of emergency control systems. It does not cover, in particular:

- Egress, fire-fighting and smoke-control facilities of buildings, for further specifics refer to [GS EP SAF 221](#) ("Safety rules for buildings"),
- Design and operation of the ESD system, for further specifics refer to [GS EP SAF 261](#) ("Emergency Shut-Down and Emergency De-Pressurisation (ESD & EDP)",
- Design and operation of the F&G detection system, for further specifics refer to [GS EP SAF 312](#) ("Guidelines for selecting and installing fire and gas detection systems"),
- EER means and procedures, for further specifics refer to [GS EP SAF 351](#) ("Escape, evacuation and rescue from fixed installations")
- Detailed design of the electrical and instrumentation associated equipment.

2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

Standards

Reference	Title
ISO/CD 13-702	(Under progress) Petroleum and natural gas industries - Control and mitigation of fires and explosions on offshore installations - Requirements and guidelines

Professional Documents

Reference	Title
API RP 14J	Recommended Practice for Design and Hazards Analysis for Offshore Production Facilities
UKOOA	Guidelines for Telecommunication systems on Normally Attended Installations. Issue 2, December 1996

Regulations

Reference	Title
Not applicable	

Codes

Reference	Title
Not applicable	

Other documents

Reference	Title
	Operating Philosophy Safety Concept Statement Of Requirements (SOR)

Total General Specifications

Reference	Title
GS EP SAF 221	Safety rules for buildings
GS EP SAF 261	Emergency Shut-Down and Emergency De-Pressurisation (ESD & EDP)

GS EP SAF 312	Guidelines for selecting and installing fire and gas detection systems
GS EP SAF 351	Escape, evacuation and rescue from fixed installations

3. Terminology and definitions

Abandonment	Act of personnel onboard leaving an installation in an emergency (ISO).
Active Fire-Fighting (AFF)	Same as Fire Protection, Active.
Alarm	Audible or visible signal indicating an off-standard or abnormal condition (ISO).
Emergency Depressurisation (EDP)	Control actions undertaken to depressurise equipment or process down to a pre-defined threshold (generally 7 barg or 50 % of design pressure) in a given period of time (generally 15 minutes) in response to a hazardous situation (ISO + COMPANY).
Emergency Response (ER)	Action taken by personnel on or off the installation to control and/or mitigate a hazardous event (ISO).
Emergency Response Plan (ERP)	Set of actions to be taken by personnel on or off the installation to control and/or mitigate any hazardous event (ISO).
Emergency response team	Personnel who have designated duties in an emergency (ISO).
Emergency Shutdown (ESD)	Control actions undertaken to Shutdown equipment or process in response to a hazardous situation (ISO).
Emergency Shutdown system	System of manual stations and automatic devices which, when activated, initiate installation Shutdown (COMPANY).
Emergency station	Place where emergency response personnel go to undertake their emergency duties (ISO).
Escape	Act of personnel moving away from a hazardous event to a place where its effects are reduced or removed (ISO).
Escape, Evacuation and Rescue (EER)	General term used to describe the range of possible actions including escape, muster, refuge, evacuation, escape to the sea and rescue/recovery (ISO).
Essential safety system	Any system which has a major role in the control and mitigation of fires and explosions and/or in any subsequent Evacuation, Escape and rescue (EER) activities (ISO).
Evacuation	Planned method of leaving the installation in an emergency (ISO).
Fire and Gas (F&G) system	Safety system which monitors the temperature or the energy flux (fire), the concentration of flammable or toxic gases (gas), and initiates alarm and Shutdown functions at pre-determined levels (COMPANY).

Fire Protection (Active) (AFP)	Any fire protection system or component which requires the manual or automatic detection of fire and which initiates a consequential response (API).
Fire Protection, Passive (PFP)	Coating, cladding arrangements or a free standing system which in the event of fire will provide thermal protection to the substrate to which it is attached or to the protected area and does so independently of a requirement for human, mechanical or other intervention to initiate a response (COMPANY from ISO and API).
Muster area	Designated area where personnel gather and report when required to do so (COMPANY from ISO).
PAGA	Abbreviation for Public Address and General Alarm.
Rescue	Process by which those who, in an emergency situation, have been injured, and/or have been blocked in the escape ways, and/or have evacuated the installation by unusual means, are retrieved to a place where medical assistance is available (COMPANY from ISO).
Restricted area	Area within the boundaries of the installation, and hence under the control of COMPANY, which is affected permanently by normal operation of the facility or exceptionally by the consequences of an emergency situation caused by a major failure (COMPANY).
Temporary Refuge	Place provided where personnel can take refuge for a pre-determined period whilst investigations, emergency response and evacuation pre-planning are undertaken (ISO).

4. Emergency response plan

4.1 Principles

The Emergency Response Plan (ERP) is the set of actions to be taken by personnel on or off the installation to control and/or mitigate any hazardous event. Even if the existence of an ERP is not imposed by applicable regulation, it is COMPANY practice to have one, in all cases. It constitutes the basis for the definition of the emergency operating procedures which shall be defined by the Operation Department, prior to the start-up, and shall address such issues as the members, the responsibilities and the role of the emergency response team.

The ERP fundamentals shall be established early in the project, preferably at pre-project phase, and shall be based on the set of emergency situations enclosed in the SAFETY CONCEPT. The ERP shall consider the different development phases of the installation, including temporary facilities, construction, drilling, major maintenance, future extensions and simultaneous operation.

The design and characteristics of emergency control facilities (control room equipment and ergonomics, communication, alarm systems, emergency station, etc.) shall be such that the implementation of the ERP is rendered possible.

Note: The ERP may involve other installations and/or other safety and rescue means.

4.2 ERP check-list