

GENERAL SPECIFICATION

TELECOMMUNICATIONS

GS EP TEL 002

Telecom Shutdown Philosophy

06	08/2018	Replacement of reference to GS EP SAF 371 to GS EP SAF 351
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1. Scope

This document outlines the actions to be taken in order to isolate securely the Telecom systems on board a platform in the event of a shutdown or of an emergency shutdown.

Unless specified, the “platform” term is applied to a floating unit (FPSO, FSO and FPU), an offshore platform or an onshore plant.

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 addendums, is the latest revision published at the effective date of this document.

Reference	Title
Not applicable	

Total General Specifications

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

Reference	Title
GS EP SAF 261	Emergency Shutdown and Emergency De-Pressurisation (ESD & EDP)
GS EP SAF 351	Escape, evacuation and rescue from fixed installations

3. Telecom shutdown philosophy

3.1 Shutdown Levels

The shutdown levels are detailed in the **GS EP SAF 261** and briefly described below, from the lowest to the highest critical status:

- SD-2 and SD-3: process alarms, resulting in shutdown of a process only at a local level
- ESD-1: confirmed Fire and/or Gas, from an ESD system status or a manual pushbutton action, resulting in shutdown of all process and main electrical systems
- ESD-0: offshore pre-abandon.

3.2 General principles

The Telecom Shutdown Philosophy shall adhere to the basic principles as described below, in the case of an Emergency Shutdown event on a platform:

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- Non-essential Telecom systems shall be shut down, as listed in:
 - Telecom Post-ESD-1 shutdown status in an offshore platform
 - Telecom Post-ESD-1 shutdown status in an onshore platform (plant with jetty)
- Essential or vital equipment which is certified and has been specified as suitable for use in Hazardous Areas Zone 1 shall continue to operate after an ESD-1.
- Essential or vital equipment, which is not certified for use in Hazardous Areas Zone 1 and which is required to continue in operation after an ESD-1 or ESD-0 event, shall be located in a safe area and protected by local gas protection. This gas protection will isolate the equipment from electrical supply in the event of gas detection in the immediate vicinity.
- Essential or vital equipment, which is not certified for use in Hazardous Areas Zone 1 and which is installed in areas not protected by gas detection, shall be shut down immediately after an ESD-1 or ESD-0 event, and isolated from equipment in other areas that are still operational.
- Radio transmission equipment, that is required to continue to operate after an ESD-1 or ESD-0 event, shall fulfil to the following criteria:
 - Certified for use in Hazardous Areas Zone 1
 - The output is limited to a safe level, essentially 1 watt at the antenna
 - All non-certified elements in the system are capable of being isolated by local gas protection panels if the cut-off of those elements does not entail the operation of the system, otherwise, the entire system will be shut down.
- Equipment certified or not and definitely classified out of zone and out of gas leak, may continue to operate after an ESD-1 or ESD-0 event.

3.3 Telecom Local Gas Protection Arrangement

There are several areas in which Telecom equipment shall have dedicated gas protection to allow non-certified essential systems to be kept operational after an ESD-1 shutdown, except if those areas are out of zones.

3.3.1 Radio mast and antenna areas

If gas protection is required inside those areas, gas detectors shall be installed consequently. Until gas is detected in the vicinity, it shall be possible to keep active and operational any radio system considered as essential.

A non-exhaustive list of outdoor systems (or part of it), if used in the project, to be covered by this protection arrangement inside the areas, is given below:

- Satellite systems (VSAT, INMARSAT...)
- Entertainment system
- HF/MF, VHF, UHF radio systems
- Point to Point system
- Point to Multipoint system

- NDB system
- Radar, Racon, Meteo sensors.

If gas is detected in the vicinity, only non-active equipment (i.e. no power supplied), and designed to have a power level at the antennas of less than 1 watt, or for which power level can be reduced below this value, can continue to operate. The equipment whose the power is more than 1 watt, or whose the power cannot be automatically reduced less than 1 watt, shall be switched off.

The equipment certified for hazardous areas can continue to operate.

3.3.2 Accommodation area (offshore platform only)

If gas reaches the accommodation (HVAC intake dampers close immediately on initial signs of gas detection), it is considered to be potentially present in all areas.

In case of ESD event, all not certified active equipment, connected and supplied by the main systems located inside the TER (telephone, computers...) shall be shut down immediately.

A dedicated gas protection shall be implemented in the TER and in the UPS / battery room (inside the accommodation), in order to maintain as much as possible non-certified, essential or vital, central equipment operational until gas is detected inside the TER or in the UPS / battery room. To perform this, a local gas detection panel independent of the ICSS and FGS, with gas detectors covering these rooms, shall be installed.

The systems to be covered by this protection arrangement inside the accommodation shall be the followings:

- The PAGA system, installed in the accommodation area.
- The POB system.
- The associated UPS and batteries in the UPS / battery room

If gas is detected inside the accommodation TER, those systems shall shutdown but the backup systems located in the secondary TER shall remain operational. It is mandatory that all copper links between the TER and the secondary TER must be switched off, with exception for optical fibre ; in the case of this optical fibre is associated with a converter, this optical equipment shall be switched off too.

3.3.3 Process Area Equipment Rooms (offshore platform only)

In case of ESD event, all not certified active equipment (telephone, computers, data equipment...), connected and supplied by the main systems located inside the TER, shall be shut down immediately. It is mandatory that all copper links between the TER and the secondary TER must be cut off with exception for fibre optic cable.

The PAGA-B system, located in the secondary TER within one of the Process Area Equipment Room, with its associated UPS and batteries (located in the same or separated UPS / battery room), shall be protected by a local gas detection panel, with gas detectors covering these rooms.

If the PAGA-A shutdowns as a result of an event of gas within the accommodation area, the independent local protection within the secondary TER shall allow PAGA-B to remain

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operational for the broadcast of alarm tones and emergency speech originating from Emergency Access units.

3.4 Telecom Individual Systems Response to ESD Events

3.4.1 Process Shutdown (SD-2 or SD-3)

On SD-2 and SD-3 event, in external areas, no action is required. Process areas only are affected on a local basis. The Telecom equipment in use in the Process external areas are telephones, loudspeakers, flashing beacons, CCTV cameras..., in certified housings, and certified hand-portable radios.

All Telecom equipment in the areas affected by the shutdown is considered safe to operate and do not require further isolation. Local interior gas detection shall result in removal of supplies locally, and relay contact isolation of any feeder cables serving the area.

All the cables carrying energy whose the origin is out of the SD2-3 area, shall be isolated.

If radio equipment with external antenna is installed in that area, the power shall be reduced to a value less than 1 watt at the antenna; otherwise the system shall be shut down.

3.4.2 Emergency Shutdown (ESD-1)

Vital and essential Telecom equipment shall continue to operate, depending on their locations and their certification for hazardous areas.

All non-essential Telecom equipment and systems shall be isolated and shall have power supplies removed. When such equipment also contains batteries for its main power source, there shall be isolated from their load.

Minimum post-ESD systems autonomy are defined in [GS EP SAF 351](#), paragraph 6.

3.4.3 Platform abandon (ESD-0)

Only the PAGA systems, the POB, the RACON (if certified for hazardous area), portable certified radios and equipment non-certified to be used far away from the vessel, can be operational in a post-Plant Abandon scenario (ESD-0). The central system radio shall be switched off.

It shall be noticed that the operation of both the PAGA-A & B shall be limited by the autonomy of their UPS batteries.

Minimum post ESD systems autonomy are defined in [GS EP SAF 351](#), paragraph 6.

Telecom equipment to be used in an abandonment scenario (offshore platform only)

The following equipment (when applicable) shall remain available to ensure communications after a platform abandon:

- Satellite phone terminal (not certified), in portable mode, switched on when staff out of gas area
- VHF marine hand-portable lifeboat radios (ATEX certified)
- GMDSS portable radios (ATEX or not)