



Exploration & Production

GENERAL SPECIFICATION

HVAC

GS EP HVA 301

HVAC Plant Room(s)

03	01/2012	Details for emergency push buttons - Ventilation - Electrical architecture
02	01/2011	General arrangement, safety valves, ventilation
01	10/2009	Updating of "Reference documents"
00	10/2008	First issue
Rev.	Date	Notes

Owner: DEV/TEC

Managing entity: DEV/TEC/MTH



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1. Scope

The purpose of this document is to define the requirements for the design of the *HVAC PLANT ROOMS*. For other rooms containing *REFRIGERANT*, *HVAC ENGINEERING* must refer to *COMPANY HVAC SPECIALIST*.

The words and expressions in capital characters and italic are defined inside the general specification **GS EP HVA 801**.

When other words require a restrictive definition only applicable for that document, the definition is given in a paragraph of that document. Moreover defined word is written in small and *italic* letters.

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**.

Documents order of precedence is defined in **GS EP HVA 100**.

Notes:

- In case of discrepancy between documents (whatever the documents and/or whatever origins), the most expensive solution must be quoted by the *BIDDER*. During the studies (Basic Engineering and/or Detailed Engineering) *CONTRACTOR(s)* shall raise the discrepancy noted to the *COMPANY's HVAC SPECIALIST*. This last shall review and advise which document(s) is (are) to be unforced for the project
- The *HVAC VENDOR* or *CONTRACTOR* may propose proven improvements to the reference documents but must obtain written approval of the *COMPANY* prior to *implementation*.
- An International Standard is a good "engineering practice" which shall be recognised and taken into consideration by *VENDOR*, *SUPPLIER*, *MANUFACTURER* and/or *CONTRACTOR*. If required, the translation of the standards must be included into *HVAC* scope.

The latest revision of Standards, codes, regulations and the published errata, if any, must be used and applied by *VENDOR*, *SUPPLIER*, *MANUFACTURER* and *CONTRACTOR*.

Standards

Reference	Title
EN 378 (Parts 1; 3)	Refrigerating systems and heat pumps - Safety and environmental requirements - (Parts 1; 3)

Professional Documents

Reference	Title
Not applicable	



Regulations

Reference	Title
Directive 94/9/EC, referred to a ATEX 100a / 95	Directive of the European parliament and the council on the approximation of the laws of the member states concerning equipment and protective systems intended for use in potentially explosives atmospheres
Directive 97/23/EC dated 29 May 1997	Directive 97/23/EC of the European Parliament and of the Council of 29 May 1997 on the approximation of the laws of the Member States concerning pressure equipment
Directive 98/37/EC dated 27 June 1988	Directive 98/37/EC of the European Parliament and of the Council of 22 June 1998 on the approximation of the laws of the Member States relating to machinery
Directive 2004/108/EC dated 15 December 2004	Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC Text with EEA relevance
Directive 2006/95 dated 12 December 2006	Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

Codes

Reference	Title
Not applicable	

Other documents

Reference	Title
Not applicable	

Total General Specifications

Reference	Title
GS EP HVA 100	HVAC Basis of design
GS EP HVA 202	Air Handling Unit(s) (AHU)
GS EP HVA 801	Terminology, definitions, abbreviations

3. General

Note 1: Section 1.1 of [EN 378-3](#) is not applicable.

Note 2: The terms "machinery room" and "special machinery room" as defined in [EN 378-1](#) and [EN 378-3](#) shall be understood as an *HVAC PLANT ROOM*.

For the definition of an *HVAC PLANT ROOM*, refer to [GS EP HVA 801](#).

A label "HVAC PLANT ROOM - RESTRICTED ACCESS", engraved on stainless steel plate, shall be fixed on *HVAC PLANT ROOM* access / escape doors (outside face of doors) by the main *CONTRACTOR* or, if any, by the *HVAC CONTRACTOR*.

REFRIGERANT gas escaping from refrigerating equipment shall be prevented to enter in adjacent rooms and staircases. The escaping *REFRIGERANT* gas shall be vented outdoor without inducing a new hazard.

A minimum of two doors shall be installed for each *HVAC PLANT ROOM*. In case an access door is giving a direct access to an outside area which is not classified as "safe", an airlock shall be foreseen.

REFRIGERANT gas must not be stored in *HVAC PLANT ROOM*. The *HVAC CONTRACTOR* is in charge to provide a engraved announcement label indicating that *REFRIGERANT* storage is forbidden in the *HVAC PLANT ROOM*. This label engraved on a stainless steel plate, shall be fixed on *HVAC PLANT ROOM* access / escape doors by the main *CONTRACTOR* or, if any, by the *HVAC CONTRACTOR*.

All piping, ducting and cables passing through *WALLS* shall be tightly sealed ("MCT" type).

The access doors to an *HVAC PLANT ROOM* shall be fire resistant and shall be fire classified with the same fire class as *WALLS*.

"The doors shall have at least a one-hour fire resistance construction, using materials and construction tested in accordance with EN 1634", as indicated in paragraph 5.15.1 of [EN 378-3](#) Standard, is not applicable.

3.1 Emergency push buttons

3.1.1 General emergency push button

One general emergency push button shall be placed near each *HVAC PLANT ROOM* access door (refer to *HVAC* interfaces - Project specification and/or General Specifications), outside the *HVAC PLANT ROOM*.

Actions of each general emergency push button are:

- To stop the *HVAC* equipment installed inside the *HVAC PLANT ROOM*
- To stop the *HVAC* equipment located outside the *HVAC PLANT ROOM*, when this equipment is supplied from a *HVAC MCC* and/or from a *HVAC CC* located within the *HVAC PLANT ROOM*
- To de-energize the *HVAC* equipment installed inside the *HVAC PLANT ROOM* (*HVAC* equipment means any device, component which is part of a *HVAC* system). The *HVAC MCC* and *HVAC CC* are part of *HVAC* system. Therefore they shall be de-energized from the switchboard(s) which supplies(y) them.

Each general emergency push button shall be provided with one normally closed contact and one normally open contact. The normally-closed contacts of the general emergency push buttons must be hardwired in series.

The general emergency push button loop shall be hardwired to relay(s). The free voltage contacts of the relay(s) shall be wired to the switchboard(s).

An engraved red label shall be fixed near each general emergency push button, with the following marking: "HVAC PLANT ROOM GENERAL SHUT-DOWN".

An engraved tagging plate (*HVAC PLANT ROOM* general emergency push button tag number) shall be fixed on each general emergency push button.

3.1.2 Equipment individual emergency push button

A dedicated emergency push button shall be installed for each of the following *HVAC* equipment:

HVAC equipment	Remark
Air cooled condenser	
Air cooled condensing unit	
<i>AIR HANDLING UNIT</i>	
Boiler without combustible	
<i>CHILLED WATER UNIT</i>	
Cooling tower	
Dry cooler	
<i>FAN UNIT</i>	
<i>HVAC CC</i>	
<i>HVAC MCC</i>	
Pressurization system	Applicable to water pressurization systems equipped with pump(s)
Pump	Applicable for pump having a motor rated ≥ 5.5 kW
Refrigerating unit	
Water cooled condensing unit	

Action of each individual emergency push button is:

- To stop the *HVAC* equipment associated to the individual emergency push button
- To stop the *HVAC* equipment associated to the equipment tripped by the individual emergency push button, in case of the de-energization of this last leads to damage or/and dangerous situation for people, on associated equipment.

Each general emergency push button shall be provided with one normally closed contact and one normally open contact.