

GENERAL SPECIFICATION

Field Operations

GS EP EXP 201

Maintainability & Inspectability criteria at project phase

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1. Scope

In order to achieve the required operational efficiency, it is necessary to anticipate the maintenance and inspection requirements at project phase.

This General Specification aims at defining maintainability and inspectability criteria, both technical and process, which are necessary to ensure the installations integrity and operability throughout their life.

Present General Specification is intended to be used:

- By the Company multidisciplinary team in charge to manage and/or execute the Maintenance and Inspection activities at project phase.
- By Contractors mandated by Company project Groups, to realize the Maintenance and Inspection studies.

Present General Specification is applicable to all development studies for new facilities or extensions to existing facilities.

Present General Specification is intended to be used in all project phases, starting from conceptual phase up to the transfer to operations.

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
EN 13306	Maintenance - Maintenance terminology

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 ECP 103	Process design criteria
GS EP ELE 001	Electrical design criteria
GS EP ELE 364	Electrical installations

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GS EP EXP 213	Minimum maintenance requirements
GS EP EXP 311	Plant integrity - Minimum inspection requirements
GS EP EXP 407	Safety and Environment Critical Elements management in the CMIMS and OIAVS
GS EP MEC 292	Rotating Machines Packages - Installation Requirements
GS EP PVV 107	Piping Stress Analysis
GS EP PVV 111	Piping design specification
GS EP SAF 351	Escape, evacuation and rescue from fixed installations
GS EP SAF 261	Emergency Shutdown and Emergency De-Pressurisation (ESD & EDP)
GS EP STR 002	Crane for fixed offshore installations
GS EP STR 003	Crane for floating offshore installations
GS EP STR 005	Lifting Appliances other than cranes and winches
GS EP STR 006	Requirements for the design, fabrication and testing of Overhead Travelling Cranes

3. Terminology

Maintainability: Ability of an item under given conditions of use, to be retained in, or restored to, a state in which it can perform a required function, when maintenance is performed under given conditions and using stated procedures and resources ([EN 13306](#)).

Maintainability is more generally the ease with which an installation can be maintained, inspected and/or tested during its entire life cycle and at the lowest cost.

Note: In the above definition, and in the context of the present General Specification, the term maintainability is understood to also include the ability to permit inspection of equipment, named by extension inspectability.

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4. Generalities

4.1 Specification purpose

The purpose of the present specification is to define the maintainability and inspectability criteria to be considered throughout the project process.

This document applies to all Company Projects and operated installations. It is intended to be used, starting from early phase of Engineering up to the transfer to Operations, by:

- The Company multidisciplinary team in charge of managing and/or executing the project Field Operation activities.
- Contractors mandated by Company Project Groups, Engineering Procurement Construction (EPC) as well as Maintenance & Inspection Engineering Contractors (MIEC).
- And more generally, all parties involved in or in charge of:
 - The project design, coordination or supervision.
 - The project basic and detailed engineering, the specification, selection or purchase of materials and equipment, the construction, installation, Factory Acceptance Test, pre-commissioning and/or commissioning of the installations.
 - The supply of equipment or services (Vendors).
 - The operations preparation including the maintenance & inspection engineering, baseline surveys and start-up of the facilities.
 - It ultimately aims at checking and ensuring that maintainability and inspectability criteria are met, thus assuring the required availability and integrity of the facilities throughout their operational life.

4.2 Nature of maintainability and inspectability criteria

The maintainability and inspectability criteria cover technical, process and economic aspects. They include requirements to ensure that the asset design and organization comply with the required production availability level, the maintenance and inspection strategies and concepts resulting from the Operating Philosophy, the shutdown strategy and the applicable standards and rules (legal requirements, Company HSE standards, etc.).

5. General studies

The objectives of maintainability and inspectability studies are:

- To verify that all HSE aspects are met, in particular that all maintenance and inspection works can be safely performed during the life cycle of the assets.
- To review and guide the decisions on project design and general installations conception with regard to their impact on the maintainability and inspectability aspects.
- To identify and propose corrections, improvements, alternative to installation conception principles in order to be compliant with all operational, maintenance and inspection requirements.