



Exploration & Production

GENERAL SPECIFICATION

FIELD OPERATION

GS EP EXP 153

Requirements for Production Operating Manuals
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1. Applicability

This specification applies to all projects managed by Total E&P, its operating affiliates and to companies of which Total is a shareholder and which have decided to apply the Total E&P general specifications.

This specification applies to new projects, field development or plants. It is not retroactive but applies to major modifications of existing installations.

2. Scope

This General Specification defines the contents and the presentation of Field Production Operating Manuals.

3. Purpose

The purpose of the Field Production Operating Manuals is to provide understanding of how the FACILITIES operate in detail, and to guide the production personnel in their operations.

The Operating Manual may also be used as a support for training the production teams before first start-up, in the context of participation in commissioning operations or for induction training for new personnel arriving on SITE. It must be written with the maximum of legibility, precision, accuracy, illustrations and drawings.

4. 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
Not applicable	

Professional Documents

Reference	Title
Not applicable	

Regulations

Reference	Title
Not applicable	

Codes

Reference	Title
Not applicable	

Other documents

Reference	Title
Not applicable	

Total General Specifications

Reference	Title
GS EP EXP 103	Pre-commissioning and commissioning specification
GS EP EXP 501	Equipment and piping numbering
GS EP INS 134	Design and supply of integrated control and safety system

5. Definitions

The terms used in this Specification shall have the following meanings (for the acronyms, refer to **Appendix 1**):

- **COMPANY** means TOTAL or a TOTAL Subsidiary in charge of operating the production facilities on a (several) particular SITE(s).
- **FACILITIES** means the existing or new installations for which the Operating Manual is produced.
- **OPERGUID™** means the TOTAL Corporate methodology for producing operating Procedures. OPERGUID™ is a proprietary registered trademark of TOTAL.
- **PROJECT** means the **COMPANY** organisation in charge of developing new **FACILITIES** on behalf of **COMPANY**.
- **CONTRACTOR** means the service Contractor in charge of producing the Operating Manual.
- **SITE** means the location or the **FACILITIES**.
- **SITE OPERATIONS** means the **COMPANY** entity in charge of operating the **FACILITIES**.
- **WORK** means the work to be performed by **CONTRACTOR** for producing the Operating Manual.
- **VENDOR** means supplier of materials/equipment used in the construction of **FACILITIES**.

6. General Overview of the Operating Manual

6.1 Contents and users

The Operating Manuals are intended in particular for:

a) Any member of field production in charge of the operation, control and monitoring the FACILITIES, who shall find in it:

- The general description of the FACILITIES;
- The description of the safety systems, their logic and their configuration;
- The procedures to be followed to start up and shut down all or part of the FACILITIES;
- The parameters to be monitored in operation;
- The parameters of the safety settings;
- The design characteristics of all equipment in place on the FACILITIES.

b) Anyone who wishes to obtain general information on the relevant FACILITIES, including:

- geographical and geological situation,
- development history,
- essential characteristics of the processes and equipment installed.

Note: the Field Production Operating Manuals do not cover the maintenance activities to be performed by the maintenance teams.

6.2 Structure

6.2.1 Breakdown into “books”

The Operating Manual shall always be divided into at least two books:

- Book 1: Description of the FACILITIES (c.f. section 7.1);
- Book 2: Operation of the FACILITIES (c.f. section 8.2).

Each book is structured in parts and chapters according to the same plan corresponding to the functional breakdown of the FACILITIES.

6.2.2 Breakdown according to general FACILITIES layout

For large FACILITIES the Operating Manual shall be split into parts, corresponding to geographical (layout) and / or functional considerations, such as:

- On shore / off shore FACILITIES;
- Platforms, or groups of platforms;
- Different SITES;
- Topsides, Hull and Subsea for a FPSO.

The breakdown into parts is specific to the FACILITIES. The scope of each part shall be defined or approved by COMPANY at the beginning of the WORK.

6.2.3 Breakdown into Chapters

Each part is broken down into chapters corresponding to the functional breakdown of the FACILITIES.

The title and numbering of chapters shall be the same for all the books, even if some chapters for Books 2 chapters are to be left void.

In addition Book 1 shall contain introductory chapters as follows:

- One general introduction for the whole Operating Manual;
- One introduction for each part.

The table titled "System and sub-system codes" in Appendix 2 of specification GS EP EXP 501 "Equipment and piping numbering" gives a typical breakdown of functions into systems and sub-systems. It shall serve as a reference for organising the breakdown into chapters (for the definition of systems and sub-systems, refer to specification GS EP EXP 103 "Precommissioning and commissioning specification", section 6).

For large systems, it shall be useful to split them into several chapters (e.g.: the oil production system that can be usefully split further: Wells, Separation, Metering and Export).

Depending on the size and complexity of the various systems comprising the FACILITIES, chapters may correspond to: several systems,

- one system,
- one sub-system,
- an even to particular pieces of equipment.

Note: The systems, sub-systems and equipment are listed in specification GS EP EXP 501 Appendix 2. Those that do not exist in the FACILITIES shall be omitted from the Operating Manual.

The breakdown into Chapters shall be validated by the production COMPANY representative.

Operating Manual formats

The Operating Manual shall be presented in two formats:

- Paper format;
- Interactive format.

6.3 Paper format

The paper format shall be presented in folders, with at least one folder for each book. It shall include in addition to the text the following lists, as a minimum:

- the drawing list,
- the main equipment list,
- the PSV, Safety shutdown and blowdown valves lists.
- the safety threshold list,
- the safety logics.

For the paper format, it is recommended, that the Operating Manual drawings be presented in a separate drawing book, in order to facilitate the simultaneous reading of the text and drawings.

However, COMPANY may decide to include the drawings with books 1 and 2. In that case, the drawing shall be duplicated.

See **Appendix 2** for the recommended standard of presentation of the paper format.

The paper format shall be accompanied with the corresponding electronic files, for its full contents (text and drawings) under two formats:

- non modifiable, but printable format, such as “Acrobat”,
- native modifiable files, under “Word” for the text and “Autocad”, “Microstation” or “Toolbook” for the drawings.

The electronic files shall be supplied on CD-ROM or DVD supports.

6.4 Interactive format

6.4.1 Contents

The Interactive Operating Manual shall comprise as a minimum all the elements included in the paper format.

- the pages of text, including the general table of contents, and the section summaries;
- the drawings;
- the lists.

The interactive Operating Manual shall, unless decided otherwise by COMPANY, include the following additional elements that are not included in the paper format:

- Photographs,
- ICSS workstations screens,
- PIDs and PDFs;
- Training modules, in relation with the contents of the Operating Manuals, such as: working principles with fundamentals and theory; technology and application to particular pieces of equipment and their operation (refer to Appendix 3 for a list of possible training modules).

CONTRACTOR shall check with COMPANY the list of training modules to be included if any.

6.4.2 Functional requirements

The main functional requirements are as follows:

- **Hypertext links**

The pages for the table of contents, the section summaries, the lists, the text, and the drawings shall be linked as appropriate through hypertext links. They shall all contain active zones that produce a programmed action when the user triggers them, such as:

- display of a drawing, chaining from one drawing to another one,
- display of a pop-up window with data on particular pieces of equipment,
- jump to a particular part of the text...

The triggered links shall be highlighted by flashing or other means.

It shall be possible to view the drawings as they stand, on screen and to read the text at the same time.

In the text, any equipment or instrument tag shall be linked to a drawing.

- **Simulation**

The Interactive version shall include the simulation of the Process and Emergency Shutdowns, with the consequences shown on both the Safety Logic Diagrams and on the Process drawings in a similar way as on the ICSS workstations.

- **Detailed requirements**

The requirements for the interactive version are given in **Appendix 4**.

- **Mock-up**

A mock-up of the interactive format, implementing the functional requirements shall be supplied to COMPANY for approval at the start of the production of the interactive format.

6.4.3 Mode of access and packaging of the Interactive format

COMPANY shall decide on the modes of access to the Operating Manuals by the users, and on the corresponding packaging, as follows:

- CD-ROM interactive format.

CD-ROM shall work on users' personal workstations. They shall be auto start and shall not require any installation procedure.

- Network interactive format.

The Network interactive format is installed on COMPANY servers by its IT personnel. Access rights to the Network Operating Manuals is decided by COMPANY.

It is strongly recommended to integrate as many documents as possible of the Operating Manual within the Electronic Data Management System (EDMS) of COMPANY.

In addition the Operating Manual shall be structured in such a way that specific links shall be available to call up the active and most up to date documents used by SITE OPERATIONS (eg: P&ID's, ESD diagrams, ... etc).

- Intranet / WEB interactive format.

The Intranet / WEB interactive format is installed by COMPANY on its intranet WEB servers by its IT personnel. Access to the Operating Manual on the WEB is granted in accordance with COMPANY policy, and implemented by COMPANY IT personnel.

Note: the Network / Intranet / WEB interactive format(s) shall be packaged by the CONTRACTOR, by use of a packaging software to be approved by COMPANY.

The CONTRACTOR shall, at the start of the WORK, clarify with COMPANY the packaging format(s) to be implemented.

6.4.4 Updating

The interactive format of the Operating Manual shall be such that updating of minor modifications can be done by COMPANY.

Refer to **Appendix 7**.

7. Contents requirements

7.1 Book 1 - Description of the FACILITIES

7.1.1 Book 1 Contents

The contents and structure of book 1 chapters depend on their purpose or on the nature of the systems described. The following chapter / system typology is considered:

- Introduction chapters: the general introduction and the parts introduction, if applicable;
- Process and utility chapters;
- Other chapters as listed in section 7.1.4 below.

The general contents of the various chapters is given in the following sections.

7.1.2 Introduction chapters

- **General introduction**

The general introduction shall contain basis data and information:

- Geographical location;
- Description of the interfaces, if any, with other installations and/or other fields outside the Operating Manual battery limits;
- Development history;
- Reservoirs;
- Summary description of the FACILITIES;
- Operating philosophy, main "Safety Concept" topics and derogations granted to the project.

- **Installation layout breakdown (parts) introductions**

For FACILITIES broken-down into several parts for the purpose of the Operating Manual, each part shall contain a specific introduction including:

- the location,
- the list and summary descriptions of the systems,
- the process links with the other parts.

7.1.3 Process chapters

For the chapters corresponding to the process sub-systems, other than those listed in section 7.1.4 hereafter, the following points shall be covered (refer to Specifications GS EP EXP 103 for the definition of systems and sub-systems and to GS EP EXP 501 for the overall list of systems and sub-systems):

- **Location:** position of the system on a plot plan,
- **Objective(s)**
- **Criticality** of the system or subsystem, based on the estimation of the consequences of its failure on Production and on HSE.
- **Description** of the system or subsystem, including:
 - An overall description;
 - For each piece of equipment comprising the system or subsystem: the description of the design and/or process, the description of the fluid circulation, the description of the safety loops, the corresponding protections;
 - For wells: the section, the completion, well bore-formation interface, drilled levels, well heads, safety control panels.
- **Description** of the control systems and integration of the functional analyses key points;
- **Data tables** for each piece of equipment:
 - For equipment: manufacturer, type, weight, material, calculation conditions, operating conditions, characteristic curves, efficiency;
 - Command control equipment: inventory of remote indicators and meters, Control loops, control valves, Remotely operated valves (ROV, HCV, MOV)
 - Safety equipment: inventory of transmitters, safety valves, pressure safety valves, together with their technical data (with their level of availability and reliability if specified in the design).
- **Reference documents:** list of the documents (number, revision, title) of the documents that have been used for writing the chapter.

Note: a full consistency shall be insured between the text and the Operating Manual drawings. Any equipment or instrument tag mentioned in the text shall be found in the drawings and reciprocally.

7.1.4 Other Chapters

The following chapters (listed below as per their order in GS EP EXP 501, Appendix 2), have each a particular contents and organisation. The following detail the typical contents for each of them:

- Safety/Evacuation equipment: