

GENERAL SPECIFICATION

ELECTRICAL

GS EP ELE 091

Minimum Contractor document requirements

04	10/2012	Update for CCFT
03	01/2011	Modifications as marked
02	10/2008	Minor Updates & requirements of IEC 60079-14 § 4.2
01	10/2005	Review in accordance with GS EP ELE 460 - Addition of "EP" root to GS identification
00	12/2003	First issue
Rev.	Date	Purpose of the revision

Owning entity: DEV/TEC	Managing entity: DEV/TEC/ELE
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1. Scope

This document is intended to list the documents to be prepared and issued by the Contractor for Company review or approval.

The list is not intended to be exhaustive and any document necessary for the complete execution of the Basic Design and/or Detailed Engineering as applicable shall be prepared by the Contractor and be made available for Company review.

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

Reference	Title
IEC 60079-14	Electrical apparatus for explosive gas atmospheres - Part 14:
	Electrical installations in hazardous areas (other than mines)
IEC 62402	Obsolescence management - Application guide

Total General Specifications

Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published in the applicable yearly collection.

Reference	Title
GS EP ELE 460	Engineering Studies

3. Abbreviations

CCFT: Compensated Call For Tender

EPC: Engineering, Procurement and Construction

4. Legend

Class 1 for Approval

Contractor may not proceed until written comments have been given by Company.

Class 2 for Review

Contractor may proceed if Company has made no comment after contractual response time by Company.

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Class 3 for Reference Only

Company reserves the right to comment but Contractor may continue his work.

Contractor is required to mark each document issued with a stamp for "Documentation Class" and to enter the appropriate Class Number. Where the assignment of a particular class is in doubt, Contractor shall refer to Company for agreement.

5. List of documents required

Document	Basic Design	CCFT Basic	Detailed Design/ EPC	As built	Class
Electrical Deliverable List	X	X	X		1
Basis of Electrical System Design, Protection and Control Philosophy	X	X	X		1
Electrical Consumer List and Load Balance	X	X	X	X	2
Electrical Equipment List (including equipment heat dissipation calculated value)	X	X	X	X	2
Cable Schedule	X	X Main	X	X	2
Project Particular Specifications	X	X Main	X		1
Equipment Data-Sheet	X	X Main	X	X	1
Long Lead Item Specifications, Data-Sheets, Requisition	X	X	X		1
Long Lead Item Technical Bid Evaluation	X	X			1
Electrical Equipment Requisition			X		1
Electrical Equipment Technical Bid Evaluation			X		1
Single line Diagrams	X	X	X	X	1
Typical Protection Diagrams	X	X	X		1
Interlocking and Inter-tripping Diagrams (including mechanical key interlocks diagrams)	X		X	X	1
Logic Diagrams (including Automatic Transfer Diagrams)	X Typical		X	X	1
HV & LV Typical Schematic Diagrams	X	X			1
HV & LV Schematic Diagrams			X	X	2

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Document	Basic Design	CCFT Basic	Detailed Design/ EPC	As built	Class
Switchgear and distribution board schedule	X		X		2
Interconnection Wiring Diagrams			X	X	2
Trouble Shooting Diagrams			X	X	2
Load Shedding Specification	X		X		1
Black Start Specification/Procedure	X Spec	X Spec	X Proc	X Proc	1
Electrical Control System Design Specification and relevant documents (exchange tables, Architecture, etc.)	X	X	X	X	1
Sizing of Equipment	X	X	X		1
Electrical I/O list	X		X	X	1
VDU Graphic Displays Requirements			X		1
Load Flow and Short-Circuit Calculation	X	X	X		1
Motor Starting Study	X	X	X		1
Dynamic Stability Study	X	X	X		1
Governor and AVR models and transfer function block diagrams	X	X	X		2
Start-up and ramp-up simulation	X		X		1
Cable Sizing Calculation note and Charts	X	X	X		1
Harmonic distortion studies	X	X	X		1
Selectivity Study and relay setting booklets for AC and DC systems			X	X	1
Earthing Grid Sizing Note	X (onshore site only)		X		1
Lightning Protection study & Risk Analysis	X (onshore site only)		X		1
Substation Location drawings and main cable routings	X	X	X	X	2
Substation Layout	X	X	X	X	2
Cable routings and routing cross sections including cable transit schedule/arrangement			X	X	2

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Document	Basic Design	CCFT Basic	Detailed Design/ EPC	As built	Class
Electrical Installation Works Specification			X		2
Heat tracing System documents			X	X	2
Bulk Material Specifications (lighting fixtures, Junction Boxes, Control Stations, Cable Glands, MCTs, etc.).			X	X	2
Cable and Cable Trays Requisition			X	X	3
Bulk Material Requisition			X		3
Typical Installation Standard drawings (Earthing, Power, Lighting, control)	X	X			1
Detailed Installation Standard drawings (Earthing, Power, Lighting, control)			X	X	2
Earthing and Lightning Layout	X Main		X Detailed	X	2
Lighting and socket layout			X	X	2
Lighting circuit diagrams			X	X	2
Lighting Calculation note			X		2
External Grid Connection Study (if applicable)	X	X	X		1
Material Take Off			X		3
Inspection and Test Plans			X		2
Electrical System Operating Manuals			X	X	1
Vendor Documentation			X		2
Manufacturer's drawings			X	X	2
Verification Dossier as per the requirement of IEC 60079-14 § 4.2			X	X	1
Electrical Equipment Obsolescence Dossier (Plan and mitigation measures in place, Lifecycle of equipment and components, etc.)			X	X	1

6. Other references

Following documents are applicable: Standard [IEC 62402](#) for Obsolescence Management and [GS EP ELE 460](#) for further detailed requirements on studies and documentations.