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Guidance on Industry Standard for Procurement of Control Systems - General

GIS 30-491

BP GROUP
ENGINEERING TECHNICAL PRACTICES

Foreword

This is the first issue of Engineering Technical Practice (ETP) BP GIS 30-491. This Guidance on Industry Standard (GIS) is based on parts of heritage documents from the merged BP companies as follows:

BP

1400-20-IC-LI-5301 Process Control System and Human-Machine Interface Equipment Selection List.

British Petroleum

GS 112-17 Guidance for Specification Power Supplies for Electronic Equipment.
GS 130-3 Pre-Delivery Testing and Inspection of Instrumentation and Control Systems.
GS 130-8 Guidance for Specification of Control Systems.
GS 130-8 Guidance for the Supply of Control Systems.

Amoco

PTA AD-PEP-00-G Administration—PTA Engineering Practices—Guide.
PTA PC-DCS-00-P Process Control—DCS—Supply Specification.
PTA CO-PCOM-00-G Commissioning—Pre-Commissioning—Guide.
A PC-PCOM-GEN-E Process Control—Pre-Commissioning—General—Engineering Specification.

ARCO

Std 3 Project Closeout Documentation.
Std 26 Spare Parts Requirements.

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1. Scope

This GIS provides general guidance for vendor proposal, inspection, testing, shipping, and support of control systems.

This GIS contains general guidance that should be used along with other process control GISs.

This ETP may refer to certain local, national, or international regulations, but responsibility to ensure compliance with legislation and any other statutory requirements lies with user.

User shall adapt or supplement this document to ensure compliance for specific application.

2. Normative references

The following normative documents contain requirements that, through reference in this text, constitute requirements of this technical practice. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this technical practice are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies.

GP 30-49

Guidance on Practice for Control System Documentation.

3. Symbols and abbreviations

For the purpose of this GIS, the following symbols and abbreviations apply:

AdCon	Advanced control applications.
AI	Artificial intelligence.
CAD	Computer aided design.
D/A	Digital to analogue.
DBMS	Database management system.
DHS	Data historian system.
FAT	Factory acceptance test (or testing).
FS	Functional specification.
I/O	Input/output.
MAC	Main automation contractor.
MIV	Main instrument vendor.
MSDS	Material safety data sheet.
PLC	Programmable logic controller.



QA	Quality assurance.
SAT	Site acceptance test (or testing).

4. General

4.1. Vendor responsibility

- a. Vendor shall be responsible to fulfil requirements of all associated referenced documents.
- b. Vendor shall submit proposal for preferred method of PAS implementation that enables functions to be performed with required system availability and reliability.
- c. Vendor shall give consideration to proposal of alternative arrangements if significant cost savings or reduction in complexity or maintenance burden can be demonstrated with minimal penalty to specified system performance.

4.2. Main Instrument Vendor (MIV) or Main Automation Contractor (MAC)

For projects using the MIV or MAC concept, Vendor is responsible for hardware, software or services beyond the traditional scope of supply of the basic control system hardware. This scope of supply includes some or all of the following hardware/services as defined by BP:

- a. Control system hardware.
- b. Operator training simulator.
- c. Safety instrumented system.
- d. Field instrumentation.
- e. Control valves.
- f. Process control network.
- g. 3rd party systems.
- h. Specialty instruments (e.g. analysers).
- i. Electrical equipment.
- j. Equipment and/or instrument sizing/selection.
- k. Procurement.
- l. Engineering.
- m. Construction.

4.3. General

PAS shall be latest field proven version marketed and supported by Vendor. Field proven is defined as at least 12 months of actual process control and monitoring operation in broadly similar operating environments. Proposed products that are not readily available at date of tender shall be clearly stated as such. Products with less than 12 months field proven duration shall include actual field proven duration broken down by component.

4.4. Control system selection

Control system selection shall be based on:

- a. Interface to PC servers and other computers.
- b. Ability to replace parts online.
- c. BP and other user experience with Vendor and control system.



- d. Cost to purchase, implement, and maintain.
- e. Vendor project management and service capabilities.
- f. Vendor field service and spare parts stocking facilities.
- g. Control system redundancy and security.
- h. Control system flexibility, ease of use, and expandability.
- i. Ease of getting to highest priority loops in alarm.
- j. Display and annunciation of critical alarms on separate CRT.
- k. Ease of access to loops in process upset conditions.
- l. Call up speed of complex graphics, groups, and trends.
- m. Ease of diagnosing and correcting system problems, including system components, software, networks, cable systems.
- n. Control system process control capabilities.
- o. Openness of architecture (non-proprietary).
- p. Use of commercial-off-the-shelf (COTS) components.
- q. Vendor expertise in process control strategy and design.
- r. Control system maintainability.
- s. Adequacy of algorithms.
- t. Compatibility of control system with existing equipment.
- u. Floor space and environment required.
- v. Warranty provisions.
- w. Use of latest technology.
- x. Time system has been field proven.
- y. Vendor commitment to long-term product support and development.
- z. Other criteria as identified by BP.

Vendor is encouraged to provide documentation for any above criteria.

4.5. **Conflicting requirements**

In case of conflicts, order of precedence shall be:

- a. Local codes and standards.
- b. Purchase order/requisition/contract.
- c. Project data sheet/drawings.
- d. This GIS.
- e. Referenced BP documents.

4.6. **Quality assurance**

- a. Services and materials shall be provided in accordance with quality assurance program that ensures compliance with main contract or purchasing document, including items provided under subcontracts.
- b. Vendor shall comply with the following general requirements and be prepared to demonstrate quality system to BP:

