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Guidance on Industry Standard for Large Demineralizer and Boiler Feed Water Systems

GIS 60-141

BP GROUP
ENGINEERING TECHNICAL PRACTICES

Foreword

This is the first issue of Engineering Technical Practice (ETP) BP GIS 60-141. This Guidance on Industry Standards (GIS) is based on parts of heritage documents from the merged BP companies as follows:

Amoco

A FE-BFW-TRTG-E	Fabricated Equipment Boiler Feedwater Treating Equipment Engineering Specification
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This GIS covers general requirements for design and specification of purification equipment used in Demineralizer Systems. It includes use of clarification equipment, pressure filters, ion exchange equipment, hot lime softeners, chemical feed equipment, lime systems, coagulant systems, acid



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systems, caustic systems, brine systems, and other chemical systems. It does not address all safety requirements for dealing with chemicals used in boiler feedwater treatment. It does not cover use of RO, UF, flash evaporation, or EDI processes.

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.

American Petroleum Institute (API)

API Spec 12D	Specification for Field Welded Tanks for Storage of Production Liquids
API Spec 12F	Specification for Shop Welded Tanks for Storage of Production Liquids
API Std 650	Atmospheric Storage Tanks

American Society of Mechanical Engineers (ASME)

ASME Boiler and Pressure Vessel (BPVC)	
Section VIII	Rules for Construction of Pressure Vessels, Division I

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GP 4-20	Guidance on Practice for Civil Engineering
GP 6-10	Guidance on Practice for Corrosion Protection Management Guidelines
GP 6-60	Guidance on Practice for Onshore and Offshore Paints and Coatings
GP 6-63	Guidance on Practice for Internal Coating of Equipment and Piping
GP 12-20	Guidance on Practice for Motors
GP 12-40	Guidance on Practice for Heat Tracing
GP 12-45	Guidance on Practice for Electrical for Packaged Systems
GIS 12-201	Guidance on Industry Standard for IEC Low Voltage Induction Motors
GP 18-01	Guidance on Practice for General Requirements for Welded Fabrication
GP 30-20	Guidance on Practice for Miscellaneous Field Instruments
GP 30-25	Guidance on Practice for Field Instrument – General
GP 30-65	Guidance on Practice for Control Panels
GP 30-70	Guidance on Practice for I & C in Vendor Packaged Equipment
GIS 30-402	Guidance on Industry Standard for Programmable Logic Controllers (PLC) Procurement
GP 36-10	Guidance on Practice for Engineering Guidance on Materials Selection
GP 34-00	Guidance on Practice for Machinery



GIS 34-201	Guidance on Industry Standard for Centrifugal Pumps (API 610)
GIS 34-212	Guidance on Industry Standard for Control Volume Pumps (API 675)
GIS 34-403	Guidance on Industry Standard for Agitators
GP 36-10	Guidance on Practice for Engineering Guidance on Materials Selection
GP 40-10	Guidance on Practice for Structural Skids and Skid Mounted Units
GP 42-10	Guidance on Practice for Metallic Piping Systems ASME B31.3
GP 43-22	Guidance on Practice for Above ground Facilities - Onshore PLs
GP 44-70	Guidance on Practice for Over Pressure Protection Systems
GP 44-80	Guidance on Practice for Design Guidelines for Relief Disposal Systems
GP 46-01	Guidance on Practice for New Pressure Vessels
GIS 46-020	Guidance on Industry Standard for Vessels Standard Fabrication Details
GP 52-10	Guidance on Practice for Thermal Insulation
GP 58-10	Guidance on Practice for Design of Welded Steel Tanks for Oil Storage to API 650
GIS 58-301	Guidance on Industry Standard for Procurement of Field and Shop Welded Tanks for Storage of Production Liquids to API 12D and F
GP 60-50	Guidance on Practice for General Issues – Equipment Packages
GIS 60-121	Guidance on Industry Standard for Coarse and Raw Water Filter Package
GIS 60-141	Guidance on Industry Standard for Demineralized Water Production Package

3. Symbols and abbreviations

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

BFW	Boiler Feedwater
EDI	Electro Deionization Reversal
ID	Inside Diameter
mA	Milliampere: one thousandth of an ampere
MAWP	Maximum Allowable Working Pressure
NPS	National Pipe Straight Threads Standard
NPSH	Net Positive Suction Head
RO	Reverse Osmosis
UF	Ultra filtration

