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NATIONAL IRANIAN OIL REFINING & DISTRIBUTION COMPANY
NATIONAL IRANIAN OIL ENGINEERING
& CONSTRUCTION COMPANY

NIOEC SP

NIOEC SPECIFICATION FOR PIPELINE VALVES

FIRST EDITION

OCT. , 2005

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IN THE NAME OF GOD**FOREWORD**

By their very nature, technical Specifications are continuously subject to modifications and revisions. To strengthen their merit and usefulness, continuous improvements, addendum, deletion of disparate information and consequently provision of updated revisions are to be made in order to ascertain that such Specifications meet the current requirements, inclusive of Iranian Petroleum Standards (IPS) and the recognized and acceptable national and international Standards, as well as the optimal codes and practices based on the accumulated in-house know-how and plant knowledge and experiences.

However, in reality, due to several reasons, not to mention the complexity of the matter, the ultimate goal of continuous direct embedment of the required changes on the relevant Specifications may be far reaching. Therefore, in the interim periods between the officially issued revisions, the required changes will appear in other documents related to the engineering and design work of the ongoing projects.

In response to the initiative of the Design and Engineering Directorate, and considering that the task of the execution of several important and mega projects for the realization of the new oil refineries, pipelines and oil terminals as well as improvements of the existing facilities, has been assigned to NIOEC, it was decided to update the NIOEC Specifications and to issue new official revisions.

The Design and Engineering Directorate was itself entrusted to carry out this important task, and as such by forming several special technical committees, working in close co-operation and cohesion and sharing their expertise and knowledge, the updated and revised NIOEC Specifications were successfully prepared and complied.

These Specifications are intended to be used for Oil Refineries, Distribution Depots, Oil Terminals, Pipelines and Pump Stations within NIOEC's projects, and have been proven to be of high value for such purposes. It must however be appreciated that these Specifications represent the minimum requirements and should in no way be interpreted as a restriction on the use of better procedures, engineering and design practices or materials.

We encourage and highly appreciate the users and other clear sighted and experts to send their comments on the Specifications to the Design and Engineering Director of NIOEC for evaluation and approval.

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NOTES:

- 1) THIS SHEET IS A RECORD OF ALL REVISIONS TO THIS SPECIFICATION.
- 2) WHEN APPROVED EACH REVISION SHALL BE CONSIDERED AS A PART OF THE ORIGINAL DOCUMENT.
- 3) NUMBER OF PAGES EXCLUDES THIS SHEET AND THE COVER SHEET.

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INTRODUCTION

To satisfy the requirements of this NIOEC Specification, Iranian Petroleum Standard IPS-M-PI-110(1) (Aug. 2014) with the modifications as specified herein after shall be strictly followed.

Articles 0 and 1 of this document replace entirely with the related articles in the referenced IPS Standard.

1. GENERAL

1.1. SCOPE

This NIOEC Specification covers the minimum requirements for design, dimension, material, test, inspection and shipment of pipeline valves to be installed in oil and petroleum products pipeline services suitable for pig passage.

The IPS standard with mentioned modifications contains seven parts. Each enquiry consists of two parts; part one general requirements and the other part pertaining to requirements for one of the following valves:

Part 1	General requirements
Part 2	Gate valves
Part 3	Globe valves
Part 4	Plug valves
Part 5	Butterfly valves
Part 6	Check valves
Part 7	Ball valves

Valves contained in this Standard have end connections as follows:

- Flanged end
- Butt welding end
- Socket welding end
- Threaded end
- Special end

Deviations from this Specification will only be permitted on obtaining written approval from NIOEC.

Resolution on cases not explicitly stipulated in this Specification, or on cases where conflicts may arise among the requirements of the referenced/relevant IPS and the international standards, shall be made through written consent and approval of NIOEC.

1.2. REFERENCES

The following standards, codes, and specifications, to the extent specified hereinafter, shall constitute a part of this NIOEC Specification. Latest edition of the undated referenced documents and the cited edition of the dated references shall apply. The applicability of changes made to the dated references ,after the cited date shall be mutually agreed upon between NIOEC and the vendor/contractor.

ASME (AMERICAN SOCIETY OF MECHANICAL ENGINEERS)

ASME B 1.20.1	"Pipe Threads, General Purpose"
ASME B 16.1	"Cast-Iron Pipe Flanges and Flanged Fittings"
ASME B 16.4	"Cast-Iron Threaded Fitting"

ASME B 16.5	"Pipe Flanges and Flanged Fittings"
ASME B 16.10	"Face-to-Face and End-to-End Dimensions of Valves"
ASME B 16.11	"Forged Fittings, Socket Welding and Threaded"
ASME B 16.15	"Cast Bronze Threaded Fittings"
ASME B 16.24	"Cast Copper Alloy Pipe Flanges and Flanged Fittings"
ASME B 16.25	"Butt Welding Ends"
ASME B 16.34	"Valves-Flanged, Threaded and Welding End"
ASME B 16.42	"Ductile Iron Pipe Flanges and Flanged Fittings"
ASME 16.47	"Large Diameter Steel Flanges (Nominal Pipe sizes 26 Through 60) ASME B 31.1 "Power Piping"
ASME B 31.3	"Chemical Plant and Petroleum Refinery piping"
ASME B 31.4	"Liquid Transportation System for Hydrocarbon, Liquid Petroleum Gas, Anhydrous Ammonia and Alcohol"
ASME B 31.8	"Gas Transmission and Distribution Systems"
ASME B 36.10	"Welded and Seamless Wrought Steel Pipe"
ASME Sec VIII Division 1	"Rules for construction of pressure vessels"
ASME Sec IX	"Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing Operators"

ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)

ASTM A 435	"Standard Specification for Straight-beam ultrasonic examination of steel plates"
ASTM B 650	"Standard Specification for Electrodeposited Engineering Chromium Coatings on Ferrous Substrate"
ASTM B 656	"Standard Guide for Autocatalytic (Electroless) Nickel-Phosphorus Deposition on Metals for Engineering Use"
ASTM E 112	"Standard Test Methods for Determining Average Grain Size"
ASTM E 446	"Standard Reference Radiographs for Steel Casting up to 2in. in Thickness"

API (AMERICAN PETROLEUM INSTITUTE)

API 594	"Check Valves: Wafer, Wafer-Lug and Double Flanged Type"
API 598	"Valve Inspections and Testing"
API 599	"Metal Plug Valves-Flanged and Welding Ends"
API 600	"Steel Gate Valves, Flanged and Butt Welding Ends, Bolted and Pressure Bonnets"
API 602	"Compact Steel Gate Valves-Flanged, Threaded, Welding and Extended Body Ends"
API 603	"Class 150, Cast Corrosion-Resistant, Flanged end Gate Valves"

API 605	"Large-Diameter Carbon Steel Flanges"
API 607	"Fire Test for Soft-Seated Quarter-Turn Valve"
API 608	"Metal Ball Valves-Flanged and Butt-Welding Ends"
API 609	"Butterfly Valves: Double Flanged, Lug and Wafer Type"
API 6D	"Pipeline Valves (Gate, Plug, Ball and Check Valves)"
API 6FA	"Fire Test for Valves"

BSI (BRITISH STANDARDIZATION INSTITUTE)

BS 1133	"Packaging Code"
BS 1868	"Specification for Steel Check Valves (Flanged and Butt-welding Ends) for the Petroleum, Petrochemical and Allied Industries"
BS 1873	"Specification for Steel Globe and Globe Stop and Check Valves (Flanged and Butt-Welding Ends) for the Petroleum, Petrochemical and Allied Industries"
BSEN 1171	"Specification for Cast Iron Gate (Parallel Slide) Valves for General Purpose"
BS 5152	"Specification for Cast Iron Globe and Globe Stop and Check Valves for General Purpose"
BSEN 12334	"Specification for Cast Iron Check Valves for General Purpose"
BSEN 12288	"Specification for Copper Alloy Globe, Globe Stop and Check and Gate Valves"
BSEN 593	"Specification for Butterfly Valves"
BS 5157	"Specification for Gate (Parallel Slide) Valves for General Purposed"
BS 5159	"Specification for Cast Iron and Carbon Steel Ball Valves for General Purpose"
BS EN ISO 17292	"Specification for Steel Ball Valves for the Petroleum, Petrochemical and Allied Industries"
BS EN ISO 15761	"Specification for Steel Wedge Gate, Globe and Check Valves 50 mm and Smaller for the Petroleum, Petrochemical and Allied Industries"
BS EN ISO 10497	"Testing of Valves Specification for Fire-Type Testing Requirements"

IPS (IRANIAN PETROLUM STANDARD)

IPS-M-PI-110(1)	"Material and Equipment Standard for Valves"
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MSS (MANUFACTURERS STANDARDIZATION SOCIETY)

MSS SP-6	"Standard Finishes for Contact Faces of Pipe Flanges and Connecting End Flanges of Valves and Fittings"
MSS SP-25	"Standard Marking System for Valves, Fittings, Flanges and Unions"
MSS SP-44	"Steel Pipeline Flanges"

MSS SP-54	"Quality Standard for Steel Castings for Valves, Flanges and Fittings and Other Piping Components Radiographic Examination Method"
MSS SP-70	"Cast Iron Gate Valves, Flanged and Threaded Ends"
MSS SP-78	"Cast Iron Plug Valves, Flanged and Threaded Ends"
MSS SP-80	"Bronze Gate, Globe, Angle and check Valves"
MSS SP-81	"Stainless Steel, Bonnet less, Flanged Knife Gate Valves"
MSS SP-84	"Steel Valves, Socket Welding and Threaded Ends"

NACE (NATIONAL ASSOCIATION OF CORROSION ENGINEERS)

MR0175/ISO15156	"Materials for Use in H ₂ S-containing Environments in Oil and Gas Production"
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ISO (INTERNATIONAL STANDARD)

ISO 8501	"Preparation of steel substrates before application of paints and related products Visual assessment of surface cleanliness"
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NIOEC-SP (NIOEC SPECIFICATIONS)

NIOEC-SP-00-10	"NIOEC Specification for Units"
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1.3. UNITS

International system of units (SI) shall be used in accordance with NIOEC-SP-00-10, unless otherwise specified.

1.4. DEFINITIONS AND TERMINOLOGY

This section contains definitions for the terms as they are used in this document.

Through Conduit Valve: A pipeline valve with unobstructed and continuous cylindrical opening which is suitable for pigging.

2. MODIFICATION TO IPS-M-PI-110

This addendum revises the below listed articles of the referenced standard as follows:

Part One – General Requirements

2. Design (Modification)

2.21 to 2.24 (Additions)

Add the following paragraphs:

2.21 All pipeline valves shall be capable of repacking when operate at fully open position. Additional requirements for repacking shall be considered by manufacturer as defined by valve application. (such as stuffing box with required features)

2.22 The buried valves shall be equipped with extended stem and extended relief, sealant injection, and bleed tubing.

2.23 The body cavities shall be equipped with pressure relief system.

2.24 All required tests including pressure testing shall be performed as per API 6D.

3. Material (Modification)

3.6 to 3.8 (Additions)

Add the following paragraphs:

- 3.6 For valves with sizes 8 inch and over, internal trim parts (gate, ball, disc, seat, stem) shall be Electroless Nickel Plated (E.N.P. coated) or Corrosion Resistance Alloy (CRA). For sour services, the internal trim parts shall be CRA. The chemical process should provide corrosion resistance and low wear to the parts during operation. Approved corrosion resistant and hard overlays materials can be applied in the other critical sealing areas.
- 3.7 In case of corrosive services, sealing surfaces and other critical parts of the valve shall be overlay welded.
- 3.8 For metal seated and fire safe valves the following coating material shall be used for seats:
- i) Tungsten carbide or “stellite” powders applied with high velocity spray system.
 - ii) Hard version Electroless Nickel Plated (E.N.P.).

7. Finishing, Painting (and/or Coating) (Modification)

7.6 to 7.8 (Additions)

Add the following paragraphs:

- 7.6 The equipment shall be coated with suitable coats/paints (which) specified by manufacture. Upon NIOEC approval.
- 7.7 All unpainted surfaces (inside and outside) shall be coated with easily removable rust preventative that shall protect surfaces for a minimum of six months
- 7.8 The manufacturer may also recommend a superior method, which may be applied after NIOEC approval, on painting or coating system.

15 to 18 (Additions)

Add the following paragraphs:

15. FACTORY CONTROL

- 15.1 The following tests and inspections shall be performed on numbers of valves as specified in paragraph 15.2 herein after:
- 15.1.1 X-ray inspection of cast parts shall be carried out on minimum of four points in the critical areas. Acceptance standards shall be in accordance with ASTM E 446 and MSS SP54 item 4.1 for class 600 and lower, and item 4.2 for class 900 and higher.
- 15.1.2 Vendor shall perform a 100% inspection of all ends to be welded for a length of 100 mm minimum. The mentioned tests shall be carried out by means of X-rays for cast parts, or by means of ultrasonic tests for parts fabricated with pipe or plate. Acceptance standards are specified in MSS SP 54 item 4.2 and ASTM A 435.
- 15.1.3 Radiographic examination shall be made on all welds of valve pressure parts. Standard of acceptability shall conform to ASME, Section VIII div.1. For those welds that cannot be examined by radiographic, an ultrasonic examination shall be carried out.

15.2 The tests and inspections specified in paragraph 15.1 shall be performed as follows:

- For valves of sizes larger than 20": on each valve.
- For valves of sizes 2" to 20" inclusive: test 15.1.2 on each valve. Test 15.1.1 and 15.1.3: at least on two valves selected at random from each lot of ten valves of same size, class and heat number. If one of the two tested valves does not meet the specified standards requirements each and every valve of the lot shall be tested.

15.3 Surface defects such as indentations, scaling shall be removed provided that the wall thickness of the shell remains within the required tolerances. No repair is permitted without the authorization of the purchaser's inspector. Repairs by welding shall be performed by qualified welders. Filler metal for repairs shall have the same properties as the parent metal.

15.4 Welding procedure and welder qualifications shall be in accordance with the requirements of ASME section IX.

16. COORDINATION WITH OTHER SUPPLIERS

In case the equipment ordered should be mounted on, aligned, connected, adjusted or tested with the equipment of other manufacturer(s), the valve(s) supplier shall contact directly the said manufacturer(s) and supply and/or obtain all dimensional and technical information and arrange for any interconnecting equipment and combined tests that may be required.

The supplier shall be responsible of correct and timely communication with the said manufacturer(s) and for any delay and/or cost claims arising from such communications. Copies of all correspondents should be sent to the purchaser.

The name and address of the manufacture(s) will be given as soon as their orders have been confirmed.

17. SUPPLIERS RESPONSIBILITY CLAUSE

17.1 Data and information given herein are the minimum requirements.

17.2 Supplier is responsible for the safe design and proper operation of the system, or unit as a whole while adhering to basic requirements.

17.3 Any proposal changes, addition or omission shall be upon written consent of the purchaser.

18. DATA SHEET

The valve data sheet in APPENDIX A shall filled-in and submitted with quotation.

Part Two – Gate Valves

4. (Additions)

Add the following paragraphs:

4. THROUGH CONDUIT GATE VALVE

4.1 Body

4.1.1 Welded body Pipeline gate valve with a small body cavity and rectangular body configuration may be considered.

4.1.2 Welded body gate valves should be reinforced by special designed hoop ribs and side tie bars.

4.1.3 Welded Body shall be stress-relieved by loading it hydrostatically to more rated working pressure.

4.2 Gate

4.2.1 A one-piece wedge gate, as either a solid or flexible wedge design shall not be furnished as pipeline valve unless otherwise specified.

4.2.2 The slab gate should be aligned between the two floating seats and between the side guides which are part of the seats. This allows a good self-alignment.

4.3 Seat Sealing

4.3.1 Upstream and downstream sealing under all operating condition (full block and bleed capability) should be considered.

4.3.2 All resilient seated pipeline valves shall be equipped with secondary metal seats.

4.3.3 The valve soft seats shall be of PTFE or NYLON material.

4.4 Stem

4.4.1 Optional stem packing:

"C" type stem packing and seals shall be used for highly gasoline with MTBE and pure MTBE.

Part Six – Check Valves

4 (Additions)

Add the following paragraphs:

4. THROUGH CONDUIT CHECK VALVE

4.1 Body

4.1.1 The design of the check valve shall permit passing all types of pipeline pigs without any possibility of jamming the pig in the valve.

4.1.2 The body should be carefully designed so as to keep pressure drops to a minimum.

4.2 Cap

4.2.1 The body-to-cap flange may be circular. The connection sealing surfaces should be raised face or ring joint to suit the valve rating.

4.3 Disc

4.3.1 The valves shall be equipped with swing disc, suitable to be externally fixed in open position with wrench. Otherwise they be equipped with double valve bypass line.

4.4 Hinge Pin

4.4.1 The hinge pin should be centered in the body two threaded plugs and sealed by metallic gaskets.

4.4.2 The pin should be easily removable for maintenance of the valve.

4.5 Seat

4.5.1 Seats of the valve shall be of (threaded) removable types.

4.5.2 The seating face should be ground and lapped for perfectly sealing function.

Part Seven – Ball Valves

4 (Additions)

Add the following paragraphs:

4. Trunnion Mounted Ball Valve

4.1 Ball

4.1.1 The balls shall be in forged or cast materials and turn within accurately aligned top and integral bottom trunnion, which shall be supported within bearing retainers.

4.1.2 Antistatic:

Ball valves should be equipped with antistatic devices.

4.2 Seat Sealing

4.2.1 All resilient seated pipeline valves shall be equipped with secondary metal seats.

4.2.2 The valve soft seats shall be of PTFE or NYLON material.

4.2.3 The design of valve shall permit utilizing body cavity pressure to increase sealing function.

4.2.4 Upstream and downstream sealing under all operating condition (full block and bleed capability) should be considered.

4.3 Stem

4.3.1 The stem construction shall be of removable type and equipped with anti blow out devices.

4.3.2 The design of stem and actuator shall fully permit opening the valve from closed position when differential pressure equal to pressure rating at operating temperature.

4.3.3 Metal-backed self-lubricating PTFE sleeve bearings and thrust washer for reducing torque and attending service life should be considered.

APPENDIX A: API DATA SHEET FOR VALVES

Materials of construction _____
Valve location and function _____
Nominal valve size _____
Maximum operating pressure _____
Maximum field test pressure (see Clause D.2) _____
Valve pressure class _____
Maximum service temperature _____
Minimum service temperature _____
Liquid or gas service _____
Flow medium composition _____
Special flow requirements: Blow down, solids, pigs, etc. _____
Valve
Type of valve: _____ Gate _____ Plug _____ Ball _____ Check _____
Design type _____
Full round opening required? _____ Minimum bore _____
End connections
Upstream pipe: OD _____ ID _____ Material _____
Flanged end? Yes _____ No _____
Plain raised face or ring joint? _____
If ring joint, flat or raised face? _____
Size and pressure class, as per ASME B16.5 or MSS SP-44 _____ or ASME B16.47, Series A _____
Ring gasket or other gasket type and size _____
Note: Gaskets are not furnished as a part of the valve.
Welding end? Yes _____ No _____
Attach specifications for welding-end configuration.
Special flanges or mechanical joints? _____
Downstream pipe: OD _____ ID _____ Material _____
Flanged end? Yes _____ No _____
Plain raised face or ring joint? _____
If ring joint, flat or raised face? _____
Size and pressure class, as per ASME B16.5 or MSS SP-44 _____ or ASME B16.47, Series A _____
Ring gasket or other gasket type and size _____
Note: Gaskets are not furnished as a part of the valve.
Welding end? Yes _____ No _____
Attach specifications for welding-end configuration.
Special flanges or mechanical joints? _____
Length: Any special requirements for end-to-end or face-to-face dimensions? _____

Valve operation

Is gearbox with hand-wheel required? If so, give details: _____

For a hand-wheel on a horizontal shaft, give distance from centreline of valve opening to hand-wheel: _____ mm

Or, for a hand-wheel on a vertical shaft, give distance from centreline of valve opening to centre of rim of hand-wheel: _____ mm

NOTE For plug valves having loose wrenches, it is necessary to order wrenches separately.

Wrench required? _____

Locking device required? _____ Type _____

Valve support

Support ribs or legs required? _____

Other requirements

Supplementary requirements (see Annex B and Annex C) _____

Fire test design? Yes _____ No _____

ISO 15156 (all parts)? Yes _____ No _____

Pressure relief: If pressure relief devices are required, are there special requirements for these devices? _____

Drain connections: Any requirements? _____

Bypass connections: Any requirements? _____

Supplementary documentation required? (see Annex C) _____

Third-party witness of processes/testing _____

Painting or coating required? _____

MATERIAL AND EQUIPMENT STANDARD**FOR****VALVES****FIRST EDITION****MARCH 2003**

This standard specification is reviewed and updated by the relevant technical committee on Aug. 2014. The approved modifications are included in the present issue of IPS.

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FOREWORD

The Iranian Petroleum Standards (IPS) reflect the views of the Iranian Ministry of Petroleum and are intended for use in the oil and gas production facilities, oil refineries, chemical and petrochemical plants, gas handling and processing installations and other such facilities.

IPS is based on internationally acceptable standards and includes selections from the items stipulated in the referenced standards. They are also supplemented by additional requirements and/or modifications based on the experience acquired by the Iranian Petroleum Industry and the local market availability. The options which are not specified in the text of the standards are itemized in data sheet/s, so that, the user can select his appropriate preferences therein

The IPS standards are therefore expected to be sufficiently flexible so that the users can adapt these standards to their requirements. However, they may not cover every requirement of each project. For such cases, an addendum to IPS Standard shall be prepared by the user which elaborates the particular requirements of the user. This addendum together with the relevant IPS shall form the job specification for the specific project or work.

The IPS is reviewed and up-dated approximately every five years. Each standards are subject to amendment or withdrawal, if required, thus the latest edition of IPS shall be applicable

The users of IPS are therefore requested to send their views and comments, including any addendum prepared for particular cases to the following address. These comments and recommendations will be reviewed by the relevant technical committee and in case of approval will be incorporated in the next revision of the standard.

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GENERAL DEFINITIONS:

Throughout this Standard the following definitions shall apply.

COMPANY:

Refers to one of the related and/or affiliated companies of the Iranian Ministry of Petroleum such as National Iranian Oil Company, National Iranian Gas Company, National Petrochemical Company and National Iranian Oil Refinery And Distribution Company.

PURCHASER:

Means the "Company" where this standard is a part of direct purchaser order by the "Company", and the "Contractor" where this Standard is a part of contract documents.

VENDOR AND SUPPLIER:

Refers to firm or person who will supply and/or fabricate the equipment or material.

CONTRACTOR:

Refers to the persons, firm or company whose tender has been accepted by the company.

EXECUTOR:

Executor is the party which carries out all or part of construction and/or commissioning for the project.

INSPECTOR:

The Inspector referred to in this Standard is a person/persons or a body appointed in writing by the company for the inspection of fabrication and installation work.

SHALL:

Is used where a provision is mandatory.

SHOULD:

Is used where a provision is advisory only.

WILL:

Is normally used in connection with the action by the "Company" rather than by a contractor, supplier or vendor.

MAY:

Is used where a provision is completely discretionary.

0. INTRODUCTION

This Standard covers the minimum requirements for purchasing conventional valves to be used in oil, gas and petrochemical industries. The Standard contains seven parts. Each enquiry consists of two parts; part one general requirements and the other part pertaining to requirements for one of the following valves:

Part 1	General requirements
Part 2	Gate valves
Part 3	Globe valves
Part 4	Plug valves
Part 5	Butterfly valves
Part 6	Check valves
Part 7	Ball valves

Valves contained in this Standard have end connections as follows:

- Flanged end
- Butt welding end
- Socket welding end
- Threaded end
- Special end

Note: This first (1) edition, which is a new revision of this standard with the same title and number, has been technically revised, cancels and replaces the original (0) edition which now is withdrawn.

Guidance for Use of this Standard

The amendments/supplements to API 6D (2008), API 600 (2009), API 602 (2009) ... Given in this standard are directly related to the equivalent sections or clauses in these standards.

The following annotations, as specified hereunder, have been used at the bottom right hand side of each clause or paragraph to indicate the type of change made to the equivalent clause or paragraph of reference standards.

Sub. (substitution)	: "The clause in reference standard is deleted and replaced by the new clause in this Standard"
Del. (Deletion)	: "The clause in reference standard is deleted without any replacement".
Add. (Addition)	: "A new clause with a new number is added".
Mod. (Modification)	: "Part of reference standard is modified and/or a new description and/or statement is added to that clause".

PART ONE

GENERAL REQUIREMENTS

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1. GENERAL

1.1 Scope

This part of standard covers general requirement(s) for purchasing valves specified in part two thru seven.

Note:

This standard specification is reviewed and updated by the relevant technical committee on Aug. 2014. The approved modifications by T.C. were sent to IPS users as amendment No. 1 by circular No. 427 on Aug. 2014. These modifications are included in the present issue of IPS.

1.2 Conflict Requirements

The valve(s) offered by the vendor shall be in compliance with the requirement(s) of this Standard. If requirement(s) of this Standard differs from or is in conflict with other purchasing documents, the vendor shall clearly indicate points of conflict and request the Company for clarification and comments.

The Company's comments shall be fully considered and incorporated in the final specifications.

In case that no comment(s) is given by the Company, the followings will take precedence in the order of priority as indicated hereunder:

- a) Purchase order.
- b) This Standard specifications.

1.3 References

Throughout this Standard the following dated and undated standards/codes are referred to. These referenced documents shall, to the extent specified herein, form a part of this standard. For dated references, the edition cited applies. The applicability of changes in dated references that occur after the cited date shall be mutually agreed upon by the Company and the Vendor. For undated references, the latest edition of the referenced documents (including any supplements and amendments) applies.

ANSI (AMERICAN NATIONAL STANDARD INSTITUTE)

ASME (AMERICAN SOCIETY OF MECHANICAL ENGINEERS)

- B 1.20.1 "Pipe Threads, General Purpose"
- B 16.1 "Cast-Iron Pipe Flanges and Flanged Fittings"
- B 16.4 "Cast-Iron Threaded Fitting"
- B 16.5 "Pipe Flanges and Flanged Fittings"
- B 16.10 "Face-to-Face and End-to-End Dimensions of Valves"
- B 16.11 "Forged Fittings, Socket Welding and Threaded"
- B 16.15 "Cast Bronze Threaded Fittings"
- B 16.24 "Cast Copper Alloy Pipe Flanges and Flanged Fittings"