ENGINEERING STANDARD

FOR

TECHNICAL EVALUATION

OF

MACHINERIES

ORIGINAL EDITION

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0. INTRODUCTION

The aim of this Standard is to provide a general guidance for technical evaluation of machineries in bids.

General requirements to be concerned in technical evaluation of machineries are covered in Section 3 and specifics requirements in Appendix A.

Quotation Analysis Report Tables are given in Appendix A as a reference for comparison of different supplier's offerings.

Attention shall be paid that, although many subjects regarding the technical evaluation of machineries are discussed in this Standard but for each individual case Company's Engineer should consider the specific conditions and requirements concerned with that case, and prepare the quotation analysis reports accordingly.

1. SCOPE

This Standard covers general requirements and guidance for technical evaluation of machineries such as pumps, compressors, drivers and auxiliaries, for Iranian petroleum Industries.

2. REFERENCES

Throughout this Standard the following standards and codes are referred to. The editions of these standards and codes that are in effect at the time of publication of this standard shall, to the extent specified herein, form a part of this Standard.

IPS (IRANIAN PETROLEUM STANDARDS)

IPS-M-PM-105	"Centrifugal Pumps for Process Services"
IPS-M-PM-115	"Centrifugal Pumps for General Services"
IPS-M-PM-125	"Centrifugal Fire Water Pumps"
IPS-M-PM-130	"Positive Displacement Pumps - Reciprocating"
IPS-M-PM-135	"Light Duty Centrifugal Pumps"
IPS-M-PM-140	"Positive Displacement Pumps - Rotary"
IPS-M-PM-150	"Positive Displacement Pumps - Controlled Volume"
IPS-M-PM-160	"Vacuum Pumps"
IPS-M-PM-170	"Centrifugal Compressors for Process Services"
IPS-M-PM-180	"Package Integrally Geared Centrifugal Compressors for Utility & Instrument Air Services"
IPS-M-PM-190	"Axial Flow Centrifugal Compressors"
IPS-M-PM-200	"Reciprocating Compressors for Process Services"
IPS-M-PM-210	"Reciprocating Compressors for Utility & Instrument Air Services"
IPS-M-PM-220	"Positive Displacement Compressors-Rotary"
IPS-M-PM-230	"Special Purpose Centrifugal Fans for Special Purpose Application"
IPS-M-PM-235	"General Purpose Centrifugal Fans"
IPS-M-PM-240	"General Purpose Steam Turbines"
IPS-M-PM-250	"Special Purpose Steam Turbines"
IPS-M-PM-260	"Combustion Gas Turbines"
IPS-M-PM-290	"Reciprocating Internal Combustion Engines
IPS-M-PM-330	"Mixers"

3. GENERAL REQUIREMENTS

3.1 Delivery Time

Delivery time shall meet project schedule. The closer delivery times to project schedule shall be considered as priority in evaluation of equipment provided that this does not jeopardize the guarantee period.

3.2 Vendor's Experience and Reputation

Vendors shall be reputed and experienced in manufacture of equipment and ancillaries . The more reputed and experienced vendors and subvendors are preferred and shall have preference in evaluation.

3.3 Interchangeability

Regarding cost saving, the interchangeability of equipment parts is an essential factor when evaluating machineries. Those equipment which have been purchased and their reliability approved by Iranian Oil Ministry previously, shall be preferred, and preceded when evaluating machineries.

The interchangeability of parts shall also be considered in bulk procurement of machineries for specific projects.

3.4 Guarantee and Warranty

Supplied equipment shall be guaranteed for proper performance, material and workmanship.

Longer guarantee periods are preferred and Company's engineer shall consider it as a priority when preparing Quotation Analysis Reports.

3.5 After Sales Services

Vendors shall guarantee after sales services of the equipment. Those companies which have service shops in I.R. Iran are preferred.

After sales services cover any repair and technical guidance by the manufacturer and its previous behavior, after purchasing the equipment.

3.6 Spare Parts Guarantee

Vendor shall guarantee the supply of spare parts for the equipment at least for ten years after the date of shipment. The price of the spare parts shall be kept at a reasonable value regarding the inflation effects.

Vendors that guarantee the supply of spare parts for longer period shall be preceded in technical evaluation of machineries.

3.7 Size and Weight

For each machine the Company's engineer shall study all aspects of size and weight of equipment and consider any suitable preferences.

3.8 Ease of Dismanting and Repair

Repair time and costs may be reduced by proper design of equipment for ease of dismantling and repair. Company's Engineer shall study repair and disassembling details of the equipment. Equipment that is easily disassembled and repaired shall be preceded in technical evaluation.

3.9 Efficiency and Energy Consumption

Low efficiency and high energy consumption of the equipment will increase the operation costs. Equipment with high efficiency and low energy consumption is desirable and shall be preceded in technical evaluation of machineries.

4. COMPLIANCE WITH STANDARDS

Company's Engineer should check the compliance of the equipment with appropriate data sheets and Standards, as listed in Table 1.

In case of deviations from related standard, Company's Engineer shall indicate them in QAR.

5. SUMMARY

Company's Engineer shall indicate in Quotation Analysis Report the preference of equipment quoted, according to general requirements noted in section 1 and also specific requirements indicated in appropriate standard.

Rotating machines may be sorted according to their compliance with IPS Standards in order to facilitate procurement procedure.

TABLE 1

EQUIPMENT	APPROPRIATE IPS No.
Centrifugal Pumps for Process Services	IPS-M-PM-105
Centrifugal Pumps for General Services	IPS-M-PM-115
Centrifugal Fire Water Pumps	IPS-M-PM-125
Positive Displacement Pumps-Reciprocating	IPS-M-PM-130
Light Duty Centrifugal Pumps	IPS-M-PM-135
Positive Displacement Pumps-Rotary	IPS-M-PM-140
Positive Displacement Pumps-Controlled Volume	IPS-M-PM-150
Vacuum Pumps	IPS-M-PM-160
Centrifugal Compressors for Process Services	IPS-M-PM-170
Package Integrally Geared Centrifugal for Utility &Instrument Air Services	IPS-M-PM-180
Axial Flow Centrifugal Compressors	IPS-M-PM-190
Reciprocating Compressors for Process Services	IPS-M-PM-200
Reciprocating Compressors for Utility & Instrument Air Services	IPS-M-PM-210
Positive Displacement Compressors-Rotary	IPS-M-PM-220
Special Purpose Centrifugal Fans for Special Purpose Application	IPS-M-PM-230
General Purpose Centrifugal Fans	IPS-M-PM-235
General Purpose Steam Turbines	IPS-M-PM-240
Special Purpose Steam Turbines	IPS-M-PM-250
Combustion Gas Turbines	IPS-M-PM-260
Reciprocating Internal Combustion Engines	IPS-M-PM-290
Mixer	IPS-M-PM-330

APPENDICES

APPENDIX A

QUOTATION ANALYSIS REPORTS

IRANIAN PETROLEUME STANDARDS
A1-QUOTATION ANALYSES REPORT
FOR CENTRIFUGAL PUMPS

IRANIAN PETROLEUM STANDARDS
A2-QUOTATION ANALYSIS REPORT
FOR RECIPROCATING PUMPS

IRANIAN PETROLIUM STANDARDS
A3-QUOTATION ANALYSIS REPORT
FOR RECIPROCATING COMPRESSOR

Q.A.R FOR RECIPROCATING COMPRESSOR (2/2)

IRANIAN PETROLIUM STANDARDS

A4-QUOTATION ANALYSIS REPORT

FOR GENERAL PURPOSE STEAM TURBINE

IRANIAN PETROLIUM STANDARDS
A5-QUOTATION ANALYSIS REPORT
FOR SPECIAL PURPOSE STEAM TURBINE

IRANIAN PETROLIUM STANDARDS
A6-QUOTATION ANALYSIS REPORT
FOR ENGINES

IRANIAN PETROLIUM STANDARDS
A7-QUOTATION ANALYSIS REPORT
FOR FANS AND BLOWERS

IRANIAN PETROLIUM STANDARDS
A8-QUOTATION ANALYSIS REPORT
FOR LUBE OR SEAL OIL SYSTEM

Q.AR. FOR LUBE OR SEAL OIL SYSTEM

IRANIAN PETROLIUM STANDARDS
A9-QUOTATION ANALYSIS REPORT
FOR CENTRIFUGAL COMPRESSORS

Q.A.R FOR CENTRIFUGAL COMPRESSOR (2/2)

IRANIAN PETROLIUM STANDARDS
A10-QUOTATION ANALYSIS REPORT
FOR GAS TURBINES

Q.A.R FOR GAS TURBINES (2/2)

IRANIAN PETROLIUM STANDARDS
A11-QUOTATION ANALYSIS REPORT
FOR EXPANSION TURBINES

IRANIAN PETROLIUM STANDARDS
A12-QUOTATION ANALYSIS REPORT
FOR MIXERS

Q.A.R FOR RECIPROCATING COMPRESSOR (2/2)