

	Special Purpose Steam Turbines (This practice is appropriate for attachment to Inquiry or Purchase Document)	IP 10-7-2	
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		Rev. 0	June 1997

THE FOLLOWING PARAGRAPH NUMBERS REFER TO API 612, FOURTH EDITION, JUNE 1995,
WHICH IS A PART OF THIS PRACTICE

SECTION 1 - GENERAL

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| 1.1 | SCOPE | |
| I | 1.1.1 | a. All requirements specified in this practice are additions to those of API 612 unless specifically noted as exceptions. Paragraph numbers in this practice which do not appear in API 612 are new paragraphs. |
| I | | b. An asterisk (*) indicates that a decision by the purchaser is required or that additional information is furnished by the purchaser.
Note: A bullet (•) is shown in API 612 indicating that a purchaser's decision is required. |
| I | | c. The following references are synonymous: BP and IP. |
| O,R | | d. Special purpose steam turbines shall be supplied by vendors qualified by experience in manufacturing the units proposed . To qualify, the vendor must have manufactured, at the proposed point of manufacture, at least two turbines of comparable power, speed, and steam conditions. These turbines must have been in service for at least one year and be performing satisfactorily. Also see Par. 1.1g .

Alternatively , the vendor may satisfy this experience requirement on an individual component and service condition basis . Experience need not be concentrated in a single turbine, but may exist in several different operating turbines. To qualify, however, each of these turbines must have been in service for at least one year and be performing satisfactorily.

The critical areas relative to service conditions which must be demonstrated to the satisfaction of the Owner's Engineer include, but are not limited to the following: <ol style="list-style-type: none"> 1. Speed 2. Power rating 3. Pressures 4. Temperatures The critical areas relative to mechanical design which must be demonstrated to the satisfaction of the Owner's Engineer include, but are not limited to the following: <ol style="list-style-type: none"> 1. Sealing system 2. Bearing design and loads 3. Casing size and design 4. Casing joint 5. Extraction control - single and double extraction 6. Nozzle and diaphragm design 7. Rotor and blade design 8. Number of stages 9. Rotor dynamics 10. Material selection 11. Coupling design and arrangement |
| | | e. In the area of component mechanical design, the vendor must show that each component has operated under similar conditions as those of the proposed turbine. |
| | | f. Steam turbines manufactured under a license agreement shall carry the licenser's written guarantee . |
| * | | g. Where the vendor qualification requirement of Par. 1.1d prevents the application of the latest technology, the vendor shall submit a second alternative proposal incorporating such features for evaluation by the Owner's Engineer. The proposal shall specifically identify the undemonstrated features and state their advantages. |

- I 1.1.2 Special purpose steam turbines are those used as drivers for:
- Special Purpose Centrifugal Compressors and Axial Compressors.
 - Rotary Screw Compressors.
 - Reciprocating process gas compressors which require double reduction gearing and are also 1000 hp (750 kW) or larger.
 - Generators greater than 1000 kW.
- 1.5 REFERENCED PUBLICATIONS
- I 1.5.3
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- Table 1** lists the practices and standard which shall be used with this practice.
 - Table 2** lists the practices and standard which shall be used with this practice **as specified** by the purchaser.

TABLE 1

PRACTICES	
IP 2-1-1	Equipment Noise Level Data Requirements
IP 3-16-1	Flanged Joints, Gaskets, and Bolting
IP 10-12-1	Vibration, Axial-Position, and Bearing-Temperature Monitoring Systems for Compressors and Drivers
IP 10-14-1	Lube and Seal Oil Systems for Machinery
IP 18-12-1	Positive Material Identification
IP 20-1-1	Inspection of Equipment and Materials
STANDARD	
API Standard 612	Special Purpose Steam Turbines For Petroleum, Chemical and Gas Industry Services

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TABLE 2

PRACTICES	
IP 3-3-8	Washing Systems for Steam Turbines
IP 10-10-1	Special Purpose Gear Units
IP 15-1-2	Instrumentation for Compressors and Drivers
IP 15-7-1	Electric Power Branch Circuit Design for Instrumentation
IP 15-7-2	Protective Systems
IP 15-11-1	Instrument Control Panels
IP 16-9-1	Low Voltage A-C Motors Up to 200 HP (150 kW)
IP 16-9-2	A-C Motors: Medium Voltage and Low Voltage Over 200 HP (150 kW)
IP 18-6-1	Impact Requirements for Materials
STANDARD	
ASTM Standard A488 / A488M	Steel Castings, Welding, Qualifications of Procedures and Personnel

SECTION 2 - BASIC DESIGN

- 2.1 GENERAL
- I,O * 2.1.4
- E 2.1.12
- I,R 2.1.14
- When specified, turbines shall be **washed per IP 3-3-8**.
- (Exception) **Noise**. Turbine vendors shall furnish noise emission data for the quoted equipment with their proposal per **IP 2-1-1**.
- Turbines and auxiliaries shall be suitable for outdoor installation.
 - Turbines and auxiliaries shall be winterized for the climatic zone specified.