

# VENDOR DRAWING REVIEW

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**Abstract**—The main objective of this review is to streamline ourselves for review of Vendor drawings/documents received, against a purchase order or specification.

**Index Terms**— Vendor Drawing.

## I. INTRODUCTION

Vendor Print is any Drawing/ Document submitted by Vendor as per Purchase Specification.

Technical review of vendor documents shall ensure that:

1. The vendor design is adequate for its purpose and complies with the latest issue of the Company requisition and authority requirements mentioned there in;
2. All information which Company requires to complete the work is given (including information required by disciplines);
3. Instructions for erection, installation, commissioning, operation and maintenance cover the requirements as set out for these documents and are reviewed by the Specialist Engineer.

## II. LIST OF ABBREVIATIONS

- P&ID-Piping and Instrument Diagram
- GA- General arrangement Drawing
- O&M-Operation and maintenance
- PDS- Process Data Sheet
- TL- Tangent Line
- BTL-Bottom Tangent Line
- C.L.-Center Line
- U.S B.P.- Under side base plate

## III. DEFINITIONS

1. Manufacturer: manufactures the equipment/item.
2. Bidder: Offer the equipment/Items (goods) or services against specification.
3. Vendor: (supplier /Contractor) supplies the equipment / items (goods) or services against a purchase order.
4. Supplier/contractor more generic in use where as vendor is purchase order specific.

The above explanations/ definitions are for understanding purpose only for engineering.

## IV. CATEGORIES OF DRAWINGS/DOCUMENT SUPPLIED BY VENDOR

Generally three categories of drawings/documents are submitted by Vendor.

### A. For Approval

Vendor starts working/manufacturing on receiving approval from the purchaser e.g. Equipment GA / Package GA.

### B. For Information

For equipment it's for better understanding/clarity and to give the information as per enquired technical specifications such as equipment sectional drawing. For Package items, it's piping drawings, particularly the piping sections & details of package items. Vendor takes care of the comments in the course of executing the work.

### C. For Reference

These types of drawings are required during operation / maintenance such as drawings for spare parts, O&M manual of individual equipment / item.

Except for piping group procured items (piping bulks & piping special) piping engineers are generally concerned "for approval category" of equipment & "for approval/information" categories for packages.

## V. EQUIPMENT/PACKAGES COVERED IN THIS TRAINING

1. Major Equipment
2. Vessels - Vertical / Horizontal
3. Pumps
4. Heat exchanger

## VI. BASIS FOR REVIEW (REFERENCE DOCUMENTS)

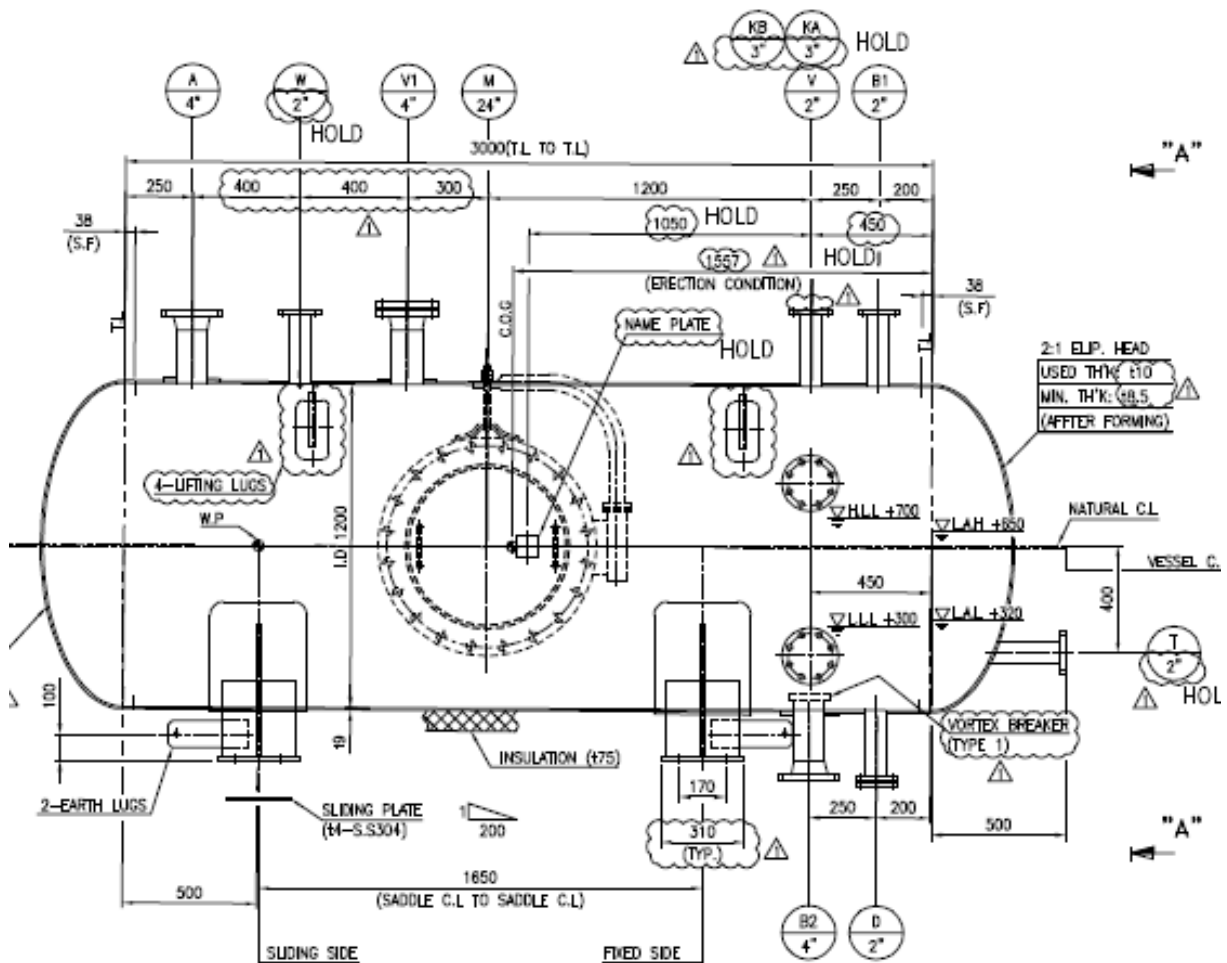
Piping design requires below listed documents for vendor drawings review of various equipment's, or any other Authority and/or code rule as applicable.

- a. P&ID
- b. Process data sheet of the equipment
- c. Plant layout specification
- d. Instrument input
- e. Nozzle arrangement
- f. Plot Plan
- g. 3D Model
- h. Mechanical Drawing / Datasheet

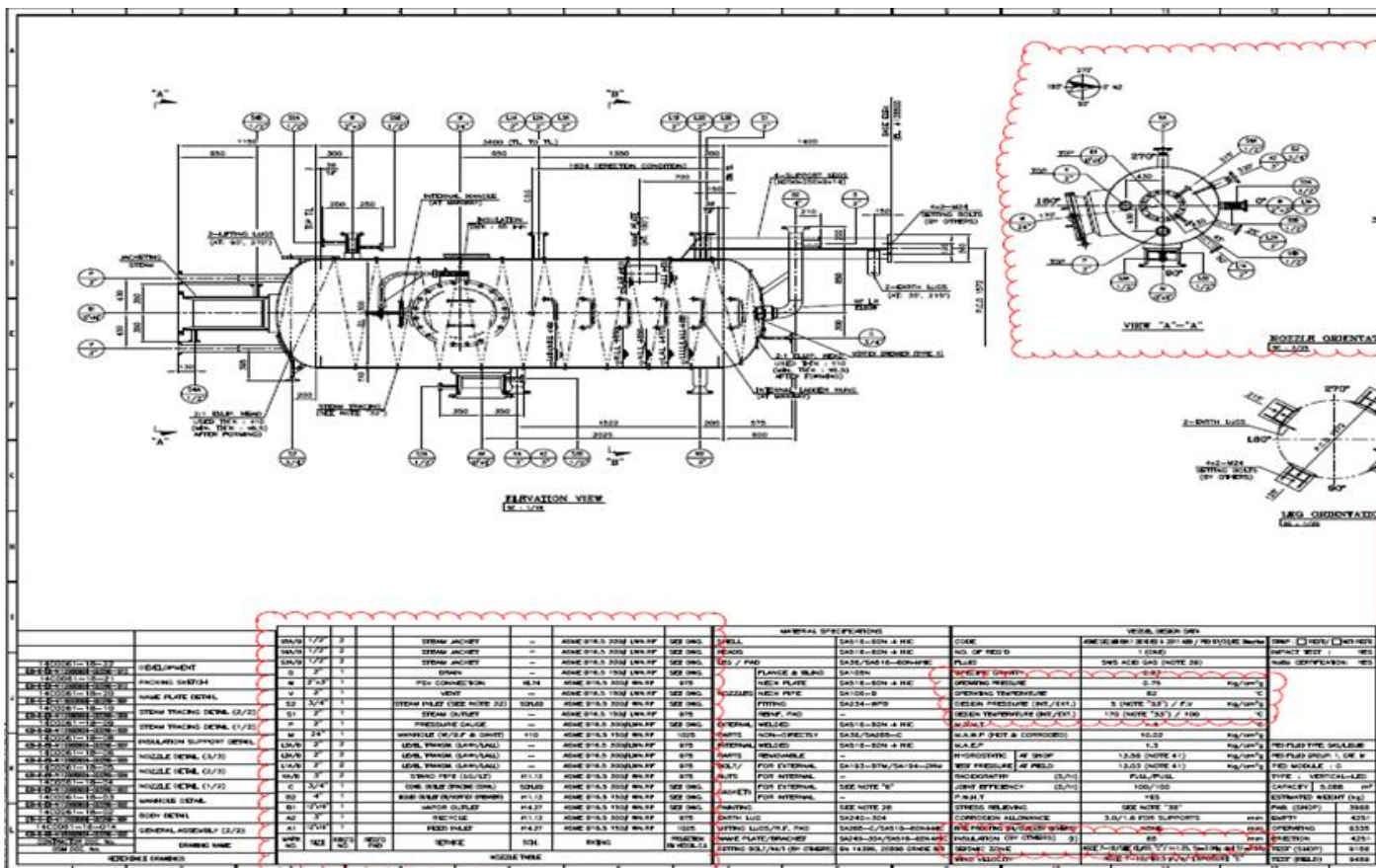
## VII. REVIEW OF VESSEL (VERTICAL & HORIZONTAL) VENDOR DRAWING / DOCUMENTS

1. Equipment Naming & Tag number (As per P&ID)
2. Equipment Design Data
  - a. Shell and Dish wall thickness
  - b. Insulation

- c. Operating & design Conditions
3. Equipment Dimensions
  - a. Overall height.
  - b. Base dimensions (O.D., I.D., and Thickness)  
Anchor bolt chair height (If applicable)
  - c. Dimensions to top & bottom tangent line.
  - d. Type of heads
4. Nozzles Schedule
  - a. Nozzle Nomenclature (As per PDS)
  - b. Size, Rating, Facing
  - c. Nozzle projection
  - d. Orientation
  - e. Nozzle relationship to internals (As per PDS)
  - f. Process Nozzle elevation(as per PDS)
  - g. Internal Pipe (If required as per PDS)
5. Manhole
  - a. Type (Hinged / Davit )
  - b. Height above platform.
  - c. Clearance for cover
  - d. Orientation.
6. Skirt
  - a. Height
  - b. Access opening
  - c. Piping opening
  - d. Fireproofing
  - e. Anchor Chairs
7. DAVITS
  - a. Load limitations
  - b. Operating requirements.
8. Pipe Support Clip
  - a. Elevation, Orientation
9. Stiffening ring size and location
10. Saddle Support (For Horizontal Vessel Only)
  - a. Distance from TL to Saddle(Fixed/Sliding)
  - b. Saddle to Saddle Distance
  - c. Dimension from vessel center to bottom of saddle base plate
11. Instrumentation
  - a. Instrument nozzle elevation (As per Level sketch)
  - b. Level instrument (As per Instrument std.)
  - c. Temp. Instrument (As per Instrument std.)
12. Vessel Nameplates
  - a. Location of name plate for easy visibility.
13. Erection
  - a. Lifting lug
  - b. Tailing lug

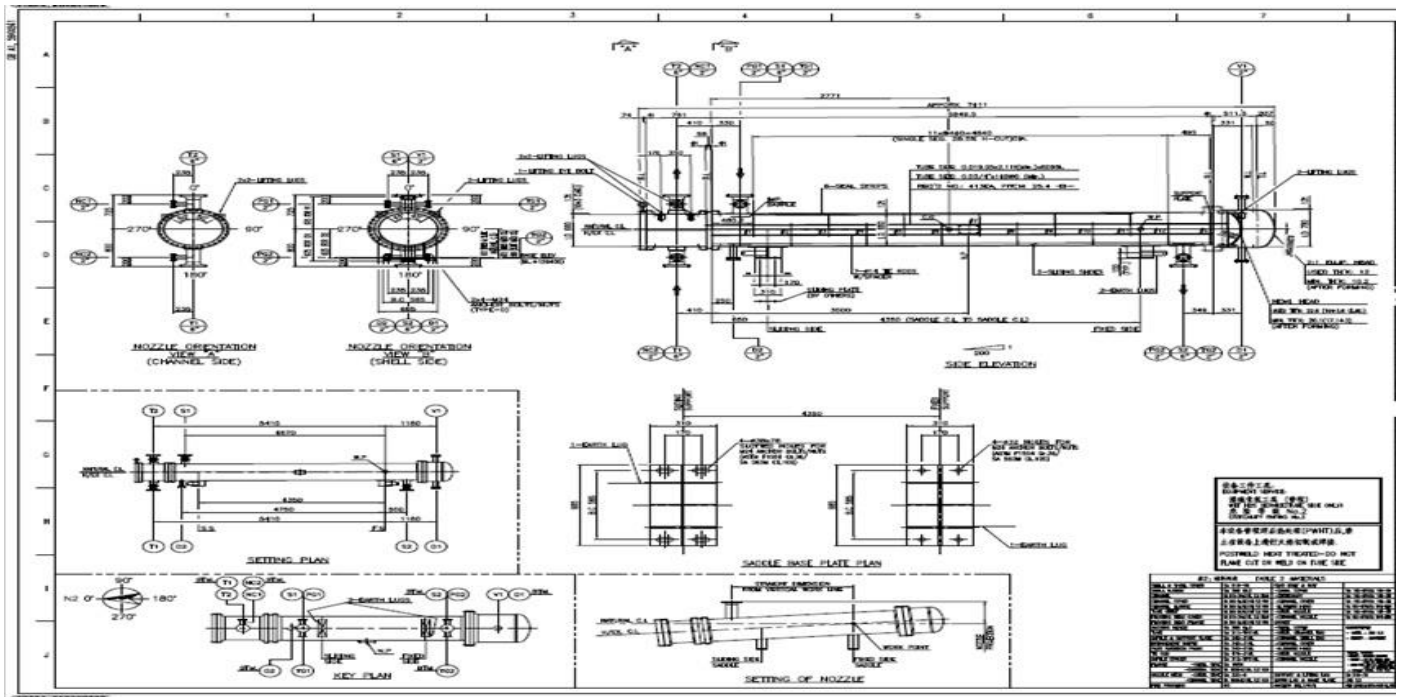


VIII. REVIEW OF VESSEL (VERTICAL & HORIZONTAL) VENDOR DRAWING / DOCUMENTS



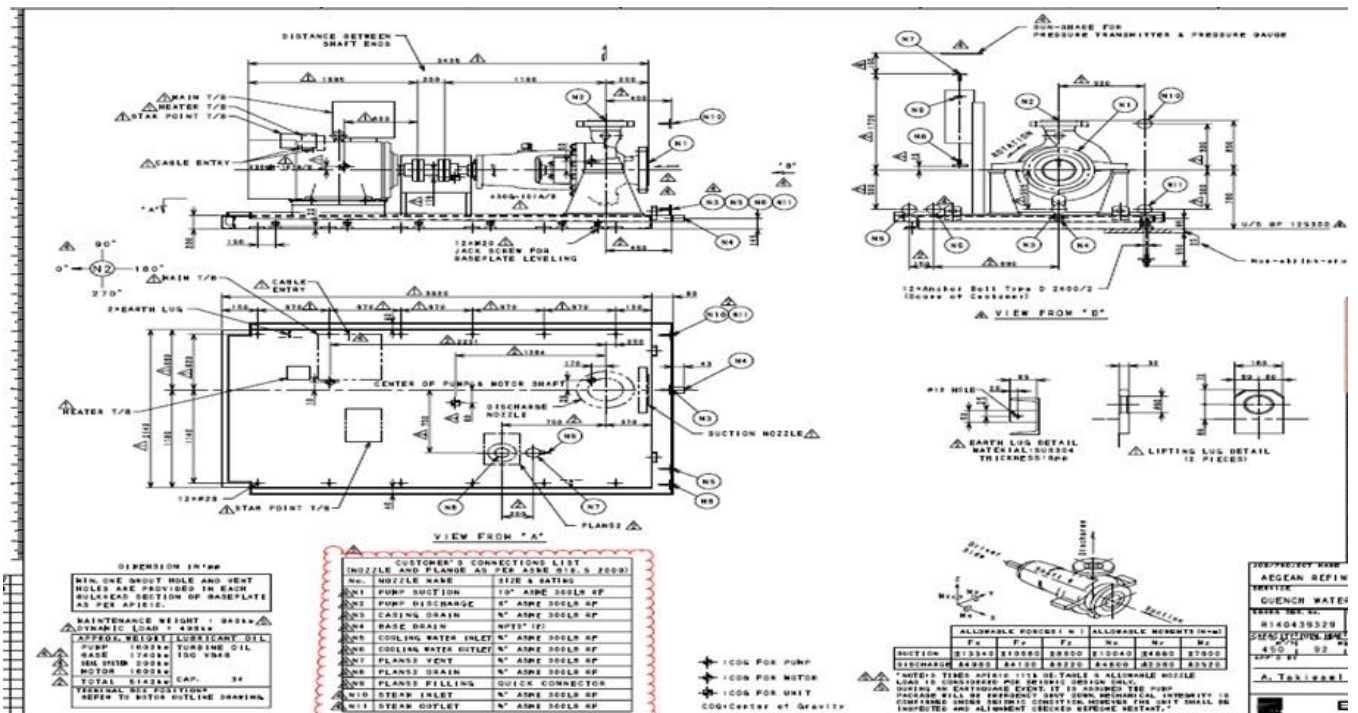
IX. REVIEW OF VENDOR PRINT (HEAT EXCHANGERS)

- A. Outside Dia. Of Exchanger Shell
- B. Overall length of Exchanger
- C. Dim. Of Saddles and Locations of fixed saddle
- D. Dimension from Shell centerline to bottom of saddles
- E. Location of saddles with respect to tube side Nozzles.
- F. Size, Rating and location of all Nozzles.
- G. Orientation and Standard of any supplementary (Multipurpose) Nozzle that is connected with hard pipe.(e.g. Flushing connection on neck of main Nozzle).
- H. Allowable loads
- I. maintenance space for where tube bundle is removable.
- J. special instrument requirement as per P&ID
- K. Footprint and overall volume space requirement for plate type heat exchanger
- L. Davit(If applicable)



X. REVIEW OF VENDOR PRINT (PUMPS)

1. Base Plate dimension and relationship to pump C.L. and C.L. of discharge
2. Dimension from C.L. of Suction Nozzle to Bottom of baseplate.
3. Location of Motor with respect to C.L. of pumps and C.L. of discharge
4. Size, rating and facing of suction and discharge nozzle and their location relative to pump casing and baseplate
5. Allowable Nozzle Loads
6. Size and location requirement of electrical control panel
7. Size and specific location requirement of associated lube and seal oil package.
8. U / S B.P. elevation.



1. Equipment Tag No.
2. P&ID showing the vendor scope of supply for piping and instrument
3. Detail dimensional drawing of vendor package including, but not limited to the following
  - a. Overall skid dimension
  - b. Skid structure details
  - c. Tie in locations
  - d. Equipment location
  - e. Piping and Instrument layout
  - f. Identify access way and clearances requirement for maintenance and operational access (Access to nozzles, manholes, valves, Inst, motors, spectacle blind strainer etc. as safety egress)
4. Pipe support details
5. Cable/instrument size and location
6. Platform/ladder location
7. Nozzle location, description, tag, allowable loads at interface point
8. Agitator removal space

#### REFERENCES

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- [4] Some of the Executed Projects