



Piping Stress Analysis Information Requirements

In order to perform a comprehensive piping stress analysis, the following data are desired:

1. Piping system drawing, isometrics and/or spool piece drawings. The piping drawing should represent the as-exists condition as closely as possible, including pipe hanger location and pipe weld locations.
2. Piping materials information, including:
 - (a) Pipe OD and ID or wall thickness.
 - (b) Pipe material specification.
 - (c) Fitting wall thickness or class.
 - (d) Valve type, pressure ratings, and weights.
 - (e) Types of valve operators and weights.
 - (f) Relief valve relieving capacities and dimensional data.
 - (g) Insulation thickness and density.
 - (h) Termination point (nozzles) expansion and allowable loads.
3. Pipe support details, including:
 - (a) Pipe support type and locations.
 - (b) Spring type support load capacities.
 - (c) Spring type support load adjustments.
 - (d) Component bills of materials.
4. Fluid characteristics, including:
 - (a) Design temperature.
 - (b) Design pressure.
 - (c) Operating temperature.
 - (d) Operating pressure.
5. "As-exists" conditions, including the following:
 - (a) Pipe hanger hot and cold walkdown data, such as actual spring settings, hanger condition, interferences, etc.
 - (b) Pipe system hot and cold walkdown data, such as insulation damage, interferences, pipe distortion, movements, etc.
6. If warranted, to perform safety valve discharge analysis, the following are required:
 - (a) Relief valve relieving capacities and dimensional data.
 - (b) Pipe snubber details and locations.
7. If warranted, to perform turbine trip analysis, the following are required:
 - (a) Stop and/or Intercept valves' effective closing time.
 - (b) Stop and/or Intercept valves' details and weights.
 - (c) Heat balance data, including the flow rate for each pipe size (lb./hr.).
8. Information required to perform other transient load analysis would be requested on an as needed basis.

It is important to note that the information involving the piping segments supplied by the boiler and turbine manufacturers will likely not be found with the plant piping specifications and will require the review of specific drawing/information associated with the individual suppliers.

IR-PSA