

High Pressure Piping Application (HPP)

Supporting Documents

Existing Piping System

1. Is there existing piping that is part of this high-pressure piping application?

2. If there is existing piping that is part of this high-pressure piping application, could you please clearly describe and specify what it is and where this existing piping is located?

New Piping System

- 1) Provide P&ID and PFD for the high-pressure piping system within the scope of this application.

- 2) Provide Bill of Materials for all pressure carrying piping and components that includes the following:
 - a. Component name
 - b. Make
 - c. Manufacturer
 - d. Model
 - e. Material Specifications
 - f. Pressure rating
 - g. Temperature rating range for the pressure rating
 - h. Service fluid
 - i. Certification and CRN for all components, fittings, valves, and equipment

- 3) Describe the scope of this application. This should show the start and end points. Please show this in a diagram.

- 4) Confirm that all fittings, components, and valves have CRN.

- 5) Is the piping within the scope of this application above ground or buried?

- 6) Is the piping within the scope of this application located outdoors or indoors?

- 7) Describe how all the above ground piping are protected from external corrosion by a suitable coating.

- 8) Describe how all the above ground piping are protected from damage from external sources.
- 9) Describe how all the above ground piping are supported and anchored as required by ASME B31.1, ASME B31.3 or CSA Standard Z662 or by other code acceptable to the Director.
- 10) Describe how all buried piping are coated, cathodically protected, and monitored in accordance with CSA Standard Z662.
- 11) Where is the over pressure protection device located and does it have category G CRN as required by section 2.4 (f) of the High Pressure Piping Code TSSA-HPP-2020?
- 12) What is the set point of the over pressure protection devices?
- 13) What are the lines sizes of the piping system within the scope of this application?
- 14) What is the approximate length of each line in the piping system?
- 15) What fuel is carried in the piping system within the scope of this application?
- 16) What are the design codes for the piping system within the scope of this application?
- 17) What is the design pressure of the piping system within the scope of this application?
- 18) What is the design temperature range of the piping system where the design pressure and test pressure fall within?
- 19) What is the lowest temperature of the fuel carried by this high-pressure piping system during service?
- 20) What is the highest temperature of the fuel carried by this high-pressure piping during service?
- 21) Is any piping within the scope of this application insulated?
- 22) What is the ambient temperature of the environment where the high-pressure piping within the scope of this application operates?
- 23) What is the test pressure of the piping system within the scope of this application?

- 24) What is the test medium of the piping system within the scope of this application?
- 25) What is the test duration of the piping system within the scope of this application?
- 26) Describe what the joint types are.
- 27) Confirm that all above ground connections are welded, threaded, compression fitting joined or flanged.
- 28) Confirm that there are no flared connections for above ground joints.
- 29) Are there any butt welded joints within the scope of this application?
- 30) Confirm that all buried piping connections are welded.
- 31) Confirm that all buried stainless steel tubing shall comply with the following:
 - a) Buried stainless steel tubing shall be run inside at least one layer of casing. The casing used shall be watertight, joined to provide a continuous moisture barrier, and approved for direct burial.
 - b) Stainless steel tubing shall be of one continuous run or joined by welding.
 - c) The casing shall:
 - i) be vented at both ends, in a manner that prevents the ingress of dirt, moisture, insects, and vermin; and
 - ii) allow for the passage of the stainless-steel tube in a manner that prevents the ingress of dirt and moisture.
- 32) What non-destructive examination methods will be used for all the joints?
- 33) Is the entire piping system being pressure tested together as one assembly or are sections tested separately?
- 34) Hydrostatic pressure testing is preferred to pneumatic pressure testing. If you cannot conduct hydrostatic testing, please provide a rationale why you cannot conduct the pressure test hydrostatically.
- 35) If you plan to conduct pneumatic pressure testing, please review the attached documents, and provide a pressure test procedure based on these documents.
- 36) Are there sections of the piping that is not accessible during the pressure testing and daily operation?

- 37) Is all the piping within the scope of this application accessible for inspection during the pressure test?
- 38) Please provide a declaration from a professional engineer in Ontario stating that all pressure carrying components are rated for the design and test pressure that they are exposed to. Also in this declaration, please indicate the temperature rating range of this piping system. In addition, please indicate that all components that come into contact with the service fluid are compatible with the service fluid in this declaration.
- 39) If there are any welded joints within the scope of this application, please pay attention to the following parts as our inspector will require them:
- a) Contractor doing the welding needs to have C of A (certificate of authorization) on B31.1 or B31.3 from TSSA BPV (boiler and pressure vessel).
 - b) Welding procedure needs to be approved by TSSA BPV.
 - c) Welder needs to have a ticket from TSSA BPV on the welding procedure used.