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SAFETY INFORMATION BULLETIN: SB00-17 Rev. 1

(Supersedes Advisory Bulletin SB00-17, issued May 5, 2000;
Note: SB00-17 Rev. 1 - editorial corrections)

November 22, 2001

Subject: SA 515 Materials

This material can be manufactured in accordance with a coarse grain practice and as such is highly susceptible to brittle fractures, even at ambient temperatures.

The intent of the ASME Code is for this material to be used in an intermediate and higher temperature service where resistance to creep is the desired criterion. Coarse grained material presents difficulties in welding, thermal cutting and gouging. There have been numerous cases where the material has shown itself prone to fracture during forming and hydrostatic testing of vessels at low ambient temperatures. Where SA 515 material is used, the following precautionary measures are recommended during the fabrication cycle:

1. For thermal cutting or arc gouging on plates of 200 mm thickness or greater, use a preheat of 100^{o} C.

2. On all thermally cut edges, machine or grind any visual evidence of the cutting operation. The finished edge surface and adjacent zone should not be significantly higher than the hardness value of the parent material.

3. Use preheat for any welding operation.

4. Use low-hydrogen welding consumables.

5. Avoid single small bead welds or layers of small bead welds in cosmetic operations.

6. All nozzles should be flush with the inside of the pressure retaining component.

7. All nozzle welds should be full penetration welds.

8. Nozzle reinforcements should extend to the maximum allowable reinforcement boundary in the longitudinal direction. Avoid short stubby thick plates within the vertical boundary-parallel to the nozzle.

9. Avoid forming operations at low ambient temperatures and use a moderate preheat.

10. The completed pressure retaining component should be hydrostatically tested at a temperature of NDT + 40°F (nil-ductility transition temperature plus 40°F). It has been found in most cases that the nil-ductility transition temperature lies between 80°F and 100°F for this particular material. Use a hydrostatic test temperature of 120°F.

For further information contact:

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