

ASME PROOF TEST OF AN OBOUND NOZZLE ON A CYLINDRICAL VESSEL

PURPOSE: Establish the maximum allowable working pressure (MAWP) for an obround nozzle in a cylindrical vessel per ASME Section VIII, Division 1, UG-101

The strain measurement test procedure per UG-101(n) was used for this test. Seven gages were installed on the nozzle neck and shell. Based on a Finite Element Analysis (FEA), the strain gages were located as close as possible to the high stress regions. Rectangular rosette strain gages were utilized at each location to allow calculation of the maximum and minimum principal strain due to internal pressure. Strain gage results were obtained for each gage at 5 psi increments over the required pressure range. According to UG-101(n)(3)(b), the test must be discontinued when any gage exceeds 0.2% or 2,000 microstrain after the pressure is released. The pressure value at that point is the MAWP of the shell or nozzle.

STRAIN GAGE ROSETTE LOCATIONS

