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Page 1 of 1

Appendix-2 Flange Rigidity per 2008 Addenda:

Have the flange rigidity requirements been annulled? No, but the 2008 Addenda to the ASME VIII-1 Boiler and Pressure Vessel Code does have an interesting revision to Appendix-2, governing custom-designed flanges. Flange rigidity calculations can be disregarded for the following conditions:

- Field Trial: Successful service experience
- Fluid Type: Nonlethal and nonflammable
- **Design Temperature**: for the range -20F (-29°C) to 366F (186°C)
- **Design Pressure**: Up to 150PSI (1,035 kPa)

This is all presented in the nicely written paragraph 2-14 shown in the figure below. The required calculation of the stresses and the determination of allowable stresses, as laid out in 2-7 & 2-1, do not change. However, it is the additional burden imposed by the rigidity calculations that is lifted for this narrow window of conditions.

Does this really help?

For the conditions specified above, this will be a definite advantage. However, the catch will be (as it has been with Code case 2547), to demonstrate to the Canadian Jurisdictions "successful service experience". We'll have to see...

2-14 FLANGE RIGIDITY A08 (a) Flanges that have been designed based on allowable stress limits alone may not be sufficiently rigid to control leakage. This paragraph provides a method of checking flange rigidity. The rigidity factors provided in Table 2-14 have been proven through extensive user experience for a wide variety of joint design and service conditions. The use of the rigidity index does not guarantee a leakage rate within established limits. The use of the factors must be considered as only part of the system of joint design and assembly requirements to ensure leak tightness. Successful service experience may be used as an alternative to the flange rigidity rules for fluid services that are nonlethal and nonflammable and designed within the temperature range of -20°F (-29°C) to 366°F (186°C) without exceeding design pressures of 150 psi (1 035 kPa).

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