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General Comment

1) Section 3.1.10: Extension of the Best-Fit Mean Curve from 10^6 to 10^11 Cycles
Extension of the best-fit mean curve from 10^6 to 10^11 cycles is too conservative.
EN 13445 uses the cut-off limit at 10^8 cycles and the following equation based on the Haibach Model is applied to variable amplitude loading.
ΔSR=(C3/N)^0.1 for N>= 2x10^6 cycles
Also, Giga-Cycle-Fatigue Subcommittee of the Atomic Energy Research Committee of the Japan Welding Engineering Society studied on fatigue in giga-cycle regime. Fatigue tests of 316NG and SFVQ1A (equivalent to SA 508 Gr.3 Cl.1) up to 10^9 cycles were performed and confirmed that internal fracture did not cause a sudden drop in fatigue strength [*1, 2].
Fatigue tests above 10^8 cycles are very difficult and the extension over 10^8 cycles is not realistic.
Therefore, the provision of EN13445 is a reasonable methodology.

*1: Ogawa, T., et al., "Investigation of Effect of Pre-Strain on Very High-Cycle Fatigue Strength of Austenitic Stainless Steels," Journal of Power and Energy Sytems, Vol.3, No.1, 2009.
*2: Sato, M., et al., "Giga-Cycle Fatigue Strength Properties of Low-Alloy Steel SFVQ1A Evaluated by Ultrasonic Fatigue Test," Transactions of the Japan Society of Mechanical Engineers, Series A, Vol.78, No.789, 2012. (in Japanese)

2) Section 3.1.6: Fatigue Life Model

The dependency of tensile strength on fatigue curve is well-known. The fatigue design curves of EN13445 are specified for tensile strength class. Design-Fatigue-Curve Subcommittee of the Atomic Energy Research Committee of the Japan Welding Engineering Society is developing design fatigue curves and has confirmed the dependency of tensile strength on fatigue curves [*3].
And so, the dependency of tensile strength on fatigue curve should be incorporated into the design fatigue curves so as to perform reasonable design.

*3: Kanasaki, H., et al., "Proposal of Fatigue Life Equations for Carbon & Low-Alloy Steels and Austenitic Stainless Steels as a Function of Tensile Strength," PVP2013-97770, ASME, 2013.

3) 4.2.2: Strain Rate (Austenitic Stainless Steels)
The upper strain rate is determined 10%/s by extrapolating from the data less than 1.0%/s in Figure 85 and 86. However, Fukuta, et al. [*4] showed the data above 0.4%/s in PWR environment and concluded that the threshold strain rate at Fen = 1 was estimated to be lower than 3%/sec for all austenitic stainless steels. Therefore the upper strain rate of 10%/s should be reexamined.

*4: Fukuta, Y., et al. “High Strain Rate Effects on Environment Assisted Fatigue for Austenitic Stainless Steels in PWR Environment,” PVP2013-97158, ASME, 2013.

4) 3.1.7: Heat-to-Heat Variability
95% criterion is applied. The validity of 95% criterion on fatigue data should be described.

5) Errata
- The upper side of pp.100: “(c)” should be deleted.
- Figure 88: “0.3%, DO” should be corrected.