- **Tensile and Hardness Tests**

Average hardness increased for parent metal that was artificially aged and then subjected to cryogenic treatment. No significant differences were seen in tensile strength for as-welded and cryogenically treated specimens.

- **High Cycle Fatigue (HCF) Tests**

HCF testing was performed at ambient temperature for as-welded and cryogenically treated specimens. Figure 3 indicates that no noticeable improvements were seen in cryogenically treated specimens.

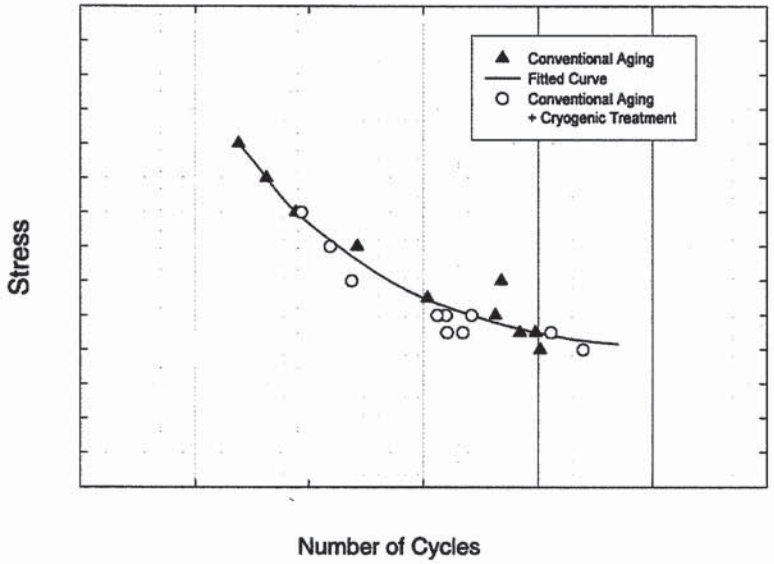


Figure 3. HCF strength

- **Stress Corrosion Cracking (SCC) Tests**

Table 3 shows significant improvements in SCC lives for cryogenically treated specimens.

**Table 3 - Stress Corrosion Results for Weld Specimens**

| Specimen Condition | Stress Level (%YS) | Failure Ratio | Highest Residual Stress in HAZ | Days to Failure |
|---|---|---|---|---|
| As-welded | 50 | 1/3 | 23.9 ksi | 65 |
| | 75 | 2/3 | | 3, 6 |
| Cryogenically treated | 50 | 0/3 | 12.2 ksi | -- |
| | 75 | 2/3 | | 22, 84 |