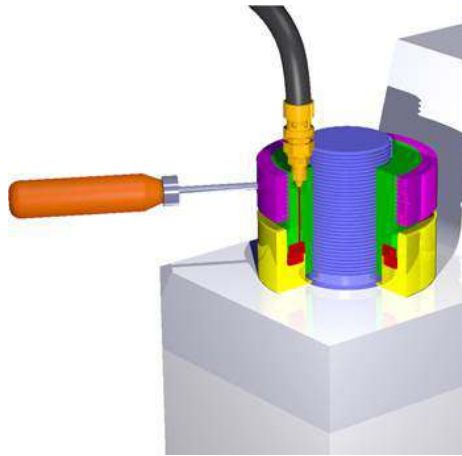


CASE STUDY | HTN

Nuclear Power Plant: Steam Turbine Inner Casing Closure

PROVIDING

- Greater loads within restricted footprints
- Shortened turnaround times
- Easy adaptation for retrofitting to studs not extending above nuts



HYDRAULIC TENSIONING NUT (HTN)

PROBLEM

1. Insufficient loading using conventional torquing methods caused warped flanges
2. Leakage between stages due to gap between flanges (known as "smile")
3. Labor-intensive operations led to over-budgeted turnarounds
4. Contaminants in the steam path

SOLUTION

1. Simultaneous tensioning of studs provided precise loading allowing full flange closure
2. Developed sufficient clamping to overcome warping of inner casing
3. Labor hours drastically reduced – turnaround reduced by one month
4. Water-charged hydraulic nuts eliminated contamination concerns

