

Charge Compressor 2/3 Stage Fouling/High Vibration

Johnny Dugas

Senior Technical Associate

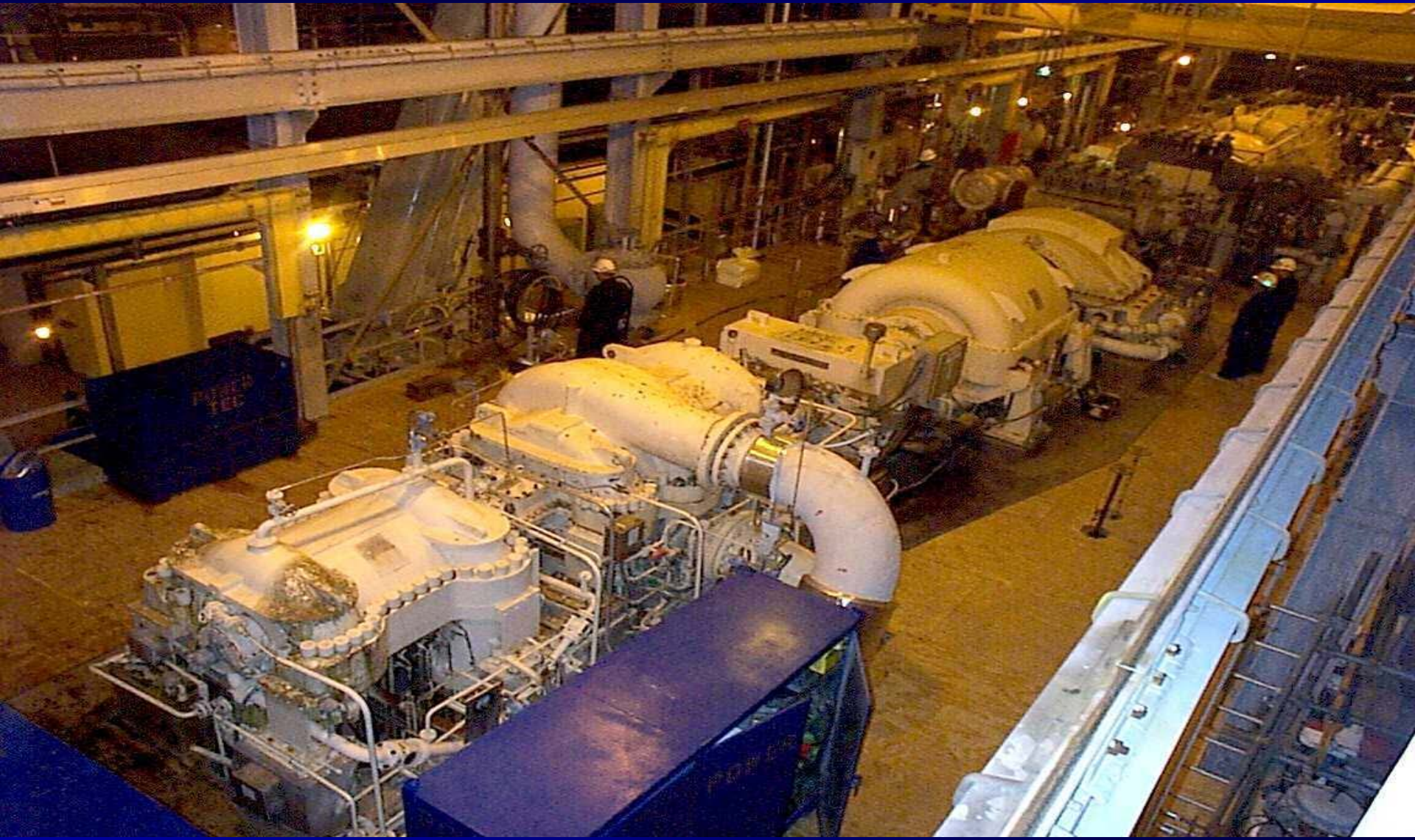
DuPont Sabine River Works

Orange, Texas

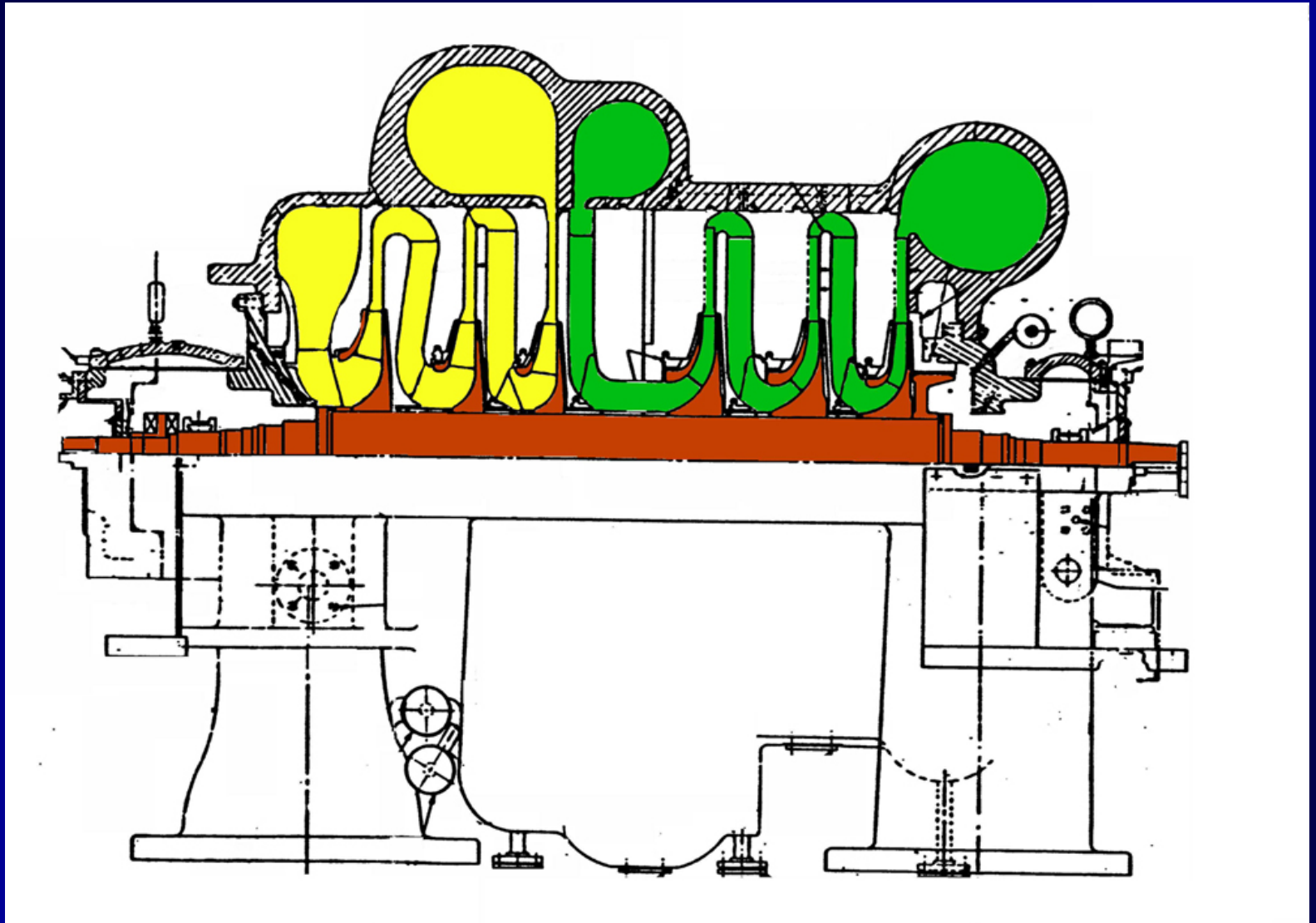
Problem

- Significant performance loss and high vibration on the Charge Gas 2/3 stage compressor was experienced one year following the 2003 Turnaround.
- This followed two consecutive, highly successful runs after application of antifoulant coating in 1995.

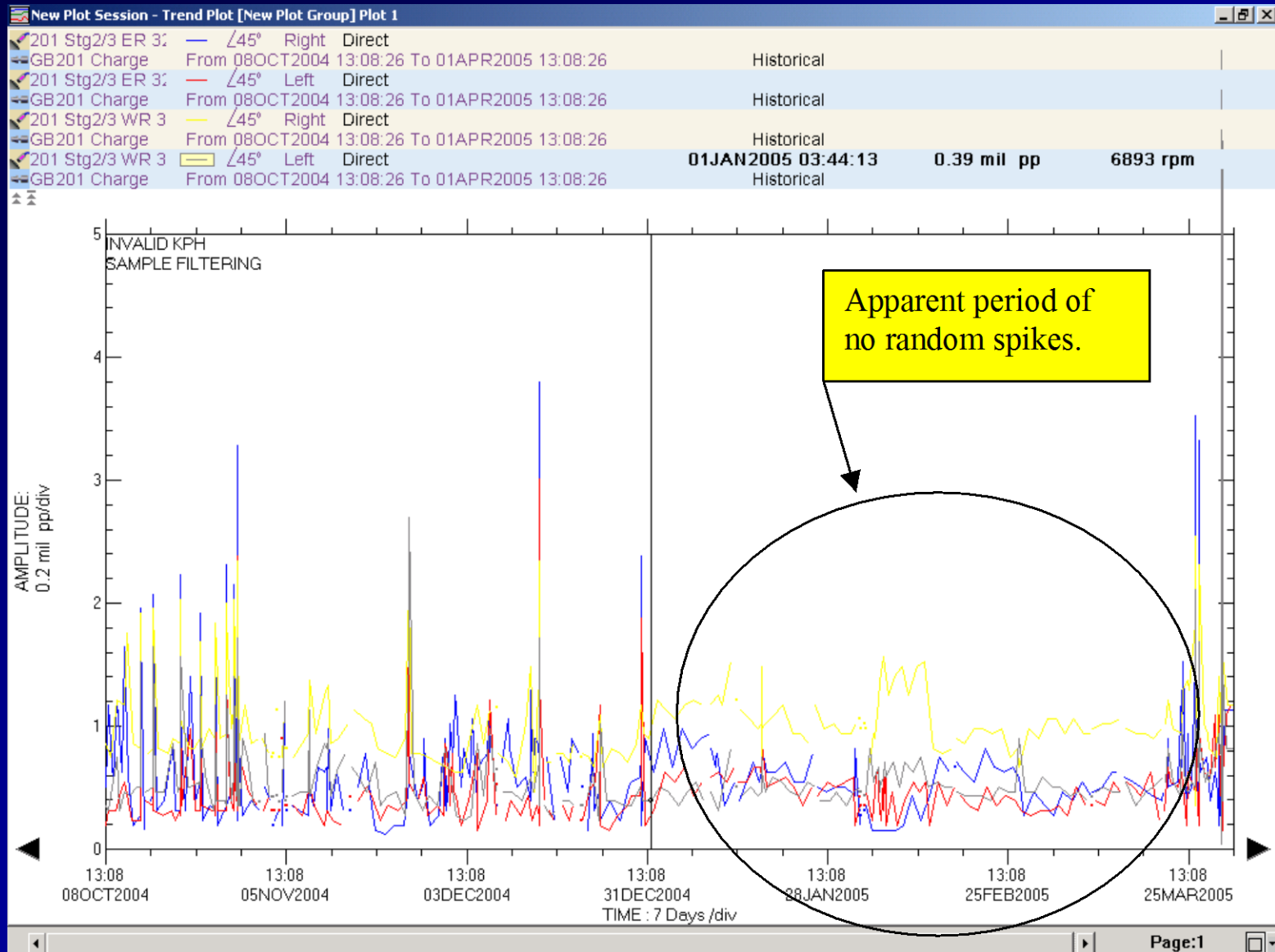
GB201 Compressor Train



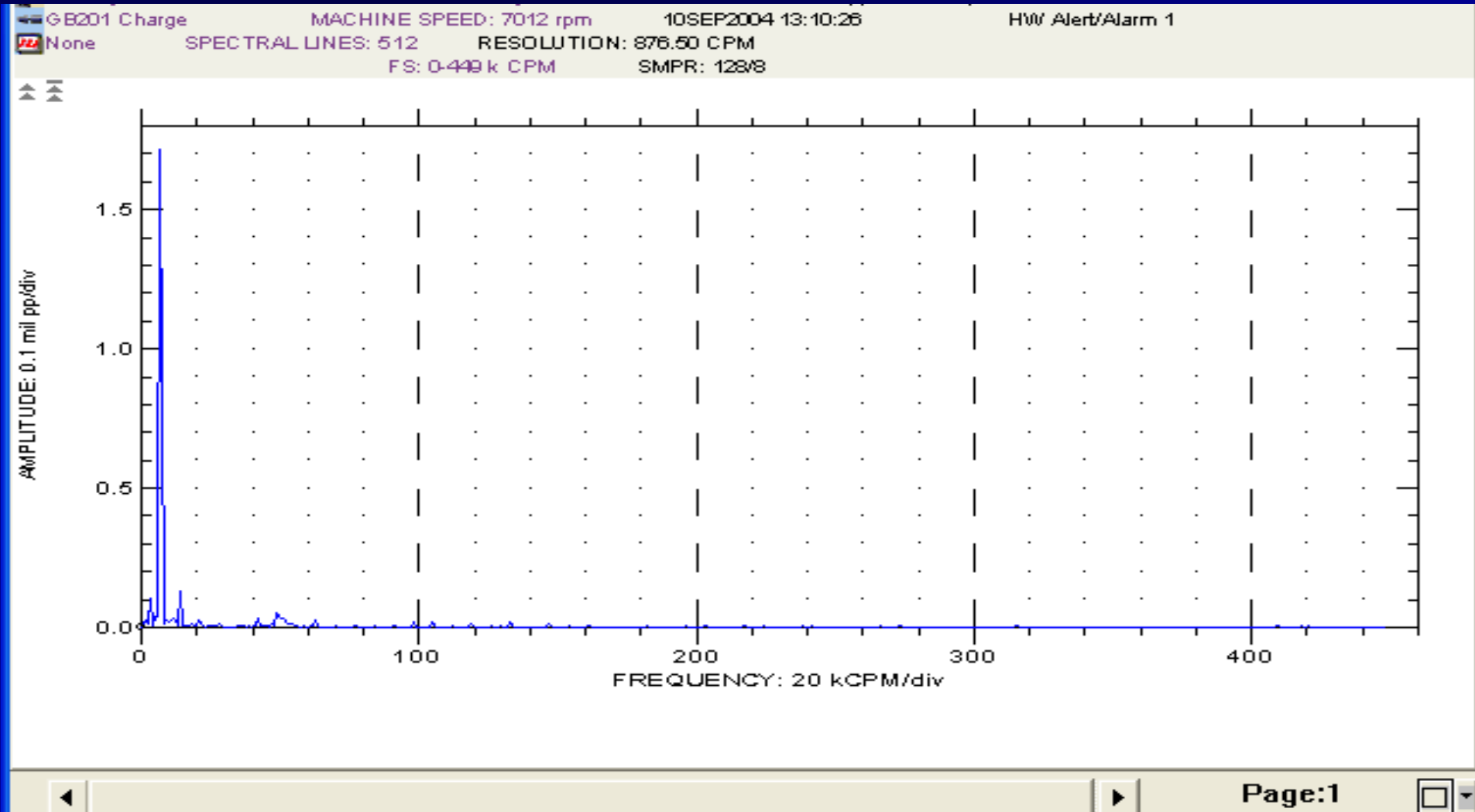
2/3 Stage Compressor Cross-Section



2/3 Stage Vibration Trend

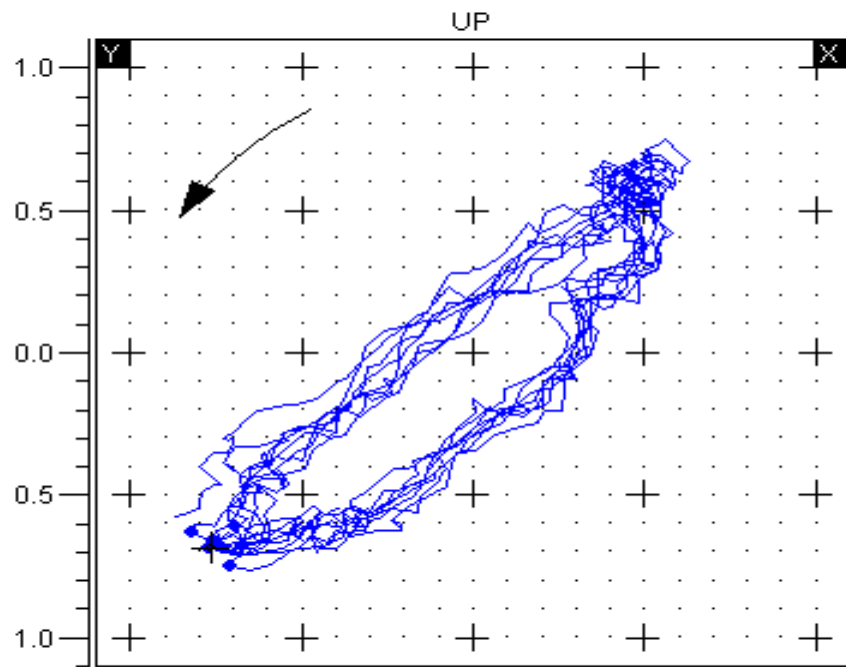


Frequency Spectrum

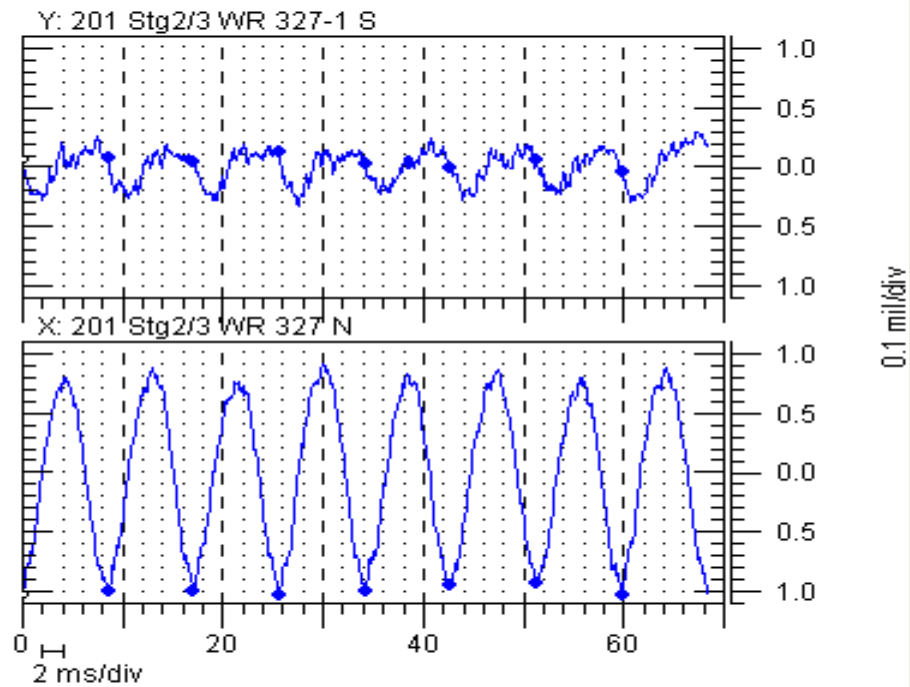


Restricted Orbit

Y:201 Stg2/3 WR 327-1 S /45° Left SYNCH WF AMP : 0.63 mil pp
X:201 Stg2/3 WR 327 N /45° Right SYNCH WF AMP : 1.95 mil pp
GB201 Charge: 10SEP2004 13:10:26 HW Alert/Alarm Direct 7012 rpm
FS: 0-64 X SMPR: 128/8

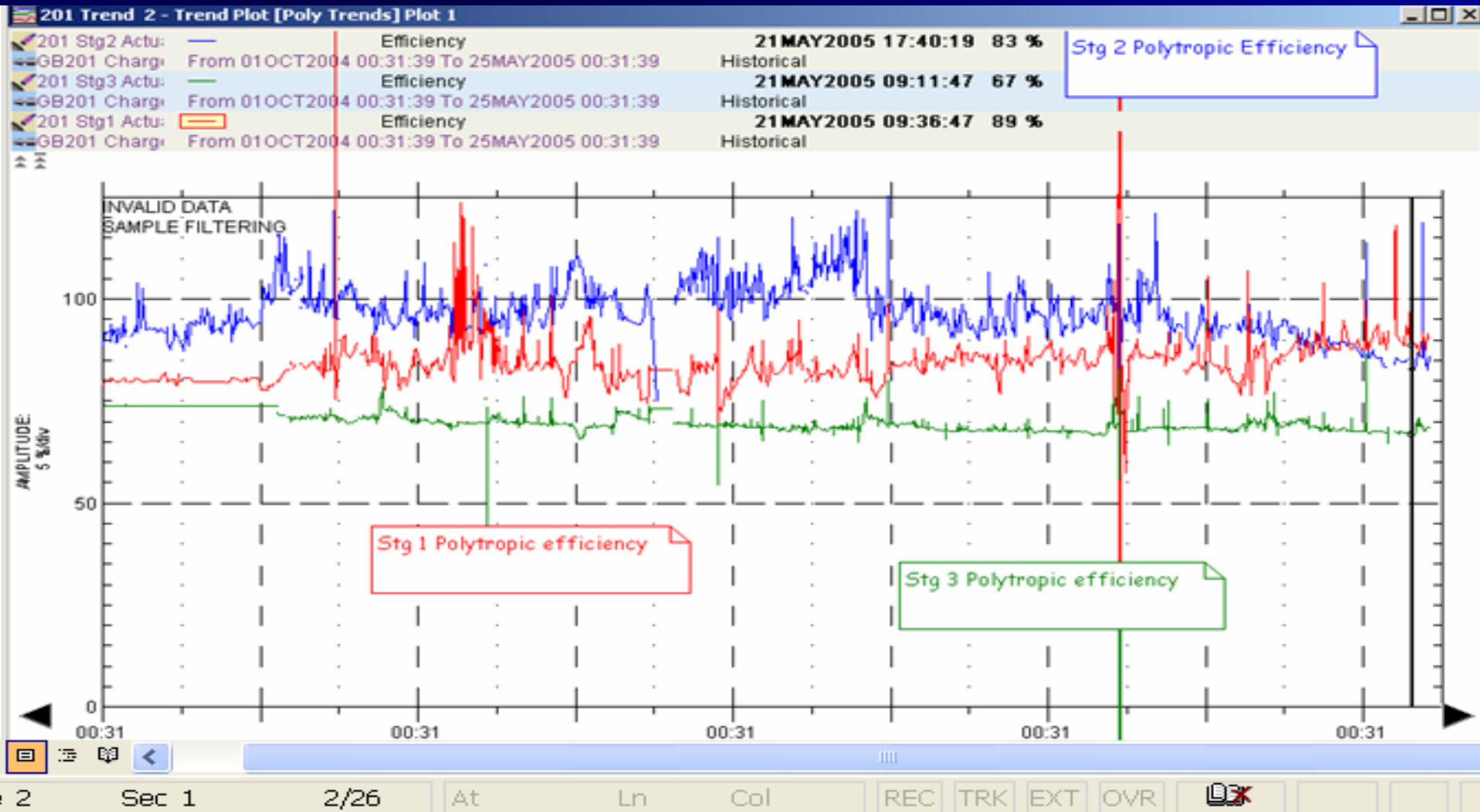


AC COUPLED

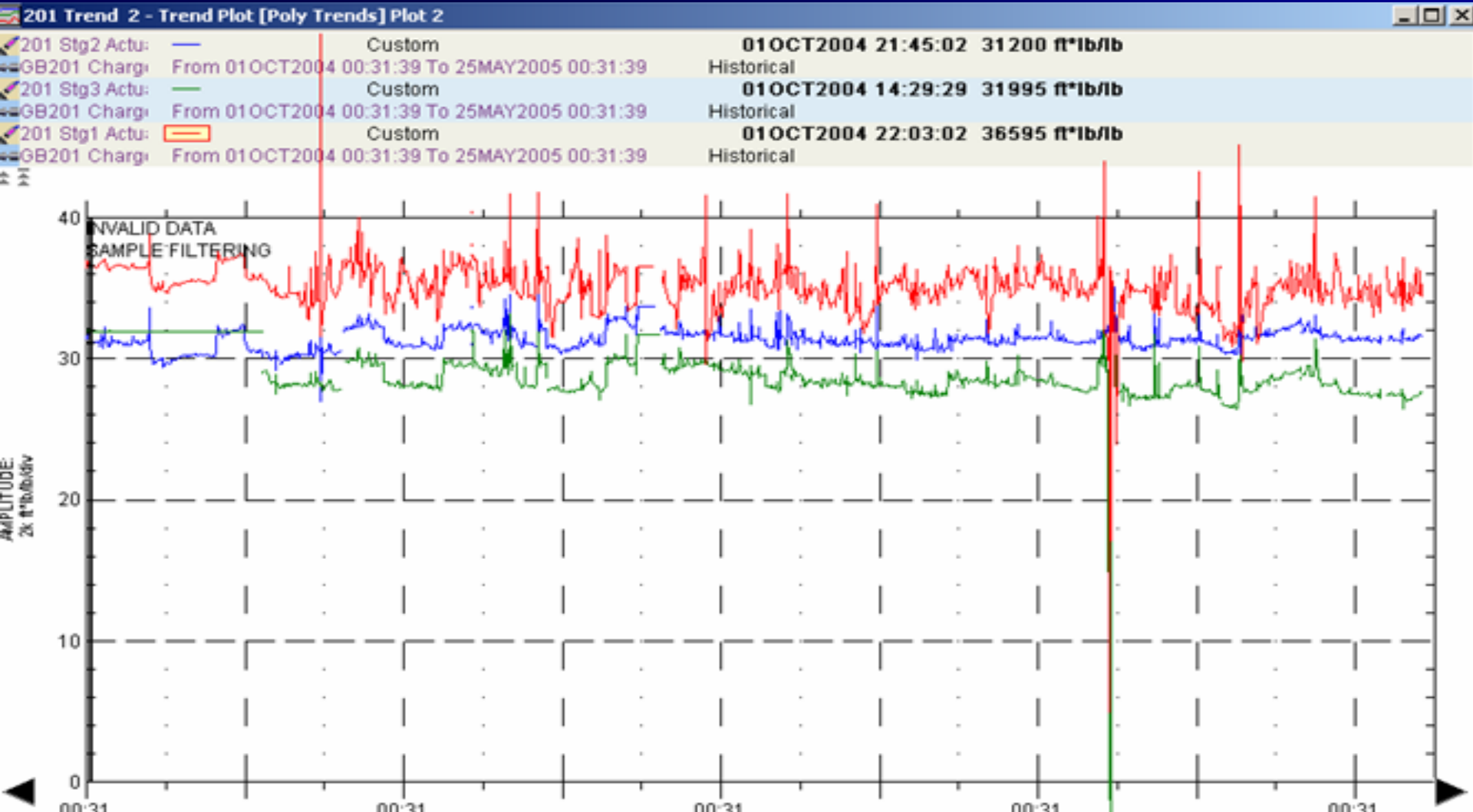


ROTATION: X TO Y (CCW)

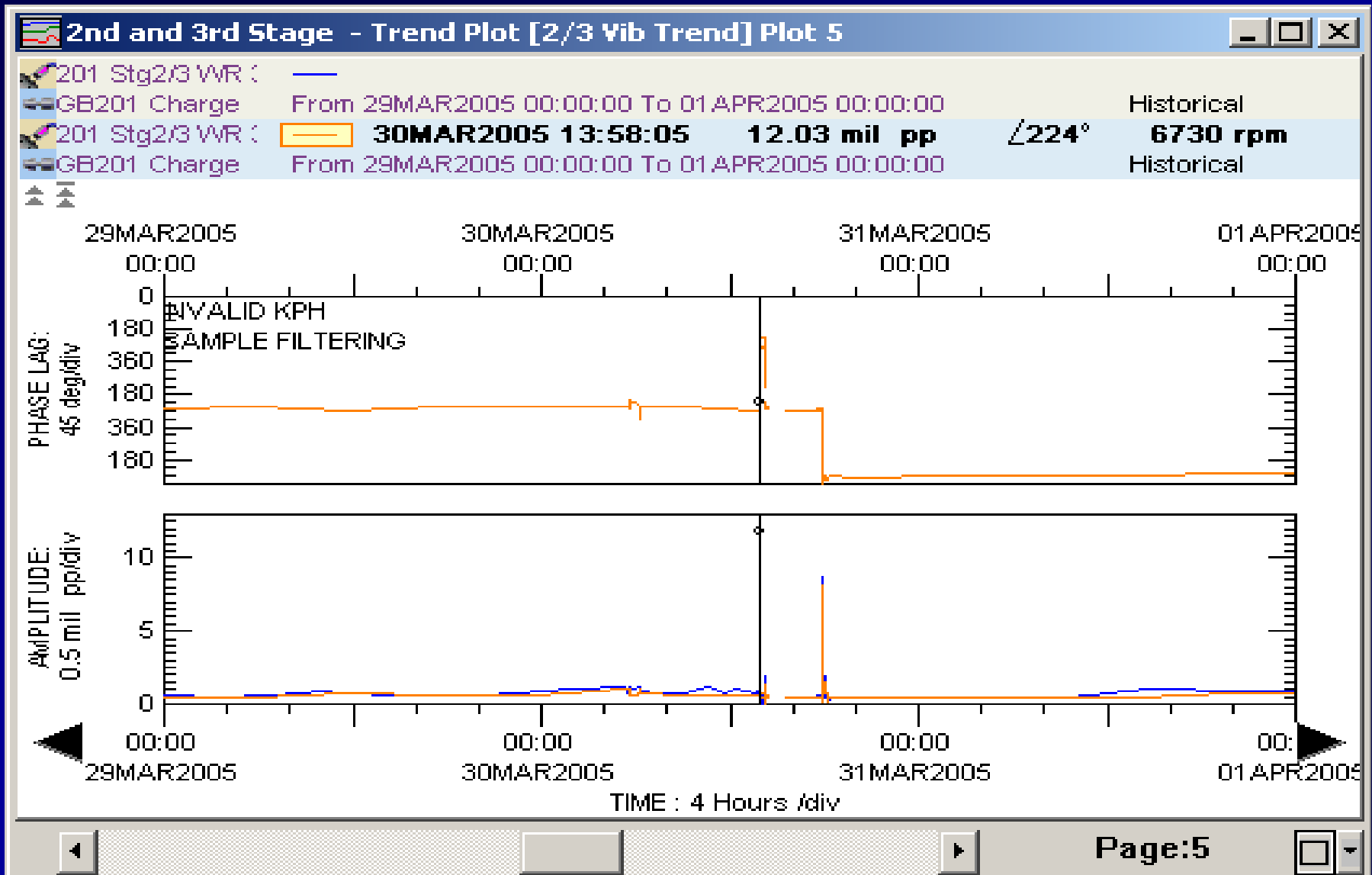
Efficiency



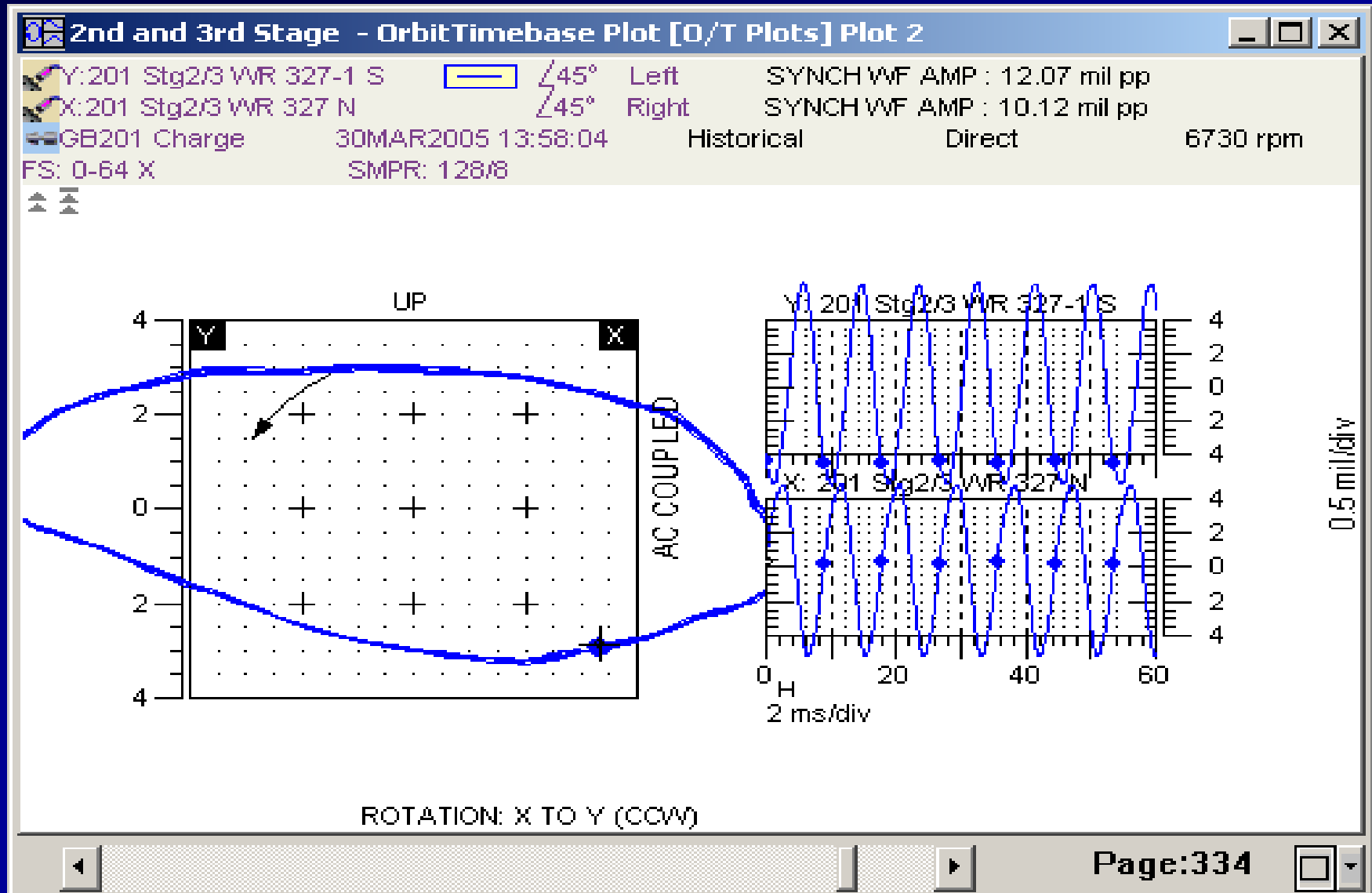
Head



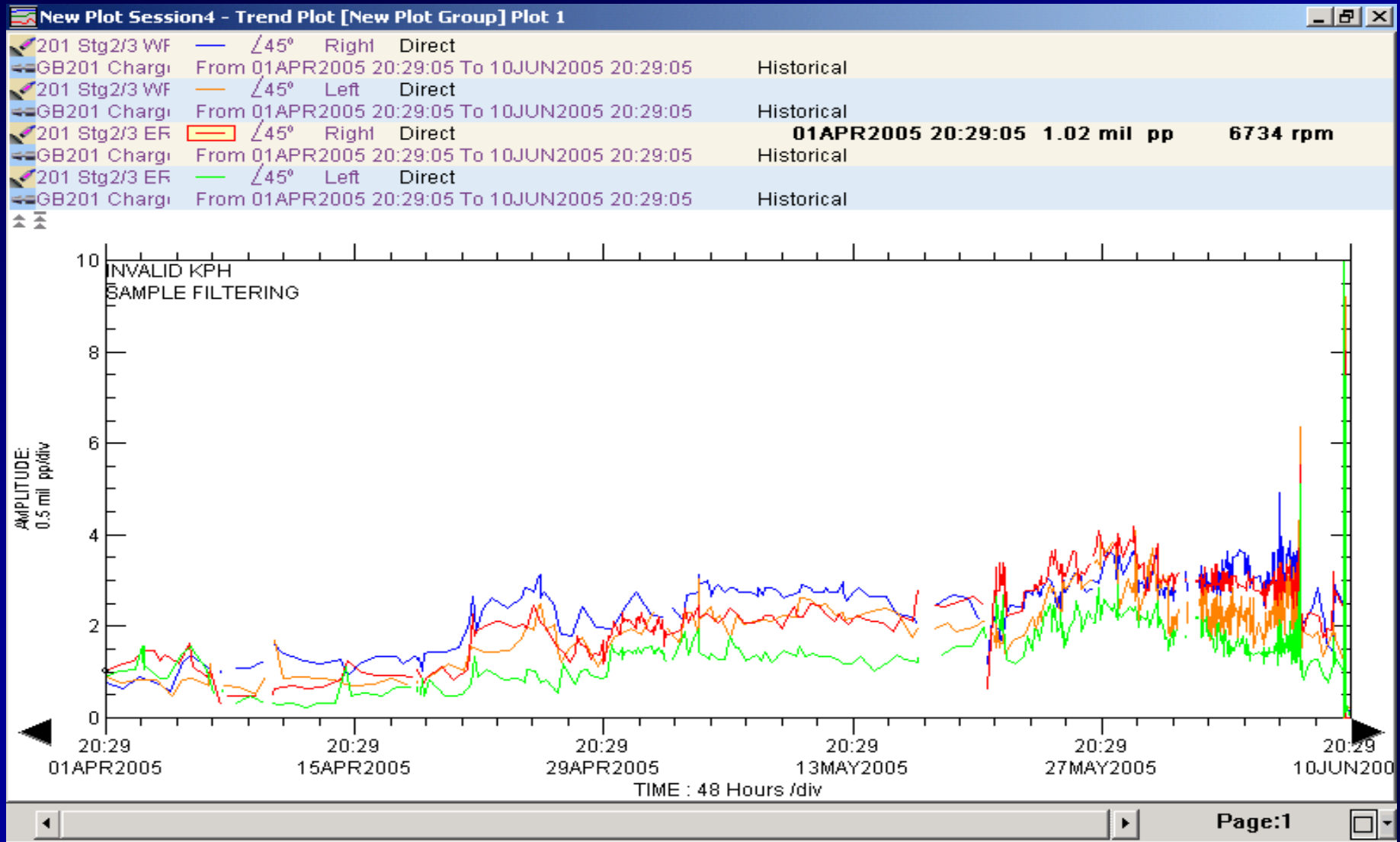
March 30th Interlock

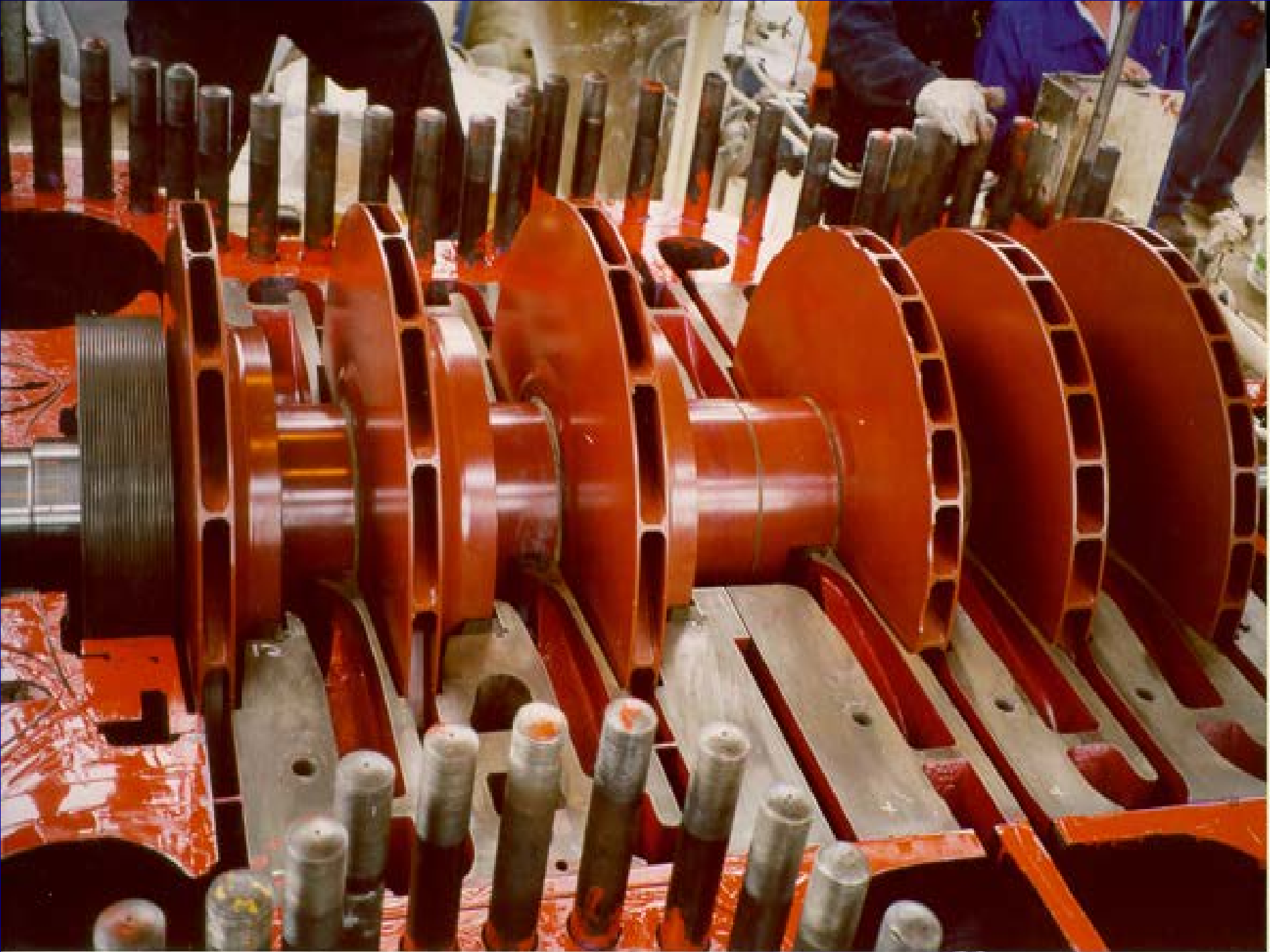


Restricted Orbit (Rub)



2/3 Stage Vibration Prior to Oil Flush







Hard Rub







Summary

- Performance loss and vibration was due to severe fouling.
- Severe fouling led to axial and radial rubs.
- Severe fouling was due to liquid carryover from suction drums.
- 2/3 stage compressor overhauled and returned to service
- Suction drum demisters upgraded to high efficiency.

Current Performance

