

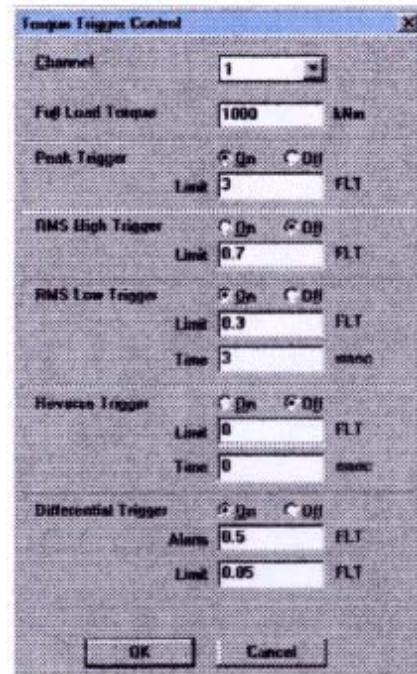
# On-line Fatigue Monitoring Mill Spindles



**Corus Consulting Limited**, Teesside Technology Centre, P.O. Box 11, Grangetown, Middlesbrough, Teesside TS6 6UB U.K. Telephone: +44 (0)1642 467144 Fax: +44 (0)1642 460321 E-mail: colin.notman@corusgroup.com

An on-line industrial monitoring and diagnostic system has been developed for application to rolling mill drives. The system monitors a number of parameters simultaneously and analyses the associated data to aid both maintenance and process diagnostics. Systems are in continuous use at the Teesside Beam Mill and the Heavy Section Mill at Scunthorpe.

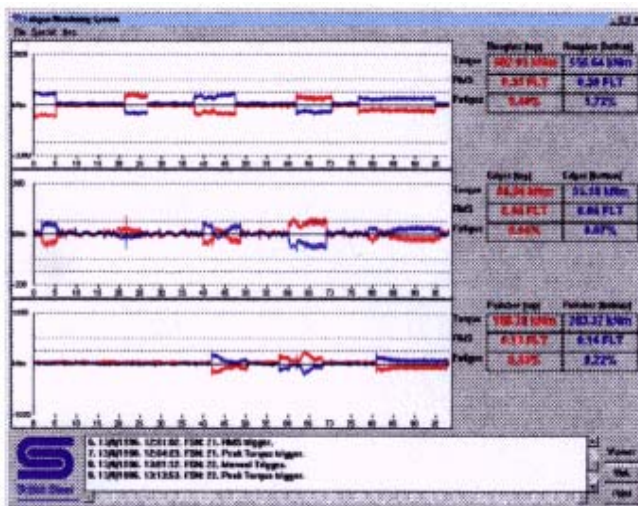
A PC is used for data storage and display, and this is linked to a transputer network for data acquisition and processing. The user interface is in the standard windows environment making it accessible to the non-expert user. In normal operation the system monitors process parameters continuously, displaying them in real time.



**POP-UP MENU - TRIGGER SETTINGS**

The main benefits of fatigue monitoring are:-

- Continuous monitoring and recording of fatigue
- Historical records available for any event
- Linked to an alarmed warning system
- Allows a reduction in the spares holding
- Improved equipment and process control
- Can be applied to any monitored structure

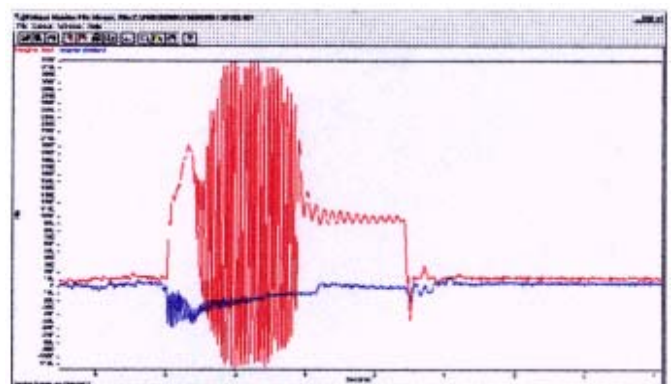


**ON-LINE DISPLAY OF ROLLING TORQUES AND FATIGUE LIFE**

Concurrently a fatigue life calculation is made giving an assessment of the remaining life of the drive.

The system includes a transient data capture facility. This is configured using a pop-up menu into which various trigger conditions can be set, enabling abnormal events to be captured.

Off-line interrogation of triggered data capture is achieved by use of an integrated data presentation and analysis tool. Typical events captured include loose roll sleeve problems.



**CAPTURED DATA - ROLL SLEEVE PROBLEM**