

## **PREVENTION OF STRESS CORROSION CRACKING IN SUPERHEATERS**

In keeping with the MECS commitment to provide Total Quality plants and service to our customers, this Technical Brief outlines some common errors that lead to stress corrosion cracking in high alloy superheaters.

For stress corrosion cracking (SCC) to occur, the chemicals required to trigger SCC must be present; the material must be susceptible to SCC; and there must be high stresses. Poor steam purification within boiler drums and break downs in the control of chemicals within the boiler water are the two main factors that have lead to SCC problems in operating acid plants with high alloy superheaters. MECS suggests the following to further reduce the risk of SCC in superheater tubes bundles:

Evaluate the impact of consistently running the unit above the design rate; this can overload the steam purification equipment which results in poor steam quality leaving the boiler system. This can directly contribute to the presence of chemicals in the superheater bundle leading to SCC.

Consider the use of a continuous monitoring sodium analyzer in the saturated steam line from the boiler drum. Standard Operating Procedures should address the proper operator response to an alarm to take the necessary preventative action to minimize or prevent damage to capital equipment.

Please contact your MECS representative should you require assistance with your specific installation or have any questions. Consultation will be provided at nominal and standard industrial rates.