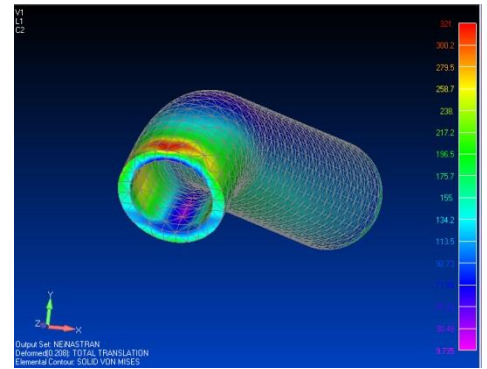
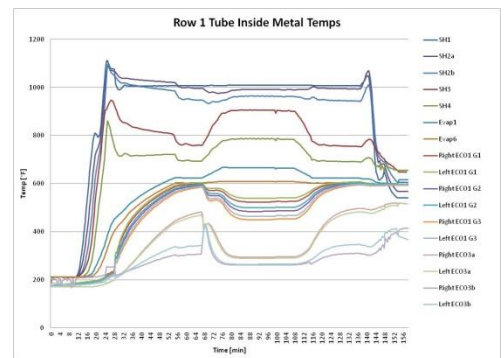


Hamon Deltak, Inc. is a world leader in the design, engineering, manufacturing, and service of steam generators and auxiliary equipment. Services available to your company are:

- Cycling fatigue
 - Finite element analysis to evaluate static and dynamic loading of boiler components
 - Dynamic thermal effects during transient operation
 - Start up and shut down ramp rates on HRSG components
 - Effects of changing from base load to cycling operation
 - Design life analysis – combining creep and fatigue effects
- Piping flexibility – piping modifications
- Root cause failure analysis
 - Tube failure
 - Control system issues
 - Performance issues
 - Liner system failures
 - Vibration and noise issues
- Duct burner equipment capabilities
 - Changing from base load to part load
 - Increase steam capacity
- Emission equipment capabilities
- Steam purity
- Freeze protection
 - Short and extended duration
 - Piping instruments
- Equipment inspection
 - Boiler equipment (i.e. tubes, headers, valves, instruments, drums, liner, etc.)
 - Emission equipment
 - Duct burner equipment
- Performance and operation
 - Performance testing and evaluation
 - Early detection of boiler pitfalls
 - Transient operation
- Blowdown/Flash Tank system
- Study HRSG Impact
 - Gas turbine
 - Increase efficiency
- Control system modifications
- Training at Hamon Deltak, or at your place of business
- Short and long term lay-up recommendations



Finite Element Analysis (FEA) model showing tube stress on a refinery boiler



Performance study on the temperature of each panel over time