

Find Out How We Can Help You Optimize Your Power Generation Plant

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Optimization Services for Power Generation Plant



Do you want to know how to get maximum life out of your power generation plant, avoiding the waste of premature replacement and the consequences of failure? We can help you...

Do you want to know where the biggest failure risks are in your plant but cant afford the downtime to check everything out? We can help you...

Run Your Plant with Greater Efficiency, Reliability and Safety

Optimize Inspection and Maintenance Procedures ... Save Downtime and Costs

Avoid Major Plant Failure and Improve Reliability

Lower Your Insurance Premiums

How We Can Help You Optimize Your Power Generation Plant...

- **Provide advice on all material issues in plant and equipment, from conception to end of life**
- **Show you how to optimize the management of your plant and process operation so you can minimize inspections and maintenance plus maximize safety and productivity**
- **Provide you with solutions to problems, not just test results**
- **Offer you tools to optimize plant yourself**

Quest Reliability, LLC, is a Quest Integrity Group Company specializing in inspection, assessment and monitoring of critical assets for the power generation industry.



Through our global service network, we provide high value risk-directed asset management, structural integrity and plant lifetime optimization services to thermal, geothermal and hydro-power generation plants worldwide.

Tools We Can Offer to Optimize Your Plant

The Quest Integrity Group has a portfolio of world-class inspection and structural integrity analysis tools. These technologies include LOTIS[®] and FTIS[™] tube inspection capabilities and Quest Reliability's advanced finite-element analysis software packages such as FEACrack[™], FEAFlaw[™] and LifeQuest[™] HEP - a tool for modeling the creep behavior and remaining life of high energy, high temperature pipework.



Our clients are in a range of countries in North America, Australasia, and South East Asia, including:

- Thermo CoGen / HRST (Colorado)
- Empire Energy (Nevada)
- Westinghouse
- Arizona Public Service
- Genesis Energy (New Zealand)
- Verve Energy (Australia)
- Korea Atomic Research Institute

Areas of Expertise We Offer

Quest Reliability has close to 40 engineering consultants including 12 with PhD's. Our key staff have many years of practical experience in the power generation sector and several also have backgrounds in research and development. Our clients value the technical excellence that we bring to our work.

Our core areas of expertise include:

- Reliability management
- Risk-based methods for asset optimization
- Corrosion
- Metallurgy
- Materials engineering
- Structural integrity and fitness-for-service
- Finite element modeling and analysis
- Creep rupture analysis
- Remnant life assessment
- Key asset life assessment
- Process engineering
- CFD modeling
- Root cause failure investigation
- Specialised NDT (non-destructive testing)

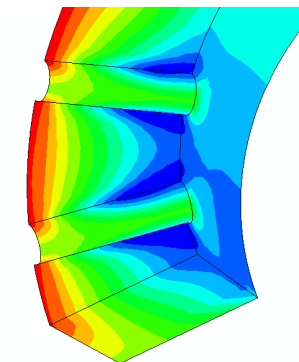
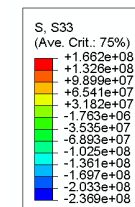
Our specific plant expertise:

- Turbine condition and life assessment
- Boilers and heat recovery steam generators
- Steam pipework
- Generators
- Transformers, cables and switchgear

Quest Reliability is involved in world class research programs that support our products and services.

Our Facilities and Equipment

- State-of-the-art diagnostic and non-destructive testing tools
- World class research and testing facilities for simulating aggressive environments over a wide range of temperatures and conditions



FE Model of Stresses in a Superheater Header

Some Recent Projects:

Fitness-for-service assessment of steam turbines

An inspection of a steam turbine disc showed indications of defects. A stress analysis and fracture mechanics assessment was carried out which proved that the turbines were actually fit for service and prescribed a required inspection frequency.

Remnant life assessment in high energy steam pipe work

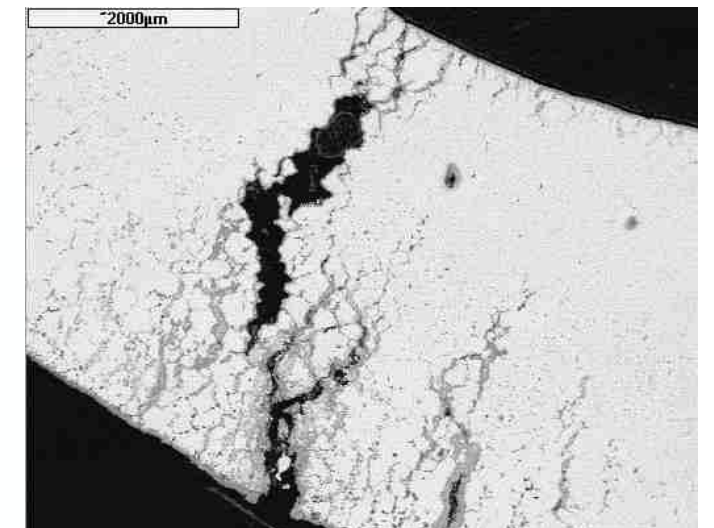
Defects were discovered in terminal welds in high energy steam pipe work at a power station. A critical engineering assessment was carried out to predict the time for the flaw to grow to the maximum tolerable size, in order to avoid failure. Consequently the power station could return to service without delay knowing when to re-inspect the steam pipes.

Engineering critical assessment of a de-superheater

Allowable flaw sizes including a crack growth analysis were computed prior to a scheduled outage for a steam generation unit. NDT findings in the de-superheater were then compared with this, allowing the unit to return to service without delay because the criterion for repair or return to service was now known.

Remnant life assessment of HP feed water heater

The safe number of starts required before a known flaw would reach critical size was calculated and recommendations with regards to the next inspection were provided.



Creep Damage In Steam Pipework