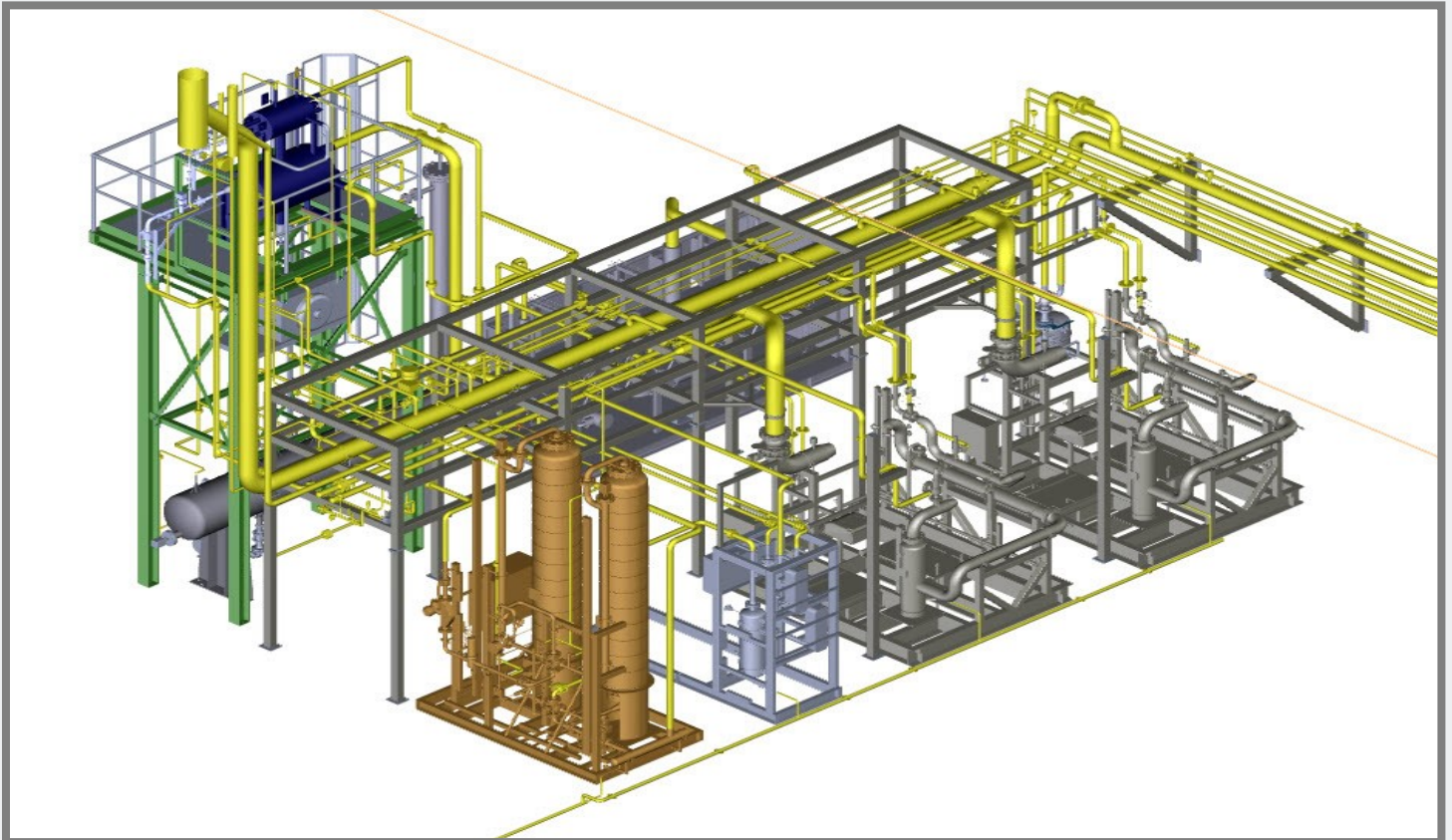




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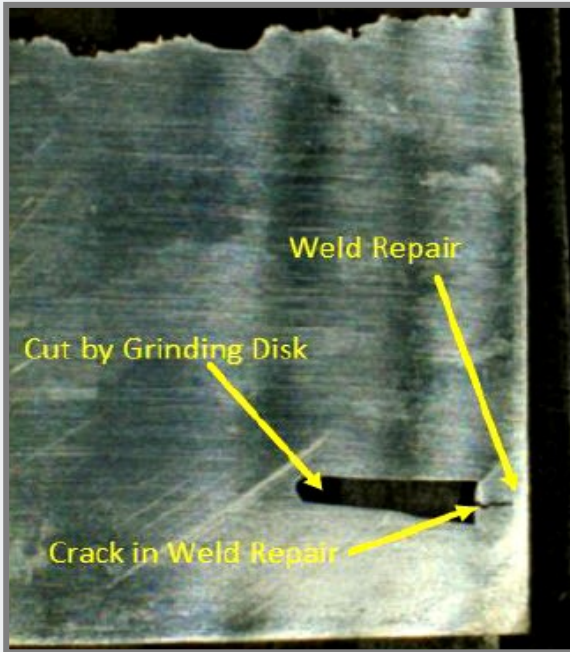


Simulation of Vibrations in Pipe Work

Arthur Carlisle—Consulting Engineer

Expert Witness

- Construction
- Power Generation
- Rotating Machinery
- Boilers and Steam Systems
- Turbines and Compressors
- Reciprocating Engines
- Renewables
- Materials Handling and Bulk Storage
- Operations Maintenance
- Electrical Networks and Switchgear
- Transformers



Analysis of Damaged Gas Turbine Blade

INVESTIGATIONS

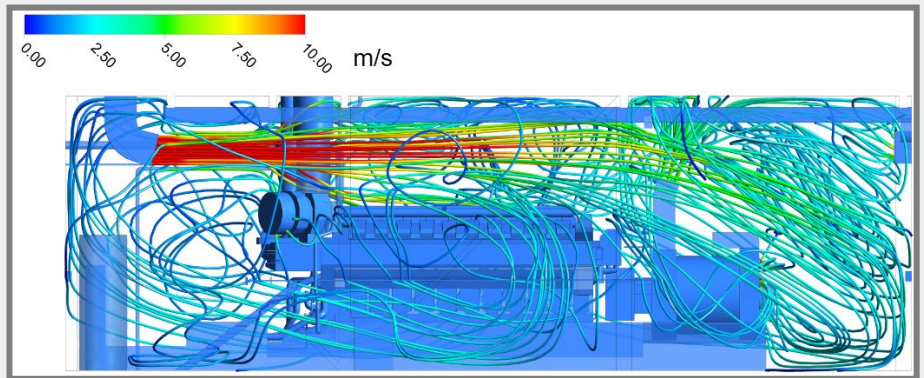
I go to great lengths to gain insight and understanding of failure events. To this end my investigations would typically include; conducting physical examinations of damaged plant, collecting evidence, gathering samples for laboratory testing, making extensive use of high resolution digital photographs, understanding the sequence of events and analysing their causes and impact on the incident, interviewing witnesses and plant staff, understanding the local geography, investigating prevailing weather conditions and CAT events.

I have participated and frequently led multi-disciplinary parties into conducting theoretical and laboratory analysis into failure events.

On conclusion of my investigations and analysis, I issue a report with details of the incident and my findings and opinions.

FAILURES

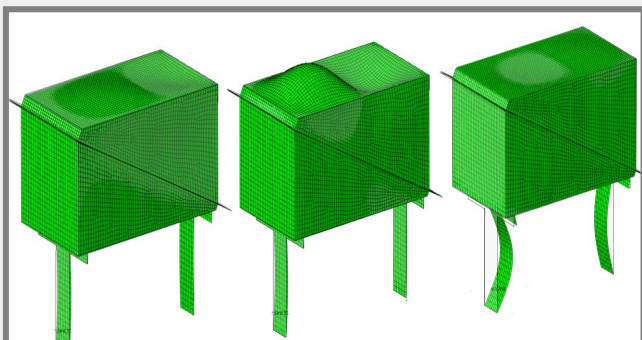
- Gas Explosion Engine Failure, UK
- Rock Crusher Failure, UK
- Transformer Failure, Spain
- Damaged Air-cooled Radiators, Australia
- Compressor Vibrations, Malaysia
- Tank Failures, UK
- Turbine Blade Failures, UK
- Steam Turbine Failures, UAE
- Wind Turbine Failure, US



Modelling of Air Flow Inside an Engine Hall

ROOT CAUSE ANALYSIS

- Major Failure Events
- Accidents and Incidents
- Reduced Life Cycle of Plant
- Premature End-of-Life of Equipment



Finite Element Analysis Modelling Vibrations

As Expert Witness, I have applied my expertise as an Engineer with broad experience working at senior level on plant and in industry, advising on numerous matters for International Arbitrations and in Court.

Appointments have included fault analysis, root cause investigations, damage assessments, recovery, repairs and restoration, and cost management.

Investigations encompass vibration analysis, metal fatigue, corrosion, creep, wear and tear, misuse, evaluation of maintenance and operating practices, environmental factors, operational data extraction and analysis.

Following completion of investigations, I draft an Expert Report and, where required, the reports follow a legal format and are used by professionals in legal proceedings.



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