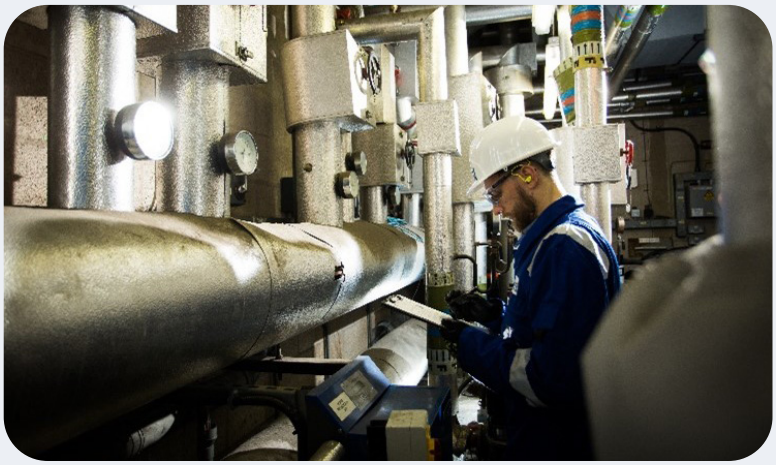
Inspection, Lifetime Monitoring and Maintenance of Pipework Supports

Project Objective

The lifetime monitoring of feed and steam pipework supports is crucial for ensuring the continued safe operation of nuclear power stations. Over time, degradation mechanisms such as fatigue, creep, and corrosion can compromise the functionality of pipework supports. Kinectrics was engaged to assess the integrity of these supports and provide detailed recommendations for ongoing monitoring and maintenance to mitigate the risk of failure and ensure safe, reliable operation.

Project Scope:

- A comprehensive assessment of feed and steam pipework supports, targeting long-term risks like fatigue, creep, and corrosion.
- Advanced FEA modeling to analyse stress distribution and fatigue life.
- Creep and fatigue assessments following industry standards to identify potential failure points.
- Recommendations for monitoring, inspection, and maintenance to mitigate risks and ensure reliable operation.
- Practical measures to extend operational life without costly replacements or shutdowns.



Kinectrics personnel are trained to provide remedial action to any defects encountered.

Technical Approach

1. Data Collection: We conducted a detailed survey of the plant's pipework systems, gathering operational data including temperature fluctuations, loading conditions, and inspection records of the supports.

2. Finite Element Analysis (FEA): Using advanced FEA tools, we modeled the pipework systems to assess stress distribution and fatigue life. The analysis focused on critical load cycles and identified potential failure points within the supports.

3. Creep and Fatigue Assessments: Creep and fatigue assessments were carried out using the gathered data and analytical results to evaluate the long-term operational risks. These assessments were aligned with nuclear industry standards to ensure compliance and safety.

4. Risk Mitigation and Recommendations: Based on the analysis, Kinectrics provided targeted recommendations for the inspection, monitoring, and maintenance of the pipework supports, focusing on mitigating high-risk areas and extending the operational life of the systems.

Location: United Kingdom

Value Added Results

Our detailed assessment and monitoring of the feed and steam pipework supports provided the client with critical insights into the long-term integrity of the systems. By utilising advanced analysis tools and industry-aligned methodologies, we were able to recommend targeted maintenance strategies that reduced the risk of failure and extended the operational life of the pipework systems, ensuring continued safe and efficient operation.