Client Reference

Gas Powered Boiler Maintenance Improvement Plan

Client Background

Our client reticulates natural gas and service more than 8500 domestic, central-water heating, hospitality, industrial and power generation businesses in an area in South Africa. They also provide environmentally friendly, safe, reliable and energy-efficient Piped Natural Gas.

Many of their customers are reliant on gas supply for the smooth running of their operations, requiring a reliable and safe supply of gas, 24/7.
Our client identified a problem with reduced operational availability of gas-fired boilers at several provincial hospitals, which are used for heating, sterilization and cleaning in the hospitals.

We were requested to do an assessment to identify the causes for the poor reliability of the boilers and provide guidance on improved maintenance practices.

Key Challenges

- Our client is contracted to supply gas up to certain point to the hospital facilities within this scope. Therefore, our client owns the gas reticulation infrastructure to the hospital up to the point where their gas meter is installed and the flange provided for the hospital to connect to the gas reticulation network.
- As a service provider, our client does not take responsibility for the maintenance of the boiler facilities and would need to work with the relevant department responsible for maintenance, to identify and rectify the failures.
- The condition of the boiler facilities varied greatly, some working very well and others not functioning at all.
- The lack of gas resulted in a lack of steam which could lead to non-compliance in daily cleaning practices in the most affected hospitals.

Although the general awareness around maintenance requirements increased significantly, the improvements to the overall condition of sites will only take effect as the department catches up with the backlog. Other factors that must be implemented to guarantee the success of the maintenance solution in support of statutory compliance includes the retraining of boiler attendants and maintenance artisans; establishing a dedicated network of reliable and appropriate suppliers; and the availability of accurate maintenance records for the boilers.

Pragma Consultant

Pragma Intervention

The boiler facility assessments included the following:

- Several site inspections with the engineering representative from the client to assess the status of each gas-fired boiler, identifying maintenance defects and proposing corrective actions. The client will continue these site inspections.
- Developed an evaluation matrix/scorecard with a rating scale from 1 to 5 to evaluate each boiler plant on 20 main categories.
- Developed a monthly report, highlighting observations, photos and corrective actions per site.
- Established a clear reporting and communication line back to the departments responsible for maintenance and major repairs.
- Identified the training needs of the operational and maintenance staff for effective boiler operation and care.

A full assessment report was provided, detailing the current condition of individual sites and a list of critical actions per site that will greatly improve the condition and reliability of each site.

Value Add

Financial benefits

Department of Infrastructure and Development of Health

- Reduction in repair and maintenance costs.
- Proactive identification of defects and potential failures triggers preventative maintenance, barring further, costly damages occur.
  - Where a water treatment or purification facility is partially operational, it can be damaging to the boiler tubes.
  - Poor water treatment in a boiler has significant adverse effects on downstream steam-operated equipment.
- Reliable gas-fired boilers ensure the constant usage of piped gas which is environmentally cleaner, sustainable and a cost-effective to other energy sources.

Other benefits

- Regulatory compliance has been re-instated in the boiler rooms.
  - Compliance addresses mandatory weekly, monthly and annual inspections, together with maintenance activities to ensure the optimal operation of the boiler room facility.
- There is a drive in quality improvement and in the health and safety culture, which both protects the health of employees and the reputational damage that occurs when accidents happen due to poor facility management.