REFINERIES

Continuous Skin Temperature Monitoring of Reformer tubes

Temperature monitoring in reformer tubes is paramount for the safe and smooth operation in refineries. High temperatures can lead to thermal stresses and material degradation in reformer tubes. Monitoring temperatures helps to assess the condition of the tubes and detect any signs of deterioration or damage, allowing for timely maintenance or replacement to avoid unplanned downtime and costly repairs.

CHALLENGES

- The extreme operating conditions within reformer units, including high temperatures and pressures, can make it difficult to accurately measure and maintain temperatures within the tubes
- The high temperatures, pressures, and corrosive environments within refineries can accelerate oil degradation and make accurate monitoring difficult.
- Achieving uniform temperature distribution along the length of the reformer tubes is crucial
- The sheer scale of refinery operations and the interconnections of different units make real-time monitoring and decision-making critical and difficult to achieve.

SOLUTION

- XYMA's Multi-point temperature Sensor is capable of measuring high temperatures at multiple points in real-time across any hazardous environment.
- The edge computing unit in the XYMA Electronics Unit is capable of performing advanced computations to extract temperature data from the received ultrasonic signals. The output from the edge classifiers is transmitted to the dashboard using industrial standard, wireless (or wired) communication technology using a transmitting unit. The status can be monitored in the client DCS system and also can be displayed in XYMA's customizable dashboard.
- It can measure the temperature range up from 25°C to 1450°C.The precise and accurate temperature measurement of the reformer tube can be detected.
- The AI- Powered soft sensors can provide 3D temperature profiles of the reformer tube and dashboard gives timely alerts to safely maintain industrial operations.
- Our XYMA sensors are compatible for all industrial standards and electronic unit is designed with ATEX certification assures that product has tested and met the necessary safety standards to operate in potentially hazardous environments.