Kuwait Oil Company implements AVEVA software to automate refinery processes to achieve goal of producing 4 billion barrels of oil per day by 2030.

Kuwait Oil

INDUSTRY
Oil and Gas

Goals

- To ensure an efficient operation at the KOC West facility.
- To reach the KOC overall goal of producing 4 million barrels per day (bpd) by 2030.
- To eliminate manual processes.

Challenges

- Retaining operational knowledge was difficult due to changing market conditions and requirements.
- Integrating a variety of software applications to close the gap between the enterprise and automation layers was necessary.

AVEVA Solution

- System Platform
- InTouch HMI
- Workflow Management
- Refining Operations Management

Results

- Improved operations and reduced costs due to automation of facility operations.
- Achieved successful integration with multiple systems as well as consolidation of visualisation dashboards and KPIs resulting in a streamlined business workflow.
- Potential revenue improvement of up to 5%.
- Reduction in operating costs by up to 10%.

AVEVA™

Kuwait Oil Company Optimises Production and Processing Operations with AVEVA Software Solutions

AHMADI, Kuwait – When oil was discovered in the Burgen field in 1938, the legacy of the Kuwait Oil Company (KOC) began. Today KOC, counts itself as the world's sixth largest oil producer in the world, with proven crude oil reserves of 104 billion barrels – an estimated 9% of the world's reserves.

KOC is responsible for the exploration, drilling and production of oil and gas within the State of Kuwait, as well as the storage of crude and delivery to tankers for export.

To assist in the company's oil production, KOC established Gathering Center 16 in West Kuwait, which is designed to maintain oil production from the region's Minagish oilfield, with the goal of achieving production of 120,000 barrels per day (bpd).

KOC found the key to reaching this goal was through the implementation of an integrated suite of automation software from AVEVA. The Refining Operations Management solution provides a comprehensive solution to streamline the processes that encompass KOC's production network with a unifying platform of applications that successfully interface with the company's collection of disparate systems.

"The purpose of the project was to design, engineer, supply, install, test and commission management information systems to acquire real-time field, facility and pipeline network data. With the implementation of the AVEVA software, we've improved the asset and business benefits of the West Kuwait Operating area by automating several processes which were previously done manually."

Nawaf Awad,
TPL Specialist I, KOC

Achieving successful unified management information systems

Over the last decade, industry-leading companies such as KOC have come to realize the need for standardising and transforming business processes. This requires "human" workflows and integrating software applications, often from multiple vendors, to close the gap between the enterprise and automation layers.

However, poor integration has resulted in information disconnects, delays and distortion, creating inefficiencies and preventing operations personnel from effectively responding to internal and external events in an increasingly dynamic business environment.

The KOC West Kuwait refinery operation consists of eight facilities which include gathering centers, booster stations and water facilities. The implementation of AVEVA software offers a business solution that drives consistent collaboration among team members with equipment to maximise operational excellence.

"By integrating multiple systems and providing consolidation of dashboards and KPIs along with business workflow, KOC is now able to achieve remote real-time data validation, visualisation, production and operation optimisation. In addition, we can access real-time tracking of reliability, integrity and HSE aspects, data historisation/archiving and associated works for improving the asset and business benefits in the West Kuwait Operating Area."

Nawaf Awad,
TPL Specialist I, KOC

Advanced workflow management for industry operations

To achieve successful industrial processes, such as those performed at oil refineries, requires the alignment of many actions. With efficient coordination between the logistics, production, quality, asset maintenance, plant safety, regulatory compliance and other interdependent plant functions, the company will achieve the highest ROI and ROA possible.

Traditionally, different operators manage each of these functions, often using different software applications. As the workflow platform for AVEVA applications, AVEVA Workflow Management provides the capability to manage, enforce and document activities company wide. It also replaces manual processes and paperwork with electronic workflows, encompassing everything from routine operations to escalated responses to critical plant operating conditions.

"The wide range of KOC oil production processes are successfully integrated thanks to Workflow Management. These advanced technical capabilities coupled with the complexity of system integration, and the team's proven technical expertise in the oil/gas market, made the AVEVA software solution an obvious choice by the KOC engineering team."

Nawaf Awad,
TPL Specialist I, KOC

AVEVA Workflow Management differs from generic BPM software by offering native integration with AVEVA System Platform and other productivity AVEVA applications. Users can manage facility processes in real-time directly from control system equipment. In addition, conditions and process alerts, work order execution, as well as quality, performance and inventory logistics events can be managed in real-time.

Creating an integrated, scalable industrial operating system

AVEVA System Platform provides an efficient and flexible method of developing, deploying and maintaining the software applications used to manage critical KOC operations.

Providing a scalable, cohesive technology foundation, future applications can easily connect to KOC's installed System Platform. Functioning as an "Industrial Operating System," System Platform provides a collection of integrated common services such as visualisation, configuration, deployment, communication, security, data connectivity, data storage and management, and team collaboration.

These services allow an organisation to build a single, unified plant model that logically represents processes and equipment, as well as industrial and legacy systems, making the design and maintenance of these systems more flexible and efficient.

User-friendly, intuitive graphics and display enhance operator success

The integrated visualisation software for System Platform is InTouch HMI. It provides KOC operators with real-time visibility into their processes. InTouch is an open and extensible supervisory HMI and SCADA solution that enables the rapid creation of standardised, reusable visualisation applications and deployment across the entire KOC enterprise.

With real-time visibility into KOC operations, InTouch HMI greatly enhances operator effectiveness and increases control of processes to simplify and enforce standardisation and change management. KOC staff also can view this real-time data via a secure web browser which can be accessed from any device ranging from mobile phones and tablets, to desktop computers.

"The features of InTouch HMI and System Platform truly enhance the productivity of KOC and our operators. These two key products enable the safe and reliable collection of real-time data from all areas of our West Kuwait facility."

Collaborative work environment is key to KOC success

With the implementation of the AVEVA software, which makes up the Refining Operations Management solution, KOC can achieve faster time to value, more effective HMI design, scalability, better troubleshooting, and ease of application maintenance. It also includes visual enhancements to improve the ability to identify and address abnormal situations before they impact operations.

"The combination of state-of-the-art technology, a collaborative work environment and the technical leadership of the integration team, instilled confidence that the project would be successfully implemented, and enabling KOC to continue on the road of achieving its ultimate production goal of 4 billion bpd by 2030."

Nawaf Awad,
TPL Specialist I, KOC

About AVEVA

AVEVA is a global leader in engineering and industrial software driving digital transformation across the entire asset and operational life cycle of capital-intensive industries. The company's engineering, planning and operations, asset performance, and monitoring and control solutions deliver proven results to over 16,000 customers across the globe. Its customers are supported by the largest industrial software ecosystem, including 4,200 partners and 5,700 certified developers. AVEVA is headquartered in Cambridge, UK, with over 4,400 employees at 80 locations in over 40 countries.

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