MIDSTREAM OIL AND GAS / STORAGE CASE STUDY

JX Nippon Oil & Energy
Kiire Terminal Corporation

The Objectives

• Transfer knowledge to the next generation

• Achieve a Plan-Do-Check-Act cycle of continuous improvement

• Implement comprehensive, integrated software for managing work processes: shift handover, work instructions, mobile inspection rounds, near misses, abnormal events, operating limit changes, fault reporting and asset maintenance

• Improve visibility of operations data within the wider organisation

• Maximise the potential of the OSIsoft PI System®

JX Nippon Oil & Energy Kiire Terminal Corporation was established in 1967 by Japan's largest oil company and operates a world class Crude Oil Terminal. Its activities include crude oil storage, transfer and blending.

Kiire Terminal has 57 tanks containing up to 7,350,000m3 of crude oil reserves, enabling JXTG Nippon Oil & Energy to respond to unforeseen political, economic and social events.

Oil tankers carrying 300,000 tons of crude oil, mostly from the Middle East, deliver their cargo into the terminal tanks, for onward supply to the JXTG group's refineries. The Kiire Terminal also blends different types of crude oils to adapt to changing market conditions and requirements.

The Issues

Many of the Kiire Terminals veteran operators were approaching retirement. Management was concerned that their expertise should be retained within the company and transferred to the new operations personnel with technology that would appeal to a younger generation.

They wanted to achieve a rigorous Plan-Do-Check-Act (PDCA) cycle of continuous innovation and needed systems that would support this cycle of learning and incremental improvement. They needed a comprehensive, integrated operations management system to improve systems such as event logging, shift handover, work instructions, inspection rounds, near misses, abnormal events, DCS limit changes, asset maintenance and reports.

They saw the need to improve data visibility and communication between operations teams and other business units.

Finally, they wanted to unlock the potential benefits of the OSIsoft PI System® by automating reporting and event management.

JX Nippon Oil & Energy Kiire Terminal

How j5 International Provided the Solution

Since 2014, j5 International has implemented the following applications at Kiire Terminal in four phases: j5 Operations Logbook, j5 Shift Handover, j5 Work Instructions, j5 Standing Orders, j5 Inspection Rounds (Mobile), j5 Incident and Near Miss Management, j5 Event Manager:

- **j5 Shift Handover** produces reports for operators and supervisors with relevant data, events and instructions for each unit and area of the operation from the **OSIsoft PI System®**, **j5 Operations Logbook** and other j5 Applications. This ensures that a consistent, visible and accountable process is followed.

- **j5 Work Instructions** enables Planners to schedule ad hoc and recurring tasks for the operations team members. Tasks are marked off as complete and summarised in the Shift Handover.

- **j5 Inspection Rounds** facilitates the recording of plant data from the field. Inspection Rounds are designed in j5 at the console, uploaded to a mobile device, completed by the field operators and then synchronised with j5. Round information is readily available for analysis and reports. Anomalies are highlighted.

- **j5 Standing Orders** allows for the controlled dissemination of important communications within the facility.

- **j5 Incident and Near Miss Management** provides a platform on which all near misses and incidents occurring on the plant are recorded, investigated, analyzed and reported.

- **j5 Event Manager** monitors the OSIsoft PI System® tags for anomalies. Logs are automatically created and followed up by operators.

j5 International has also delivered custom reports and applications for monitoring tank levels, managing changes to operating limits, reporting issues related to assets and generating work requests.

Benefits of j5 to JX Nippon Oil & Energy Kiire Terminal Corporation

j5 makes important shift, inspection round, personnel, safety, maintenance and process data visible to the whole Kiire Terminal team. This fosters greater understanding, coordination, knowledge transfer and communication between teams, and improves decision-making.

j5 role-based workflows, e.g. for Shift Handover, Incident and Near Miss Management, and Work Instructions, improve efficiency, safety and follow-through.

j5 facilitates a Plan-Do-Check-Act cycle of continuous innovation by bringing consistency to work processes, and making the right information available. As requirements evolve, it is easy to adapt j5 and add new applications, whether custom or packaged.

The j5 Operations Management System saves on time preparing reports and extracting data. Accuracy is improved through integration with the OSIsoft PI System®.

j5 provides a consistent, intuitive user-interface with multiple applications, unifying and simplifying the management of operations. The simplicity, comprehensiveness and unity of the j5 architecture also make it reliable and cost effective to maintain.

Contact j5 International for more information

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