HEXAGON PPM

DOWNSTREAM OIL AND GAS / REFINING CASE STUDY
JXTG Nippon Oil & Energy

The Objectives

• A secure, consistent and professional logging and handover system

• Consistent management of safety incidents and near misses

• Efficient and consistent handling of the daily stream of operations instructions

• Monitoring and recording the complex range of maintenance tasks

• Integration with the OSIsoft PI System®, IBM Maximo and LIMS

The Benefits

• Uniform, consistent enterprise operations tool

• Improved logging, shift handover, work instructions and near miss / incident management

• Reduced maintenance costs

• Reduced support overhead

• Increased reliability

• System evolution since 2005

JXTG is one of the oldest refining companies in Japan with its business starting in 1888.

Its interests include the exploration, importation, and refining of crude oil; the manufacture and sale of petroleum products, including fuels and lubricants; and other energy-related activities.

They operate 11 refineries and have major shares in other refineries and in tank farm operations.

The Problem

The operations section of a refinery is complex and multi-facetted. It is tightly related to the equipment and operations people associated with the running of the refinery. Operations are also tightly coupled with Safety, Maintenance, Management, Planning, Real-Time Control, Personnel and other areas. JXTG needed an Enterprise System that would bring these areas under control and to a consistent level of management. They wanted this Operations Management to work uniformly across all 11 of their refineries.

The refining business is one of the most prone to accidents and injury. The most effective way of minimizing these incidents is to thoroughly record all Near Misses, to analyze these incidents rigorously to mitigate and minimize the possibility of it happening and minimize the severity of the consequences. JXTG needed a tool that would carry out these functions at an enterprise level. In the normal operations of a site, there is often the need for modules to interact with other modules. This was particularly true for JXTG:

• At shift end, incoming operations staff needed to know the values of Key Real Time Data and this information needed to be part of the Handover

• Key Laboratory information needed to be collected from the LIMS system and shown in the handover for the incoming personnel

• Contractor planned information needed to be collected from the planners to be organized and scheduled for the next day

• Maintenance Work Orders needed to be collected from the Maximo System to be presented to the operations staff

JXTGエネルギー

How j5 International Provided the Solution

The j5 system offered the ability to evolve from simple single site systems to multiple sites with multiple applications. This results in a controlled evolution of the system across the whole enterprise. Over the years, the j5 system has grown to provide 13 different applications now servicing nearly 3,000 employees across all 11 refineries on a daily basis.

The **j5 Operations Logbook** ensures that all events are entered as and when they occur throughout the refinery. This gives a comprehensive base load of events that are categorized against the operational area and specific categories to ease sorting and reporting. This information is automatically collected and presented in the Handover Report.

The **j5 Shift Handover** system provides individual handover reports for operators, boardmen and supervisors. There is a strict procedure that the handover system enforces to ensure consistency of operations. The handover also presents rich information from the LIMS, CMMS and Real-time systems to give a complete picture of the outgoing shift.

The **j5 Work Instructions** module provides a framework for the planning, creation, actioning and reporting of work instructions. Using this system, the many diverse instructions are handled efficiently across all the sites enabling them to strictly adhere to the PDCA (Plan Do Check Act) cycle.

The **j5 Framework** also coordinates the collection of information specific to the planning of Maintenance Operations. This information is collected from the CMMS and contractor planning sheets and is used to efficiently manage and schedule the maintenance tasks throughout the site.

The **j5 Near Miss and Incident Management** system is used to collect, categorize, prioritize and organize all the Near Misses throughout the corporation. This enables the consistent management of Near Misses and Incidents so as to reduce the frequency of incidents and also mitigate the effects of incidents. The system also tracks the actions associated with each Near Miss to ensure that the recommended correcting actions are carried out. There are a variety of different real-time and LIMS systems across the sites. The j5 system is responsible for collecting key parameters from these different systems so that the operations department has an up to date view of the data enabling more informed decisions to be made.

Benefits of j5 to JXTG Nippon Oil & Energy

Shift Handover: Ensures that this is carried out consistently and with all the relevant data shift after shift across all the levels of operations means huge benefits in: avoiding misunderstandings, avoiding incidents, improving efficiency and production, knowledge transfer, planning efficiency, teamwork and improved communications.

Work Instructions: Enforces a functional and efficient PDCA work management system across all the divisions and sites, considerable include: a better overview of instructions, better follow through of the instructions through to completion, reduced processing effort (by using templates), a better overview of the tasks, quick identification of difficult or incomplete tasks, better coordination of the workers, consistent recording of the tasks for future optimization, faster feedback of the progress of tasks etc.

Incident Management: The corporate-wide recording and follow-up of actions associated with near misses has been shown to be the most effective means of reducing serious incidents, the benefits of the j5 include: simple entry of near misses, procedural approval and analysis of the incidents, the risks and mitigating actions, prioritization of the incidents, exposing of trends and analysis to formulate mitigating actions, a consistent set of procedures across all sites to ensure that the Near Misses are rigorously processed.
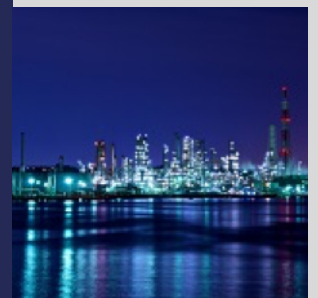

Customer Quote

"I've had the pleasure of working closely with the j5 team over the past two years as we have developed the Operations Logbook for implementation at our manufacturing plants.

The team's commitment, dedication and professionalism have impressed me immensely."

Operating Group Manager
JXTG Nippon Oil & Energy

Contact j5 International for more information

www.j5int.com
sales@j5int.com