



HEXAGON
PPM



LIQUEFIED NATURAL GAS (LNG) CASE STUDY

Singapore LNG Corporation (SLNG)

The Objectives

- A comprehensive, integrated suite of software applications
- A secure and professional logging and handover system
- Permit to Work, Management of Change (MOC), Incident Management and Compliance systems
- A system to manage ship unloading
- A system to manage outward delivery to the main pipelines
- Integration with IBM Maximo, Active Directory and other systems

The Benefits

- Same user-interface for all applications
- Applications adapted easily and evolving
- Visibility of information
- Routine tasks automated
- Simple workflow management
- Simplicity of architecture
- Reduced maintenance & support
- Increased reliability

Natural gas is the most practical source of energy for Singapore security of supply, cost and environmental friendliness.

For this reason, about 90% of Singapore's electricity is generated using imported natural gas.

The Problem

The requirements for the new SLNG Terminal were substantial and diverse. In a context of demanding deadlines for the launch of the terminal, strict safety regulations and budget constraints, SLNG needed a system to meet operations, process safety and compliance requirements:

- A secure and professional logging and shift handover system for managing operational and maintenance records of activities and personnel on site
- A rigorous Permit to Work system to facilitate safety during construction and operations
- A ship unloading system to manage the delivery of LNG from the ships
- A system for managing outward delivery to the main pipelines (Sendout Management)
- A comprehensive Management of Change (MOC) application so that changes to the plant's operations would be carried out according to strict procedures
- A comprehensive Incident Management system to record and learn from every incident and near miss that would occur on the site
- A Compliance Management application to support the terminal in achieving legal and regulatory compliance, and in submitting required reports to state and corporate authorities

SLNG required that these modules would interact seamlessly with each other, and with other systems in order to eliminate human error and the double capture of information, for example in relation to:

- Asset information, work notifications and work orders, as maintained in their computerized maintenance management system, IBM Maximo
- User names and passwords, as maintained in the Active Directory
- Reliability System information
- Production planning system information



How j5 International Provided the Solution

j5 International in partnership with Accenture Singapore delivered HSE applications to address the strict regulatory and safety requirements of the site:

- Incidents and near misses are tracked and managed by the **j5 Incident Management** System, all the way from their recording and investigation to regulatory reports
- **j5 Management of Change:** MOC's of different types and sizes are managed by the j5 MOC system through successive stages from the origination of the MOC through to commissioning
- **j5 Permit to Work:** The j5 PTW system ensures that the correct procedures are carried out for issuing work permits and managing the work on site

j5 International also delivered custom applications tailored to the expressed needs of SLNG:

- The j5 Ship Unloading System, which manages all the steps in the process of unloading from the time the ship arrives to its departure
- The j5 Sendout Management application for managing outward deliveries of LNG, including the validation of planned vs. actual quantities shipped

These j5 modules operate seamlessly off a unified, web-based user-interface powered from a single, central server. The suite can be accessed from any browser that is connected to the site's LAN. The j5 system integrates seamlessly with 3rd party software where required, such as IBM Maximo, EC and Babelfish. The j5 system was delivered in time for the first shipment of LNG to be received, and within budget.



Customer Quote

"As a delivery partner, j5 International has demonstrated a high level of excellence and commitment to the success of a key LNG client in Singapore."

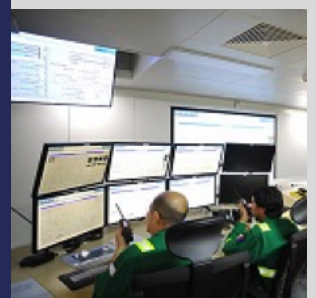
"I would definitely recommend j5 to my next client."

Saqib Khan

Senior Manager
Accenture Singapore

Benefits of j5 to SLNG

- The j5 system has provided a comprehensive, unified suite of operations, process safety and compliance management applications. The user interface for all these applications is both consistent and intuitive
- The j5 applications have been configured to align closely with the SLNG plant's unique requirements and the flexibility of the j5 applications allows this configuration to be improved over time
- j5 makes the right plant information readily visible to any plant personnel, including operators, supervisors, maintenance teams, HSE officials and management
- j5 has automated routine tasks, processes and reports, reducing the risk of errors, accidents, and losses arising from human error, saving time and reducing costs (e.g. validation of planned vs. actual quantities delivered)
- j5 has a simple, client-server architecture and is supplied by a single vendor, which translates into lower maintenance costs and improved system reliability



**Contact j5 International
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