



Meridian Energy manages the maintenance of nine power stations with IBM Maximo software.

Overview

■ Challenge

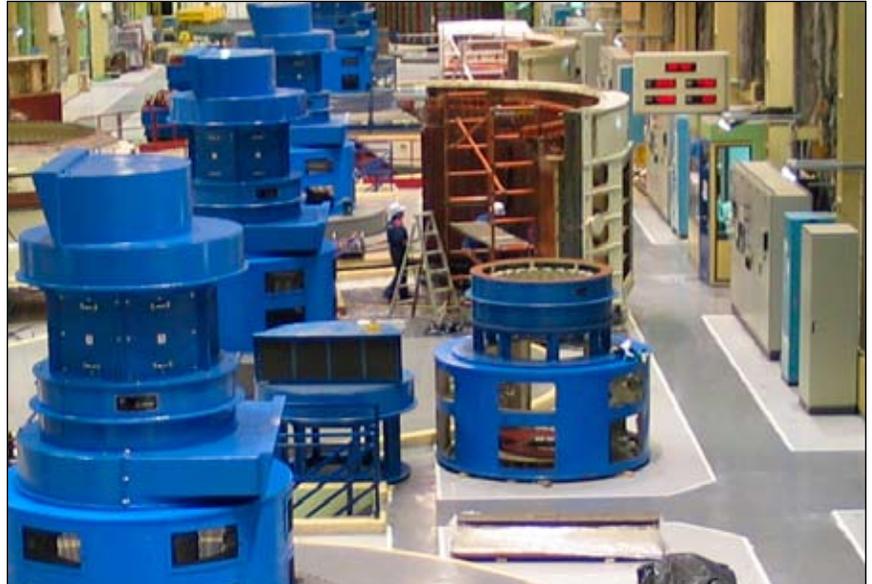
Enable a relatively small number of staff to maintain an asset base of more than 4 billion NZD with more than 60,000 pieces of equipment across nine power stations

■ Solution

A comprehensive asset management solution that could easily adapt to changing business conditions and support new maintenance systems and processes as needed

■ Benefits

Improves operational efficiency and effectiveness; helps staff demonstrate compliance with auditing requirements; helps prevent fault or failure of assets by seamlessly integrating with new maintenance systems and processes; enables continuous improvement of asset management program



Meridian Energy uses IBM Maximo Asset Management software to remind its asset coordinators that a piece of equipment needs to be maintained or simply checked to prevent fault or failure.

Meridian Energy is New Zealand's largest electricity generator and produces approximately 30 percent of the country's total generation using hydro assets in the Waitaki Valley and Manapouri in New Zealand's South Island.

Meridian Energy generation assets underpin both New Zealand's electricity supply and the utility's retail position by providing high levels of reliability and availability. Hydro assets are distributed across nine hydro power stations located around the island. Meridian Energy also owns and operates utility scale wind farms in both the North and South Islands.

“The Maximo system has the flexibility to change along with the business. For example, as markets change and the business has evolved, the maintenance function has moved from an outsourced to an in-house capability for the majority of maintenance.”

– Tony Atkinson, Maintenance Process Engineer, Meridian Energy

Achieving asset management excellence through an integrated approach

“Without the functionality and flexibility Maximo provides, the implementation of our innovative Plant Asset Management [PAM] system would have been very difficult indeed. The PAM system and Maximo complement each other perfectly and the integration was seamless.”

– Neil Gregory, Technology and Process Strategist, Meridian Energy

On April 1, 1999, the wholly government-owned Electricity Corporation of New Zealand (ECNZ) split to form three generating companies—Meridian Energy, Mighty River Power and Genesis. At this time, Meridian Energy reviewed many of its legacy systems. According to Tony Atkinson, a maintenance process engineer, IBM Maximo® Asset Management software (formerly MRO Software Maximo) was retained on the basis “that it could provide all the functionality demanded by Meridian Energy.”

Maximo software also was viewed as being highly re-configurable. This was essential to Meridian Energy as its maintenance improvement program demanded that any new maintenance system or process could be easily integrated with Maximo software.

An integrated approach improves efficiency

Because of the distributed nature of the assets, operation is remotely managed at a central control room located at Twizel, in the South Island. The control room is focused on real-time demands of New Zealand’s electricity market. Consequently, maintenance of generating assets is critical and the Maximo system enables the maintenance program to operate effectively. The maintenance strategy combines planned

maintenance, condition monitoring and defect management. Maximo software manages the data and plans associated with this program and maintains data on every outage, both planned and unplanned. This includes the nature of the outage, what was done about it, by whom and with what parts.

Maximo software is accessible at all nine power stations, as well as at the Meridian Energy Christchurch office in the South Island’s largest city, and the Twizel central control room. The system has helped Meridian Energy to continue with its journey towards maintenance excellence.

Managing a large asset base with limited resources

After 12 years of operations, Meridian Energy is realizing the full benefits from its Maximo Asset Management system. “The Maximo system has the flexibility to change along with the business. For example, as markets change and the business has evolved, the maintenance function has moved from an outsourced to an in-house capability for the majority of maintenance,” says Atkinson.

Considering the wide geographical location of the assets, Maximo software enables a relatively small number of staff to maintain an asset base of more than 4 billion NZD.

Most recently, Maximo software has been successfully integrated with Meridian Energy's innovative Plant Asset Management system (PAM). "Without the functionality and flexibility Maximo provides, the implementation of our innovative Plant Asset Management system would have been very difficult indeed," says Neil Gregory, technology and process strategist, Meridian Energy. "Maximo provides the test and inspection data required for the PAM system to operate successfully. The PAM system and Maximo complement each other perfectly and the integration was seamless."

Buildings and grounds facilities management, as well as telecommunications, are outsourced, and Maximo software automatically passes work orders to contractors, who consolidate work order costs at month-end for invoicing. Their monthly invoices typically list many unique jobs and Meridian Energy personnel can check the invoices by running simple reports.

Additionally, hydro operators with large dams and associated structures are required to comply with strict safety standards, and Maximo data is used by Meridian Energy to demonstrate its compliance with auditing requirements from external safety auditors.

In keeping with the preferred business model, Meridian Energy does not have a high turnover in spare parts. The small stock of high-value insurance spares held by Meridian Energy turns over relatively infrequently and this enables the company to keep its inventory value down to low levels.

"Our heavy reliance on Maximo is for planned maintenance," says Atkinson. "Our focus is managing Meridian Energy assets from design to decommission. With 39 generators and all the associated plant and systems, there are over 60,000 pieces of equipment to manage. Consequently, accurate maintenance records are crucial."

He adds, "Maintenance is a critical 24x7 operation involving precision tests and inspections to determine levels of deterioration and to help predict and prevent faults and failures. Our Maximo system has in excess of 40,000 test points across nine power stations that are used for regular testing and measurement by more than 30 field technicians."

Key Components

Software

- IBM Maximo Asset Management
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– Tony Atkinson

Reliable data drives asset management excellence

Maintenance work orders may include the checking of oil levels, pressure readings, temperature and general wear and tear. These tests and measurements are logged back into the Maximo system at the end of each day. With so many test points and different types of equipment and fault codes, Maximo software ensures that Meridian Energy maintains the level of data integrity necessary to remain operational and productive.

The Maximo system has approximately 3,000 preventive maintenance plans that form the basis for the scheduled maintenance program. Approximately 1,000 work orders per month are created and, at any given time, there may be as many as 50 employees and contractors logged onto and using Maximo software.

Asset management excellence relies on reliable data that is easily retrievable and that can be used by a number of integrated systems. At Meridian Energy, Maximo software remains the foundation for the continuous improvement of its asset management program.

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