

## CASE STUDY

### INGHAM REGIONAL MEDICAL CENTER USES COACTIVE TECHNOLOGY TO MONITOR AND CONTROL CRITICAL POWER GENERATORS IN A MULTI-CAMPUS ENVIRONMENT



#### Background

When Lansing General and Ingham Medical Center combined to form Ingham Regional Medical Center, each hospital campus had its own backup power systems. These systems are critical to safe operations, with usage controlled by local, state and federal agencies. At Ingham, each campus has two sources of primary power which can back each other up. If both of these sources fail, and the hospital becomes dependent upon backup power, it is allocated based upon priority level. Critical power, which is essentially any that is necessary to support equipment which touches a patient, gets the highest priority. Life Safety power, which supports devices such as fire alarms, gets second priority, and Equipment power, which supports devices such as air conditioning and heating, gets lowest priority.

#### The Challenge

In the past, the generators in each system were monitored through a set of gauges located at the generators. These gauges displayed engine performance information such as power output, as well as generator status. The generators had to be controlled locally using a physical switch. Ingham Medical wanted to be able to monitor and control the generators from throughout the facility to improve efficiency and reliability, particularly in a time of crisis.

LonWorks control networks enabled local monitoring and control for each generator. Ingham wanted to create a connection between these LonWorks control networks and the existing TCP/IP fiber optic LAN that already spread both campuses.

Ingham was looking for a solution which would not require new infrastructure, yet which could adapt to the constant changes in their business. Specifically they needed a solution which would work in an environment where:

- The generators were already installed and operational;
- The existing Fiber network could be used for data transport;
- Information could be delivered to existing monitoring locations and in a form that users were accustomed to;
- New generators and monitoring equipment could be added without system changes.

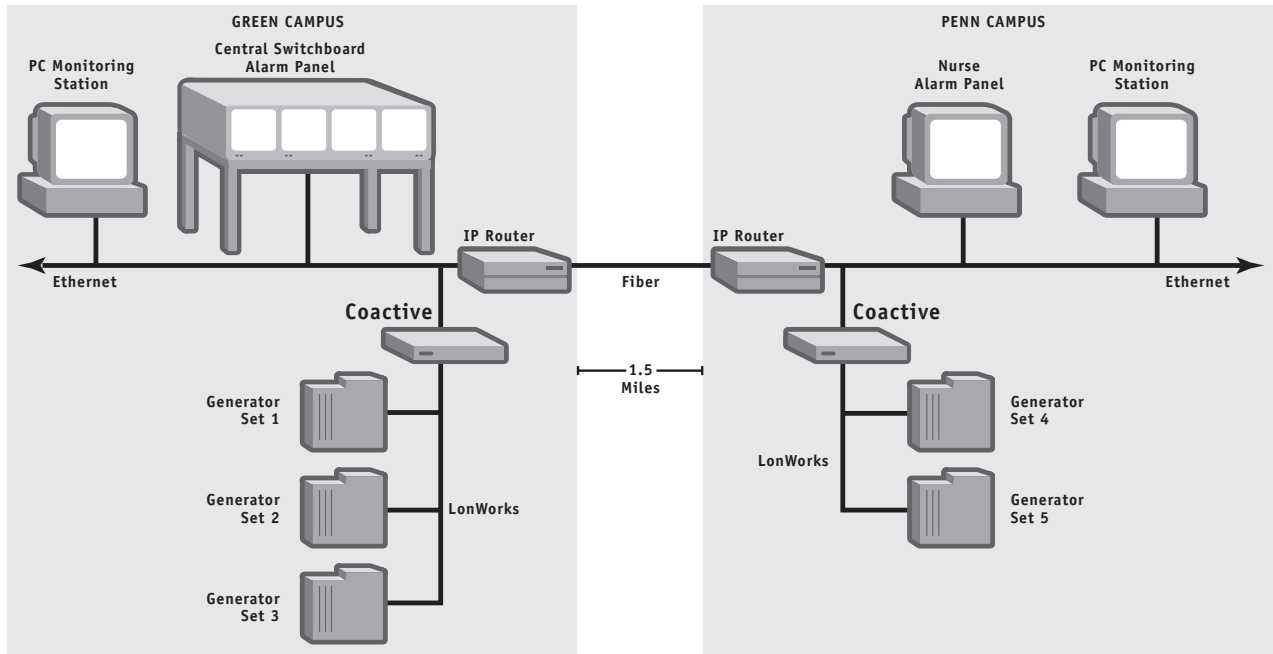
Ingham turned to Coactive Networks, the market leader in providing open solutions for connecting LonWorks to enterprise networks and the Internet.

#### The Solution

Coactive's Router-LL allowed Ingham to integrate the LonWorks control networks with the existing Fiber backbone via 10Base-T Ethernet connections. This solution provides communications capabilities between the control networks, the PC monitoring stations at each location, and remote monitoring locations such as the constantly manned central switchboards. Coactive's Router products, as part of Coactive's IOConnect Architecture, provided a reliable, embedded, distributed solution to integrating next-generation networking technologies on both the control and data networking sides of the system.

The Ingham system allows maintenance and operational personnel to monitor and control backup power either locally or remotely. It also allows switchboard personnel

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to get immediate notification of any problem with the system. Because power is so critical to the hospital, this level of monitoring and control adds another level of safety to operations.

### About Coactive's IOConnect Architecture

The Coactive IOConnect Architecture addresses the convergence of control and enterprise networks with an open, embedded, distributed, and scalable solution based on a coherent approach towards the connectivity problem. The IOConnect Architecture supports open standards including LonWorks, the leading control network technology. It has been specifically designed to support and leverage Internet Protocol (IP) standards and technologies. This approach provides unmatched flexibility, reduces system costs, and enables new functionalities. The technical benefits offered by Coactive's IOConnect Architecture include:

- Leveraging existing LAN wiring and IP infrastructures in control systems;
- Increasing the return on investment made in the data networking infrastructure;
- Allowing the physical and logical segmenting of large control systems;
- Reducing the total cost of ownership of control and automation systems; and

- Enabling a new class of applications via seamless web and database access to control information.

### About Ingham Regional Medical Center

Ingham Regional Medical Center is a multi-site not-for-profit hospital located in Lansing, Michigan. Ingham provides a full range of services for the community including critical care, surgery and outpatient services. The combined facilities cover more than 850,000 sq. feet and more than 450 beds. Recently the Ingham Regional Medical Center has become affiliated with the McLaren Health Care Corporation.

### About Coactive Networks

Coactive Networks is a leading provider of open solutions for connecting control systems to enterprise networks and the Internet. The company offers a full line of routers, servers, and gateways for creating powerful next-generation applications, and is the market leader in providing connectivity solutions for LonWorks, the leading control network. Coactive is a privately held corporation based in Sausalito, CA. Detailed information on Coactive products, news announcements, seminars, training and support is available on the World Wide Web at <http://www.coactive.com>.