

# Remote monitoring for Pavana III

by Roberto Lira, Business Development Manager, Wärtsilä North America, Inc.  
and Johan Pellas, Manager, Condition Based Maintenance, Wärtsilä Finland Oy



**Pavana III in Honduras is one of the first power plants to be equipped with Wärtsilä's remote monitoring system called WOIS Connect (Wärtsilä Operator's Interface System). The system connects the Honduran power plant, via the internet, to Wärtsilä's CBM (Condition Based Maintenance) centre in Vaasa, Finland, or the monitoring room in Fort Lauderdale, USA.**

The newly developed monitoring system collects thousands of plant operating parameters daily. These are analysed in the CBM centre and the result is then reported back to the operator. These analysed feedback reports, including predictions for the future, provide the power plant's operations team with valuable information for 'on-time' preventive maintenance and an 'early warning' to the operators to react and avoid any potential problems. Another advantage is that the plant parameters are fine-tuned when needed for optimal performance of the installed equipment, thus ensuring the lowest fuel consumption

and the highest availability.

The system enables online monitoring of the power plant's operational process and alarm/event displays including easy reviewing of historical trending curves. All this takes place securely over a fixed and reliable internet connection.

### **New system saves costs**

The decision to install WOIS Connect was made during the sales and negotiation phase of the Pavana III project. The remote monitoring system and the CBM solution were sold as an additional plant feature to help Lufussa, the client, maintain the required plant availability and lower their

expected maintenance costs.

Lufussa also realized that having the real-time support of the plant's OEM (original equipment manufacturer), twenty four hours a day and seven days a week would offer many operational and cost benefits. Not least, this would mean that the local Wärtsilä personnel who were already familiar with their power plant and its daily operation would be involved with the monitoring and service functions.

Lufussa's experience at their 80 MW Pavana II power plant had built a good working relationship between themselves and Wärtsilä, so they trusted that the WOIS system would deliver the cost savings they required of it. Lufussa also saves money by not having to pay for a Wärtsilä service engineer to fly to Honduras for a troubleshooting service call.

In addition, the system will be delivered with reporting forms tailored specifically for Lufussa. Reports are now automatically collected and printed in the format that Lufussa requires, thus saving daily work for the operators.





### **Pavana II WOIS / WISE upgrade follows Pavana III**

Lufussa's Pavana II plant was commissioned in 1998 and has been in successful operation with the original operation stations and Wärtsilä operating system software. When the Pavana III plant was commissioned during 2004, discussions started between Wärtsilä and Lufussa to upgrade their Pavana II power plant to the same operating standard as the Pavana III plant so that the software and interfaces would be similar in both Pavana II and Pavana III.

For Lufussa the benefits of the upgrade are that the updated software and hardware will ensure reliable operation and data collection. The system upgrade features similar software and interfaces as in Pavana III with tailor-made reporting, which reduces the data collection and reporting time.

This standardization between the two power plants will make the daily work of the plant operators easier and more efficient. The agreement to proceed with the system upgrade was reached in November 2004 and the work will be completed in the first half of 2005 by Wärtsilä Guatemala.

### **Global accessibility**

The main goal of Wärtsilä's WOIS Connect is to provide customers with a secure, easy to use and standardized remote monitoring and CBM support service which is accessible from anywhere in the world. The system has the same familiar look and feel as the existing WOIS system in power plants or ship power installations, except that it is a read-only system.

The first installation of the network infrastructure that is used for WOIS Connect was in the Plains End peaking power plant, Denver, USA, in spring 2002. Following this first installation the fine-tuning for WOIS Connect was carried out in Wärtsilä's service office in Fort Lauderdale together with colleagues in Finland.

The system was developed to focus on end-user customers, making their plant

## Wärtsilä Guatemala, S.A.

Wärtsilä Guatemala, S.A. is Wärtsilä's after-sales service and customer support office for customers in the Central American region. It is a fast growing company located close to Guatemala City. The company is specialized in technical services such as installation audits, troubleshooting, measurements (vibrations, alignments etc.) and also workshop services.

The company's 850 m<sup>2</sup> workshop is equipped with all the machinery necessary for maintenance work. This includes turbocharger rotor dynamic balancing equipment, governor maintenance and calibration, fuel equipment maintenance and calibration and normal engine component maintenance.

The company has also acquired portable tools to perform measurements (vibration, thermograph, laser alignment, various electrical tools) and machining (cylinder head overhauls, liner works).

The workshop is capable of reconditioning various components from different applications. The company also has a training area with classrooms to provide training locally.

One of the fastest growing support areas is knowledge and expertise in control and automation systems. The system support and upgrades offered are frequency support, enhanced plant management systems and upgrades to WOIS / WISE workstations and PLCs.

Wärtsilä Guatemala, S.A. has a growing number of engineers and technicians who are qualified to work on various engine types. The team includes both mechanical and electrical specialists. ■



operations easier and more efficient. The system provides fast-resolution displays of historical trend graphs over slower communications lines. The system also enables remote supervision and analyses data for plant operators by the CBM centre.

The aim was to develop a monitoring system that enabled online monitoring of the process. It was also required to show alarm/event displays with easy reviewing of historical trending curves over the internet in a secure way.

### **Remote monitoring for all**

There are currently 14 power plants connected to the Wärtsilä WOIS Connect solution and more are on order at different locations all over the world.

Most Wärtsilä power plants can be connected to the WOIS Connect system. This offers the advantage that these plants are simultaneously linked to the CBM system and in direct contact with Wärtsilä. ■