

Monitoring System Classification

CLASSMON

A subset of the decision of purchasing a monitoring system is the decision of what type of system is required. Monitors are available in many varieties; some simply display the overall signal levels, some have elaborate interface systems, some can automatically collect different types of information. The end user must decide what is really necessary. Will the monitor be required to provide some form of protection? Does the end user require that the monitor provide some type of information? Must the monitoring system provide diagnostic capabilities?

PROTECTION

Protection is available in many forms. Nearly all monitor systems available today can provide machinery protection. This means that should a sensor signal exceed a predetermined set point the monitor can initiate a shutdown to prevent internal machinery damage. This form of protection is tangible and can be quantified for accounting purposes. Additional intangible protection provided by a basic monitoring system are personnel and production protection. If a machine can be shutdown prior to catastrophic damage, which could involve unexpected shrapnel from the machine, the personnel that are in the vicinity of the machine are protected.

An orderly shutdown of a machine train can benefit the facility production and its product. Certain production processes, such as paper and sheet steel, are sensitive to excessive vibration. High vibration levels produce poor quality product. These facilities will benefit from a monitoring system that can alert operation personnel when unacceptable product is being produced.

INFORMATION

An information system will provide data that is useful for planning and scheduling. This information can be used for a "Go No-Go" decision whether to continue operating the machine train or produce goods. Basic monitoring systems are capable of providing this type of information by alerting personnel to current conditions.

Maintenance planning and outage scheduling requires additional information. Information systems will provide data as trends, which give advanced notice of elevating overall signals.

DIAGNOSTICS

Advanced monitoring systems will provide additional information about the condition of the machine train connected to the monitor. This information can be collected automatically or manually, and upon alarm activation or on a regular basis.

This information has many benefits which when properly used can produce cost savings and downtime. By analyzing the collected information the root cause of the elevated signals can lead to the cause of the machine problem. This type of information can lead to reducing machine train downtime. After the maintenance has been conducted, this type of monitor can be used for acceptance testing and machine commissioning. Many end users have reported correction of design flaws and incorrect operating procedures using advanced diagnostic information.

Monitoring Classification Checklist

1. Protection
2. Information
3. Diagnostics