

CONSIDERATIONS REGARDING THE MONITORING SYSTEM FOR PREVENTIVE MAINTENANCE.

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The primary objective of the condition monitoring process is to reduce costs. In most cases cost savings are achieved by giving plant managers the best possible assessment of their plant condition to estimate the availability, plan outages and minimise consequential damage.

Definitions: In the wide field of condition monitoring, the words detection, diagnosis and prognosis are often used. It is telling that the sector rarely mentions words such as cure, remedy, correction or remedial actions, since it is not until one of these activities has been performed that benefits will be seen. For the purpose of this paper the definition of these words are reiterated below.

Detection -The discovery of something hidden or not easily observed

Diagnosis -The identification of diseases from their symptoms

Prognosis - The forecasting of the course of a disease

Remedial action -The action tending or intended to cure a disease

The condition monitoring process can be considered to consist of three major components:

First line analysis is the routine, often daily, checks. The objective of this work is to ensure that the monitoring equipment is operational and abnormal behaviour is quickly highlighted.

Second line analysis is a regular review that will pick up problems identified from the first line analysis and identify longer-term trends. It will highlight problems before they become critical and provide information for planned maintenance activities.

Third line insurance is the provision of expert advice when abnormalities have been identified. This is non-routine and requires the highest level of expertise.

By recognising that the monitoring process is a multi-skilled, multifaceted activity, and requires a range of qualities and skill levels, the on-going cost can be minimised. The routine checks and reviews can be increasingly automated and allocated to logical, methodical, and lower skilled individuals, while rotor dynamic and plant specialists can provide the diagnostics, prognosis services and suggest the remedial actions.

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