

## About the Seminar Leaders:

John C. Robertson is a lead reliability engineer with 46 years of experience as a mechanical engineer in plant maintenance, including experience in the start-up and operation of fossil- and nuclear-fueled power plants. Besides specializing in vibration analysis, shaft alignment, power balancing, and precision maintenance, he is a knowledgeable root-cause analyst. He has provided condition-based maintenance instruction and hands-on training for more than 25 years.

# Precision/Preventive Maintenance

*Overlooking the details and skipping best practices can bring a plant to its knees. Avoid downtime with a solid precision/preventive maintenance program.*

## What You Can Expect From This Seminar

This seminar teaches you preventive maintenance skills, procedures, and documentation methods being practiced only sporadically – or not at all – in today's manufacturing environment. Precision/preventive maintenance (PPM) is planned maintenance of plant and equipment to improve equipment life and avoid unplanned maintenance downtime. Reliability managers practicing PPM analyze the root cause of equipment breakdowns to minimize future breakdowns and loss of production time. PPM tasks include lubricating, cleaning, and adjusting parts; making proper alignments; and replacing minor components to extend the life of equipment and facilities.

Reliability managers know that when maintenance is not completed properly the first time, costs escalate and productivity plummets. Learn proper maintenance procedures – and how to implement a good PPM program – so you avoid a reactive maintenance environment.

– **John C. Robertson, Seminar Leader**

## Seminar Content

### DAY 1

- Introduction to precision/predictive maintenance techniques
  - Run-to-failure maintenance
  - Preventive maintenance
  - Predictive/condition-based maintenance
  - Introduction: vibration analyzer and its uses
- Precision maintenance and machinery improvement
  - Change in culture
  - Developing a machinery-improvement plan
  - Training
  - Reporting and monitoring results
- Alignment of shafts
  - Precision tolerances
  - Common problems and concerns
  - Performing a precision shaft alignment
- Discussion and questions

### DAY 2

- Evaluating precision skills
- Balancing your rotating equipment
  - Setting precision-balancing requirements and tolerances
  - Common problems and concerns
  - Assembly procedures and suggestions
  - Measured keys
  - Precision balancing: effect on vibration
  - Performing a single-plane balancing calculation
- Recognizing machinery soft-foot
- Recognizing resonance and its effects on machines and structures
- Using phase-angle analysis as a precision tool
- Maintenance/control of spare parts
- Pros/cons of working with outside organizations
- Discussion and questions

## Who Should Attend

Maintenance/operations craftspeople; maintenance engineers, managers, supervisors, and planners; operations managers; system engineers; and those involved in reliability/maintenance improvement.

## How To Get the Most From This Seminar

Send teams from areas of the plant where you'll launch your preventive maintenance program.