

## LP 200 – Root Cause Analysis (RCA)

### Recommended for

Managers and technicians at industrial plants responsible for rotating equipment performance & reliability. Rotating equipment engineers, reliability engineers, millwrights, mechanics and maintenance supervisors.

### Course objective

To equip participants with root cause analysis techniques in reliability and condition monitoring programs to enhance the scope and quality of on-site investigations. To provide participants training in specialized techniques to identify the true root causes underlying a problem and to ensure that results of the study includes realistic corrective action.

### Course description

The key elements of an RCA process discussed include:

- Working from existing corporate information systems to capture events and incidents where RCA will be beneficial:
  - Machinery failures resulting in actual or potential loss of plant output
  - Machinery failure that represents a large or unbudgeted repair cost
  - Safety, health or environmental breaches
  - Repetitive failures that collectively represent an excessive maintenance cost
  - A nonconformance in maintenance strategy
- Prioritize incidents and formally launch the RCA study by defining the problem
- Collect and preserve evidence that will provide evidence on the incident
- Expose the causes of the incident by building a “why?” tree. In general each incident will have 3 types of root cause:
  - a. Technical causes ..... the immediate technical cause of the failure
  - b. Human causes ..... actions or inactions that triggered the technical causes
  - c. Organizational causes ..... organization factors that lie behind the human cause

The key elements of an RCA process discussed include:

1. *Propose practical actions that will address the root cause of the incident and develop a business case for management approval of the resulting actions*
2. *Following management approval, assign actions for implementation and track actions to completion*
3. *Measure the performance of the RCA program through appropriate KPIs*

## Key learning outcomes

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- ✓ Students will understand the importance of RCA in delivering internal services and its role in relation to other tools, notably vibration diagnostics, bearing failure diagnostics and maintenance strategy
- ✓ Students will become confident in building “why?” trees and the 7 steps of a root cause study
- ✓ Students will be equipped with tools to assist them in resolving complex problems and in thinking laterally to fully explore possible causes of a problem

## Course duration

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2 days