



## **Fracture Analysis Course**

### **Purpose**

The purpose of this course is to teach the basics Presentation of information that allows reliability and maintenance professionals and craftspeople to take a more active role in determining whether repairs will be effective and lasting.

### **Objectives**

At the completion of this course you will the engaged participant will:

- Understand what fracture and cracking is and why it happens
- Know how to distinguish a normal fracture from a suspicious fracture
- Know what to do prior to disassembling or (re) moving damaged components to make it easier to figure out why the component broke
- Be familiar with design based machinery component durability improvement methods (to complement knowledge of service issues)
- Learn how to work with a metallurgist or materials engineer in order to specify emergency replacement parts with a higher chance of good performance

### **Description**

This is an interactive lecture / discussion seminar with case studies. If the participants have examples of broken, worn, deformed or corroded components from previous failures, there will be time to discuss what may have contributed to the failure, and consider approaches to prevention of recurrences.

### **Content**

- Introduction
- What is fracture?
- Basic Visual Evaluation Techniques for Broken Machinery Parts
- Preserving evidence at the time of failure (may provide information leading to durability improvements)
- What to do when visual examination is not enough
- Case studies (instructor provided and participant provided)
- Deformation, wear, corrosion and thermal problems
- How to specify emergency replacement parts
- Wrap up

### **Schedule**

This is a two-day program. The best class size is six - fifteen. Having multiple sessions for the case study portions could easily accommodate higher numbers.