

***Vibration Analysis Level I***

**Training Date:** 19<sup>th</sup> – 23<sup>rd</sup> Feb., 2012  
**Training Venue:** Swiss-Belhotel, Doha.

**Training Time:** 0730 – 1430 hours  
**Training Fee:** USD3,500 per participant

***COURSE OVERVIEW***

Vibration Analysis (ASNT Certification) is mainly used in the detection of the rotating equipments problems like imbalance, bent shaft, misalignment, soft foot, looseness through the study of the vibration coming from the equipments due to the problems. It is used to study Bearing problems, Gear Box Problems. Vibration analysis is ideally suited for Motors, Pumps, Fans, Refrigeration machines, Cooling towers, Gear boxes, Emergency generators, and Steam turbines

***WHO SHOULD ATTEND?***

- Operator, who wishes to expand their analytical and problem skills in the areas of Maintenance, operation, reliability, and engineering.
- Maintenance supervisors
- Rotating machinery engineers.
- Predictive maintenance coordinators.
- Reliability engineers, and advanced mechanics and technicians.
- Manager, Supervisor and Analyst.

***COURSE OUTCOMES***

At the end of this course, participants will be able to:-

- Select appropriate sensors and techniques for diagnosing typical machinery malfunctions.
- Participants will be able to “read” vibration signatures and evaluate machinery condition from vibration data.
- Participants will be able to isolate the affected machinery component, recognize various common problems, and be able to make recommendations for continued operation or scheduled repairs.

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***BENEFITS OF VIBRATION ANALYSIS***

- Transition from "Run to Failure" to pro-active style maintenance.
- Acceptance testing of new equipment installations.
- Increased operating reliability.
- Increased mean time between failure (MTBF).
- Improved tenant services and relations.
- Implement "Just In Time" spare parts inventory.
- Elimination or lessen unscheduled equipment downtime.
- Improve maintenance management.
- Lower utility bills.

ارامكو السعودية  
Saudi Aramco



TENAGA  
NASIONAL BERHAD  
(2008-W)

قطر للبترول  
Qatar Petroleum



BASF  
PETRONAS  
CHEMICALS

## Course Outline

### A. Basic Vibration Analysis Physics Course

#### Introduction

- Brief history of NDT/PdM and vibration analysis
- The purpose of vibration analysis
- Basic principles of vibration analysis
- Basic terminology of vibration analysis to include:
  - Measurement units
  - Measurements orientation
  - Hardware
  - Software
  - Machine components
  - Data presentation

#### Transducers

- Types
- Applications
- Mounting
- Limitations

#### Instrumentation

- Types
- Applications
- Limitations

### B. Basic Vibration Analysis Operating Course

#### Machinery Basics

- Machine types to include:
  - Motors
  - Pumps
  - Gearbox
  - Air handlers
  - Compressors
  - Turbines
- Machine components to include:
  - Bearings
  - Couplings
  - Rotors
  - Gears
  - Impellers
- Machine orientations

#### Data collection Procedures

- Upload/download route
- Following a route
- Data acquisition
  - Recognize good versus bad data
  - Perform machine observations
  - Recognize abnormal conditions (Exception data)

#### Safety and Health

- Mechanical
- Electrical
- Environmental
- Regulations
  - Federal
  - Local
- Equipment

## About the Course Instructor

**Mr. K. Ravindran** (ASNT ID NO: 141151) is an extremely well experienced NDT level III with certifications in 11 methods including UT, RT, MT, PT, VT, ET, IR, LT,AE , NR & VA. He has an overall experience of 25 years in inspection field of castings, forgings, pressure vessels (Designing, fabrication inspection) and pipe lines inspection. He is familiar in Destructive and Non-destructive inspection technique, as applicable to Welds, castings, forgings etc as well as inspection of raw materials with relevant specifications. He is thoroughly familiar with all the relevant applicable Codes and Standards for Non-destructive Testing and well versed in the documentation procedures. Mr. Ravindran also has the AWS CWI (AWS – CWI Cert No 05071771) certification. He is thoroughly proficient in all welding techniques, procedures and WPQ verification and certification for all kinds of welding like SAW, SMAW, FCAW,GTAW, PAW etc for all positions Including 5G & 6G also.

He has have ten years experience in conducting training courses and classes all most in all methods of NDT for LEVEL I & LEVEL II & LEVEL III, welding technology and casting and foundry technology. He is a post Graduate in physics, Post Graduate Diploma in Radiation Protection by Bombay University BARC (INDIA). He also have the following API's certifications such as; API 510 (Cert. No: 31918), API 653 (Cert. No: 32744), API 570 (Cert No: 33311), API 571 (Cert No: 20990), API 580 (Cert No: 35869) and API 577 (Cert No: 35861).



# Registration Form

## Please Send Your Registration To:

<b>Tel:</b>	006.013.208.2143	<b>Fax:</b>	006.09.617.8443	<b>E-mail</b>	info@cfpets.com
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## Course Details

<b>Course Name:</b>	Vibration Analysis Level I (Certification Course)	<b>Course Date:</b>	19-23, Feb. 2012
<b>Venue:</b>	Swiss-Belhotel Doha, State of Qatar	<b>Fee:</b>	USD3,500.00

## Company Information

<b>Organization</b>	
<b>Address</b>	

### HR / Training Manager

### Invoice to be sent to

<b>Name :</b>		
<b>Tel no.:</b>		
<b>Fax no.:</b>		
<b>E-mail :</b>		

## Participant Information

	Participant # 1	Participant # 2	Participant # 3
<b>Full Name :</b>			
<b>Job Title :</b>			
<b>Department :</b>			
<b>Telephone No. :</b>			
<b>Mobile No. :</b>			
<b>Fax No. :</b>			
<b>E-mail Address :</b>			

## Please Pay by Telegraphic Transfer to:

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