

5-WHY ROOT CAUSE FAILURE ANALYSIS METHOD



Why: To provide Operations, Maintenance, and Technical individuals the skills to solve simple problems by determining the true root causes and how to develop plans to eliminate the root causes. The attendees:

- Understand the Root Cause Failure Analysis (RCFA) method.
- Organize and perform a 5-Why investigation and provide leadership to others.
- Develop recommendations to eliminate the root causes.

Target Audience: All pipeline, oil industry, chemical industry and utility industry individuals with responsibility for managing, operating or maintaining process equipment. To get the most from this course, we recommend that all attendees have a good knowledge of operations, maintenance and/or technical support of petrochemical process equipment.

What: A basic 1 day course that covers the basics of the 1st step in performing a Root Cause Failure Analysis (RCFA), the 5-Why analysis method. The course teaches individuals how to perform a 5-Why to solve simple problems. The course explains the basics concepts of Root Cause Failure Analysis and understanding what a root cause is and how to classify them.

Instructor: Albert Ohliger is President of AO Technical Services, a technical consulting company. He is a retired Electrical/Mechanical Engineer with 33 years of petrochemical engineering experience primarily in oil and gas processing, managing Predictive Maintenance and Reliability programs. Mr. Ohliger is ASNT PDM/TIR Level III certified #107428. He has worked in upstream, downstream and midstream oil industry and polymer chemicals manufacturing. His experience includes

maintenance engineering, reliability engineering, and predictive/preventive maintenance technologies. He is a member of the American Society for Non-destructive Testing

Where: Technical Toolboxes
3801 Kirby Dr. #501
Houston, TX 77098

Price: \$495 per person which includes: attendance fee, Course materials, Continental breakfast, and lunch.

Class Outline:

Day 1:

- Root Cause Analysis Basics
- Local Incident Investigation Procedure Review
- Root Cause Analysis Process
- Keys to Successful Facilitation
- Exercises

Root Cause Failure Analysis Basis

- Why perform RCFA's
- Types and levels of RCFA techniques

Investigation Review Techniques

- Method basics
- Investigation scope determination
- Types of Root Causes

5-Why Method Technique

- Define the problem
- Data Collection
- Timeline determination
- 5-Why tree development

How to handle the Root Causes

- Identification
- Classification
- Problem statement generation

Exercises

- Numerous real life exercises to practice the 5-Why skills

Technical Toolboxes offers training courses in the use of our Pipeline Toolbox software and in several pipeline technical areas. These courses can also be customized to accommodate individual client company needs and delivered at your company's facilities as required. Courses that are offered include:

- * Petroleum Engineering – Technical Overview Training
- * Understanding Fitness-For-Service
- * Understanding Automated Ultrasonic Testing of Pipeline Girth Welds
- * Introduction to Nondestructive Evaluation Course and Demonstrations
- * Understanding Eddy Current as an Advance NDE Technology course
- * Advanced Horizontal Directional Drilling - Advance Coverage of HDD Technologies for Utility and Pipeline Applications
- * Oil & Gas Gathering Pipelines Regulatory Overview & Compliance For Safe Design, Operation and Maintenance of Oil & Gas Gathering Pipelines
- * API 653 Data Analysis & Reporting Training
- * Pipeline Project Management – Practices & Procedures Part I of III – Managing The Project Conception
- * Liquid Penetrant Testing Training Course
- * Hot-Tapping of Pipelines Practices & Procedures
- * Understanding In Service AST Tank Inspection - 1 Day Workshop
"The Hidden Costs of a Traditional Aboveground Storage Tank Inspection & Cleaning"
AST Inspection savings Using In-Service Robotics
- * Pipeline Toolbox Training Course
- * Integrity Assessment of Early Generation (Pre-1970) Pipe
- * Remaining Strength of Corroded Pipe - Official RSTRENG Training & Qualification
- * Pipeline Crossings (Practices & Procedures) - An overview of temporary crossings and API 1102 permanent road and railroad crossings
- * Horizontal Directional Drilling - Comprehensive Coverage of HDD Technologies for Utility and Pipeline Applications.
- * Understanding Long Range Guided Wave Ultrasonic Testing & Interpretation of Results

TTI also collaborates with pipeline industry associations and engineering and consulting firms to provide concentrated training courses in Direct Assessment, Cathodic Protection, Hot-Tap Design and other pipeline technical areas. If you would like to receive specialized or on-site training for one of the courses above, please contact us at 713-630-0505 or by email at training@ttoolboxes.com.



**Please complete the attached form
and fax to TTI at 713-630-0560**

Course Cost: \$805 per student

Course Date:

Name _____

Company _____

Address _____

Address _____

City, State, ZIP _____

Country _____

Phone/Mobile _____

Fax _____

E-mail _____

Payment by Credit Card

Circle One: VISA MasterCard AMEX

CC Number _____

Expiration Date _____

Signature* _____

*** By signing above I commit to paying the course fee when invoiced**

Terms and Conditions: One registration is required per person. Upon receipt of your above registration, an invoice will be generated for payment. Payment is due 30 days from receipt of invoice. Full price of the course fee will be refunded provided written cancellation is received 3 weeks prior to course date. A cancellation after the deadline will receive full credit towards a future date for the same course.

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