



Why: To provide Operations, Maintenance, and Technical individuals the skills to solve complex problems by forming an RCFA (Incident Investigation) team to determine the true root causes and develop the solutions statements to eliminate the root causes. The attendees:

- Understand the Root Cause Failure Analysis (RCFA) method.
- Organize and perform an RCFA (Incident Investigation) Team using the:
 - 5-Why Method
 - Why-Tree Method
- Be able to lead and assist 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, the safety or maintaining process equipment. The 5-Why Methods course is a prerequisite for this course. 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: An advanced 2 day course that covers the details of performing a Root Cause Failure Analysis (RCFA) and to lead an Incident Investigation team. The course teaches individuals how to perform an RFCFA and how to lead others on an Incident Investigation team that focuses on complex problems. The course explains the steps in the RCFA process.

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: \$995.00 per person which includes: attendance fee, Course materials, Continental breakfast, and lunch.

Class Outline:

Day 1:

Root Cause Failure Analysis Basis

- Why perform RCFA's
- Importance of the RCFA to Reliability

Investigation Review Techniques

- Advanced Team Methods
- Transition from initial problem statement to a good statement using 5-Why Method
- Getting to the Systems Root Causes

RCFA steps

- Forming a team
- Data Collection
- Determining the chronology of the events
- Why-Tree and Fault Tree techniques

Exercises

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



Day 2:

Review of the Day 1 process items

How to classify the Root Causes on the Why-Tree

- ➔ Hardware
- ➔ Process
- ➔ Human
- ➔ Systemic

Investigation Fact Finding Techniques

- ➔ Interview techniques
- ➔ Body Language basics
- ➔ Interview documentation

Team leadership Skills

- ➔ Team building skills basics
- ➔ Team leadership basics

Exercises

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

Testing of the skills

- ➔ Written test for course completion certification

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.

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, 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**

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*** 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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