



Approved PMI Training Course

*Guidelines and Application Procedures for
API Recommended Practice 578
Positive Material Identification (PMI)
Using XRF / OES & LIBS Technologies*



*“Guidelines for a Material Verification Program (MVP) for
New and Existing Assets”
API RP 578 3rd Edition*

By

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ANALYTICAL
TRAINING
Consultants



INTRODUCTION

1. OSHA INSTRUCTION: Directive number CPL 03-00-004, effective June 7, 2007, which is the "Petroleum Refinery Process Safety Management Emphasis Program".

The purpose: "this instruction describes policies and procedures for implementing a National Emphasis Program (NEP) to reduce or eliminate the workplace hazards associated with the catastrophic release of highly hazardous chemicals at petroleum refineries.

2. Safety Bulletin from U.S. Chemical Safety and Hazard Investigation Board (CSB)—BP Texas City,

ON July 28, 2005, 4 months after a devastating incident in the Isomerization (Isom) Unit that killed 15 workers and injured 180, the BP Texas City refinery experienced a major fire in the Reside Hydrotreater Unit (RHU) that caused a reported \$30 million in property damage. One employee sustained a minor injury during the emergency unit shutdown and there were no fatalities.

3. Safety Bulletin from U.S. Chemical Safety and Hazard Investigation Board (CSB) ---Chlorine Transfer *Hose Failure*

due to improper material braid construction (i.e., 316L and not the recommended braid of Hastelloy C-276). On August 14, 2002 a 1- inch transfer line ruptured during a railcar offloading operation at DPC Enterprises in Festus, Missouri and released 48,000 pounds of Chlorine into neighboring areas.

4. All the Reported and Unreported "Near Misses" the Oil and Gas Industry has experienced.

Many of us in, this room can give examples of this or has witnessed this happening. Because of either Luck, Proper PMI / inspection, Training, or Recognized and Generally Accepted Good Engineering Practices (RAGAGEP) (i.e., API Recommended Practice 578), we were able to apply these principles and stop the "Near Misses" from turning into Catastrophe.

LEARNING OBJECTIVES

1. Understand & Apply API Recommended Practice 578 Positive Material Identification (PMI) Guidelines
2. Explain How OSHA Instruction-CLP 03-00-004 Nation Emphasis Program (NEP) Applies to Their Industry
3. Better Understanding of OSHA CPL-02-02-045 Process Safety Management (PSM) 29CFR1910.119 With Proper Material Verification Program and Training
4. Practical PMI Applications Using XRF/OES/LIBS Technologies
5. Technical Understanding of How XRF Technology Works
6. Technical Understanding of How OES/LIBS Technology Works
7. Recognize Safe Practices Utilizing XRF Technology. Radiation Safety Understanding How "As Low As Reasonably Achievable" (ALARA) Can Be Attained.
8. Applying "Recognized and Generally Accepted Good Engineering Practices" (RAGAGEP) for Inspection of Material, Warehouse Material Identification Through Positive Material Identification (PMI) XRF/OES/LIBS Analysis

WHO SHOULD ATTEND?

All students enrolled in API 570 classes, i.e. QA/QC inspectors, maintenance, stores, warehouse, inspection testing companies, fabrication shop, and QA/QC reliability departments for oil and gas (Petrochemical and Refining) operations.

CLASS DATES

Please see our Registration Form
-OR-
Visit our website at www.ATC578.com

INSTRUCTOR

Don Mears, Owner, Author and Director of Analytical Training Consultants (ATC), coordinates the sales, marketing and training program for XRF/OES/LIBS PMI equipment (SciAps, Inc. - group). This involves the analyzers operation and training in radiation safety that meets local, State, Federal and International registration requirements. This includes certified report generation for proper material verification programs with the owners/users in the petrochemical, oil and gas industry. Mr. Mears has worked in the oil, gas and refining industry for 30 plus years. He held positions which included preparation and delivery of training presentations and has taught numerous industry courses explaining and applying API standards and recommended practices. This included involvement in two API work groups for revision of API *Manual of Petroleum Measurement Standards Chapter 3-Tank Gauging Section 1B-"Standard Practice for Level Measurement of Liquid Hydrocarbons in Stationary Tanks by Automatic Tank Gauging"* and API 2350 *Overfill Protection for Storage Tank in Petroleum Facilities*. He is currently working on the API Inspector Summit subcommittee for NDE Workshops. He has worked on field testing with PMI analyzers for NACE and has given two speeches regarding HF Alkylation Units and corrosion problems with "Residual Elements (RE) Cr, Ni, Cu found in A-106 Carbon Steel pipes in these units.

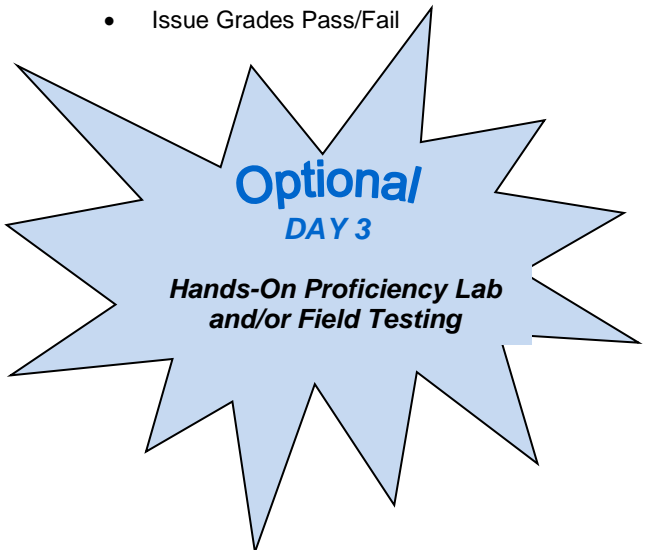
Since 1978 he has been affiliated with the Instrument Society of America. He also serves as the Oil & Gas Industry Consultant for SciAps, Inc. group. He continues to educate and support of the industries needs for safe operating practices. His work with API and their programs and Standards continues to be the high interest and focus for programs that will meet the industry needs. He was the Vice Chairman of the API RP 578 3rd edition. This PMI course is an API-U Approved training for API RP 578 3rd edition.

Other instructors will be announced in the future and Mr. Mears will develop more courses to meet the NDT and PMI market needs. He is committed to the advancement and continual education for the Oil & Gas industry for fulfilling the requirements for the OSHA instructions and requirements for Process Safety Management (PSM) of Highly Hazardous Chemicals.

More courses will be required for the API578 PMI re-certification after the 3 years requirements and each student will benefit in their updated and current knowledge of the different technologies and metallurgy. Continuing education in the industry needs is a high priority of Analytical Training Consultants (ATC).

AGENDA

Day 1		Day 2	
8:00-8:30	Introduction/Arrival <ul style="list-style-type: none">• Why should this course be given?• Purpose of Course	8:00-8:30	Introduction/Arrival <ul style="list-style-type: none">• Review Test Results on Academic Material• Review XRF/OES/LIBS Operation Procedures
8:30-10:00	Through Understanding of API Recommended Practice 578 <ul style="list-style-type: none">• Scope of the Course• Industry References• Terms and Definitions• Extent of Material Verification Program	8:30-10:00	Application of Proper PMI Testing Procedures Using XRF Technology (Hands-on) <ul style="list-style-type: none">• Application• Demonstration• Preparation
10:00-10:15	BREAK	10:00-10:15	BREAK
10:15-12:00	Explain Use of “Material Verification Program” Test Methods XRF <ul style="list-style-type: none">• Introduction and History• How it all works• Limits of Detection (LOD)	10:15-12:00	Application of Proper PMI Testing Procedures Using OES /LIBS Technology (Hands-on) <ul style="list-style-type: none">• Application• Demonstration• Preparation
12:00-1:00	LUNCH	12:00-1:00	LUNCH
1:00-3:00	Explain Use of “Material Verification Program” Test Methods OES & LIBS <ul style="list-style-type: none">• Introduction and History• How it all works• Laboratory XRF/OES Analysis	1:00-3:00	Review and Testing with XRF/OES /LIBS <ul style="list-style-type: none">• Analysis on Different Alloy Samples with XRF• Analysis on Different Alloy Samples with OES• Analysis on Different Alloy Samples with LIBS
3:00-3:15	BREAK	3:00-3:15	BREAK
3:15-4:00	<ul style="list-style-type: none">• Safety Issue “Radiation Safety”• Field Evaluation Sample Preparation• Proper Marking, Record Keeping and Reports	3:15-5:00	Conclusion <ul style="list-style-type: none">• Continue Alloy Analysis XRF/OES/LIBS• Review Test Results and Questions• Issue Grades Pass/Fail
4:00-4:30	Review <ul style="list-style-type: none">• Review and Testing on Academic Material of API RP 578		
4:30-5:00	Written Exam “Open Book” <i>Course testing is designed to verify, the understanding of material as stated in the Course Objectives.</i>		



Registration Form

2 Day Guidelines and Application Procedures for
API Recommended Practice 578
Positive Material Identification (PMI)
Using XRF/OES/LIBS Technologies



Attendees need to register directly with Don Mears, Analytical Training Consultants, (ATC). instead of contacting API.

Please type or print clearly, using a separate form for each attendee.

Name _____ Company _____
 Nickname for Badge _____ Job Title _____ Dept./Div. _____
 Street Address _____ City _____ State _____ Zip _____
 Country _____ Phone _____ Fax _____
 E-mail (Required) _____



Special Needs

If you require any special assistance, please make a note here: _____

Registration Fees in U.S. Dollars ** Please E-mail or fax form back to Don Mears**

<u>Class Dates</u>	<u>Location</u>	<u>API Member</u>	<u>Non-Member</u>
February 16-17, 2022	Analytical Training Consultants, (ATC) Homewood Suites by Hilton Kingwood 23320 Highway 59 North Kingwood, TX 77339 (See map for location) ATC Phone 281-684-8881 ATC Fax: 281-358-2177 E-Mail: Don@ATC578.com Note: Class Begins at 8:00 a.m. Ends at 5:00 p.m.	<input type="checkbox"/> \$1,250	<input type="checkbox"/> \$1,750
April 20-21, 2022		<input type="checkbox"/> \$1,250	<input type="checkbox"/> \$1,750
June 22-23, 2022		<input type="checkbox"/> \$1,250	<input type="checkbox"/> \$1,750
August 17-18, 2022		<input type="checkbox"/> \$1,250	<input type="checkbox"/> \$1,750
October 19-20, 2022		<input type="checkbox"/> \$1,250	<input type="checkbox"/> \$1,750
December 14-15, 2022		<input type="checkbox"/> \$1,250	<input type="checkbox"/> \$1,750

Private Classes upon Request Location Will Vary \$1,250 \$1,750
 (Minimum of 10 Students Required)

Optional Day 3 \$625 \$750
Hands-On Proficiency Lab and/or Field Testing
 Please Note: Minimum of \$ 2000 per day. (Group Discounts Available)

Method of Payment

To pay by credit card: Complete this form and send by fax to: **Analytical Training Consultants, (ATC) 281-358-2177**

To pay by check: Make check payable to **Analytical Training Consultants, (ATC) 1719 Burning Tree, Kingwood, Texas 77339, Phone: 281-684-8881**

For invoicing: Upon request, invoices can be sent, but payment must be received before the course

Cancellations: For written cancellations received after two weeks before course, a \$200 charge will apply. For cancellations after one week before course, a \$400 charge will apply. No refunds will be provided after course start date. Class substitutions may be permitted.

Receipts will be faxed or E-mailed within 10 days after course ends

Confidentiality: ATC has a policy in place, consistent with applicable laws, to safeguard the confidentiality of all information provided by students, including results of exams. These arrangements extend to organizations or individuals acting on ATC's behalf. Except as required in this document, information about a student shall not be disclosed to a third party (including students' employer) without the written consent of the student.

<u>Card Type</u>	<input type="checkbox"/> VISA	<input type="checkbox"/> MasterCard
Card Number	_____	
Exp. Date	_____	Cardholder's Zip _____
Name on Card	_____	
Signature	_____	