PowerPro360

ELECTRIC POWER TRAINING

Training to strengthen your ability to manage and maintain a reliable electric power distribution system

2024 COURSE CATALOG

Knowledge is Power. Literally.

Strengthen your expertise
Flexible formats and pricing
Earn industry credits

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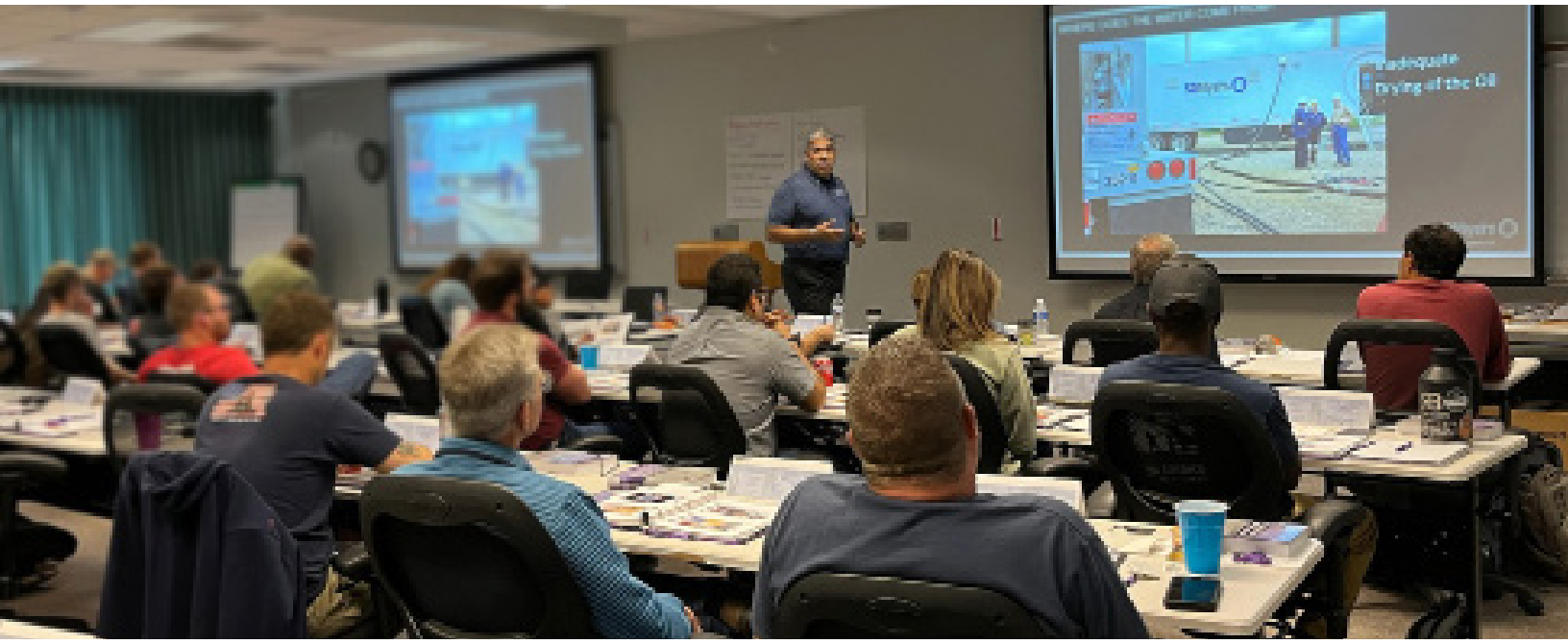


2024 TRAINING CALENDAR

	DATE	COURSE	ACCESS	LENGTH	MORE INFO
January	Jan 25	Inspection and Sampling of Transformers	Live Online	1 Day	Page 8
February	Feb 5-9	Transformer Management 1 (TM1)	Live Online	4.5 Days	Page 5
March	Mar 7	Dissolved Gas Analysis (DGA) Workshop	Live Online	3 Hours	Page 8
April	April 23-25	Transformer Management 1 (TM1) Hosted at SDMyers-Tallmadge, OH	In-Person	3 Days	Page 5
May	May 14	Inspection and Sampling of Transformers	Live Online	1 Day	Page 8
June	June 11-13	Transformer Management 2 (TM2) Hosted at SDMyers-Tallmadge, OH	In-Person	3 Days	Page 6
July	July 23	Dissolved Gas Analysis (DGA) Workshop	Live Online	3 Hours	Page 8
August	Aug 20-22	Transformer Management 2 (TM2)	Live Online	3 Days	Page 6
September	Sept 17-20	Transformer Management 1 (TM1) Hosted at SDMyers-Tallmadge, OH	In-Person	3 Days	Page 5
October	Oct 3	Dissolved Gas Analysis (DGA) Workshop	Live Online	3 Hours	Page 8
November	Nov 12-14	Transformer Management 3 (TM3)	Live Online	3 Days	Page 7
December	Dec 9-13	Transformer Management 1 (TM1)	Live Online	4.5 Days	Page 5

THE TRANSFORMER MANAGEMENT SERIES

More than a half-century of experience, knowledge, and expertise in transformer maintenance comes together in Electric Power IQ's Transformer Management Training Series. The series consists of three independent courses on transformer maintenance that can be taken individually, as a pair, or as a series. Choose a course that makes sense for you depending on your role and responsibilities. Individuals who take both TM1 and TM2 will receive a Master Transformer Maintenance Professional Certification. Individuals who take both TM2 and TM3 with receive a Master Transformer Reliability Professional Certification.

Not sure where to start?

Find out what training you need...
Put your knowledge to the test with our
TRANSFORMER IQ QUIZ

TRANSFORMER MANAGEMENT 1 (TM1)

FOUNDATIONAL

CREDITS
2.05 CEU/20.5 PDH/20 NETA CTD

IN-PERSON 3 DAYS
LIVE ONLINE 4.5 DAYS
ON-DEMAND YOUR PACE

SUMMARY
Foundational course on transformers, electrical and diagnostic testing, and maintenance principles (more on page 5).

WHO IS IT FOR?
- Maintenance Technicians
- Reliability Specialists
- Facility Managers
- Electrical Maintenance professionals
- Anyone responsible for electrical power maintenance

MORE INFORMATION

TRANSFORMER MANAGEMENT 2 (TM2)

INTERMEDIATE

CREDITS
1.8 CEU/18 PDH/18 NETA CTD

IN-PERSON 3 DAYS
LIVE ONLINE 3 DAYS

SUMMARY
Intermediate course for understanding how to apply reliability-centered maintenance procedures (more on page 6).

WHO IS IT FOR?
- Maintenance Technicians
- Reliability Specialists
- Facility Managers
- Electrical Maintenance professionals
- Anyone responsible for electrical power maintenance and reliability

MORE INFORMATION

TRANSFORMER MANAGEMENT 3 (TM3)

ADVANCED

CREDITS
1.8 CEU/18 PDH/18 NETA CTD

LIVE ONLINE 3 DAYS

SUMMARY
Advanced training on the transformer lifecycle and reliability management for organizations and substations (more on page 7).

WHO IS IT FOR?
- Reliability Engineers
- Substation & Utility Managers
- Facility Managers
- Chief Reliability Officers (CRO)
- Anyone responsible for corporate-level reliability

MORE INFORMATION

MT MPC

Master Transformer Maintenance Professional Certification
eligible when completing **TM1 & TM2.**

MT RPC

Master Transformer Reliability Professional Certification
eligible when completing **TM2 & TM3.**

TRANSFORMER MANAGEMENT 1 (TM1)

Credits: 2.05 CEU/20.5 PDH/20 NETA CTD

TRANSFORMER MANAGEMENT 1 is intended to lay a strong foundation for those who are in any way responsible for transformer maintenance. Students will gain a basic understanding of transformers, oil and electrical tests, maintenance principles, and the importance of a reliable electric power system. Nine-course sections are available either in-person or live online.

COURSE CONTENT

TM1 offers a series of 9 courses spread over 4.5 days that will lay a solid foundation for those responsible for transformer maintenance. Those who purchase the TM1 Learning Plan will also receive a FREE copy of the Transformer Maintenance Guide, 3rd Edition (a $149 value), and an SDMyers Moisture Calculator.

COURSE DATES

In-Person

- April 23-25 | Hosted at SDMyers-Tallmadge, OH
- September 17-20 | Hosted at SDMyers-Tallmadge, OH

Live Online

- February 5-9
- December 9-13

TM1 LIVE ONLINE 5-DAY SCHEDULE

DAY ONE | MONDAY

Introduction to Reliability-Centered Maintenance
9:00 – 11:00 am EST | Earn .20 CEU/2 PDH/2 NETA CTD

Transformer Components and Functions
1:00 – 3:00 pm EST | Earn .20 CEU/2 PDH/2 NETA CTD

DAY TWO | TUESDAY

Solid Insulation Life and Aging
9:00 – 11:00 am EST | Earn .20 CEU/2 PDH/2 NETA CTD

Insulating Liquids
1:00 – 3:30 pm EST | Earn .25 CEU/2.5 PDH/2.5 NETA CTD

DAY THREE | WEDNESDAY

Oil Tests and Interpretation
9:00 – 11:30 am EST | Earn .25 CEU/2.5 PDH/2.5 NETA CTD

Moisture in Transformers
1:00 – 3:00 pm EST | Earn .20 CEU/2 PDH/2 NETA CTD

DAY FOUR | THURSDAY

Dissolved Gas Analysis (DGA) and Furans
9:00 – 11:30 am EST | Earn .25 CEU/2.5 PDH/2.5 NETA CTD

Electrical Testing of Transformers
1:00 – 3:30 pm EST | Earn .25 CEU/2.5 PDH/2.5 NETA CTD

DAY FIVE | FRIDAY

Applied Transformer Maintenance
9:00 – 11:30 am EST | Earn .25 CEU/2.5 PDH/2.5 NETA CTD

TM1 COURSE INFO & REGISTRATION PAGE

TRANSFORMER MANAGEMENT 2 (TM2)

Credits: 1.8 CEU/18 PDH/18 NETA CTD

TRANSFORMER MANAGEMENT 2 is for the person who understands all the individual components of Transformer Maintenance, including Oil Testing, Electrical Testing, and Maintenance Standards, and is responsible for applying these components. This course walks the attendee through the decision-making process of understanding the importance of the equipment, determining what maintenance to perform and when to perform it based on Reliability-Centered Maintenance Procedures.

COURSE DATES

In-Person

- June 11-13 | Hosted at SDMyers-Tallmadge, OH

Live Online

- August 20-22

TM2 COURSE TOPICS

- Oil Tests & Standards
- Liquid Screen Tests
- Moisture in Transformers
- DGA & Furans
- Electrical Testing
- Reliability
- Case Studies

Participants receive access to course recordings for 12 months.

TM2 COURSE INFO & REGISTRATION PAGE

TRANSFORMER MANAGEMENT 3 (TM3)

Credits: 1.8 CEU/18 PDH/18 NETA CTD

TRANSFORMER MANAGEMENT 3 examines the lifecycle of the transformer, including new equipment purchasing specifications, disposal of old transformers, transportation, installation and start-up, and reliability management. This course is for the person who is the lead or manager of transformers and substations.

COURSE DATES

Live Online

- November 12-14

TM3 COURSE TOPICS

- Purchasing
- Disposal
- Transportation
- Installation/Commissioning
- Reliability

Participants receive access to course recordings for 12 months.

TM3 COURSE INFO & REGISTRATION PAGE

SPECIAL TOPICS

IF NOT MINERAL OIL, THEN WHAT?

EARN 0.2 CEU/2 PDH/2 NETA CTD

This course presents the benefits and cautions of using alternate insulating liquids for large power transformers. The use of insulating liquids for power transformers is evolving with growing environmental and fire protection awareness. Significant benefits in alternative insulating liquids are causing a shift in what is used. These alternative liquids have different properties that impact power transformers' design, manufacturing, and service.

COURSE DATES

Live Online

- No dates avalable in 2024

DISSOLVED GAS ANALYSIS (DGA) WORKSHOP

EARN 0.3 CEU/3 PDH/3 NETA CTD

This course takes a deep dive into the importance of DGA, what industry standards state, how to use test interpretation tools, and how to apply the test results to increase the reliable life of the transformer. The instructor and class will work through real-world test results, apply the different interpretation tools to the data, then work together to make recommendations for solutions for corrective action(s) on the unit.

COURSE DATES

Live Online | 3 hours

- March 7
- July 23
- October 3

INSPECTION AND SAMPLING OF TRANSFORMERS

EARN 0.3 CEU/3 PDH/3 NETA CTD

This course reviews the safe and proper procedures needed to obtain a representative sample of dielectric fluids. It covers personal protective equipment, special care transformers, visual inspection, gauges, nameplates, sampling containers, proper methods and techniques, packaging, and applying nitrogen.

COURSE DATES

Live Online | 3 hours

- January 25
- May 14

WET OR NOT WET? THAT IS THE QUESTION & WE HAVE THE ANSWER!

EARN 0.2 CEU/0.2 PDH

This course provides key information on:

- Where does moisture come from?
- What problems does it cause?
- How do I determine if my transformer is wet?
- What is IEEE Standard C57.106?
- Utilizing electrical testing to help determine the presence of moisture
- Effective methods to remove and prevent moisture

COURSE DATES

Live Online

- No dates avalable in 2024

POSITION SPECIFIC PACKAGES

With position-specific packages of on-demand courses tailored to your role, you will develop your skills to work more efficiently, accurately, and safely.

ELECTRIC POWER MAINTENANCE FOUNDATION (10 courses)

The Electric Power Maintenance Foundation Learning Plan consists of 10 foundational courses specifically grouped together for the electric power maintenance worker. The courses cover subjects and topics that are essential for every level of learner, from the requirements of safety and basic control circuits to foundational transformer maintenance. Each course will teach and reinforce foundational electric power maintenance principles to ensure a safer, well-trained technician.

- Electrical Safety
- General Protective Equipment
- Troubleshooting Electrical Control Circuits
- Electrical Shock
- Arc Flash Safety
- Hazardous Waste Safety
- Lockout Tagout
- Electrical Maintenance (Transformers)
- Mechanical Maintenance (Transformers)
- 4 Functions of Insulating Liquids (Transformers)

VISUAL INSPECTION AND SAMPLING OF TRANSFORMERS (6 courses)

The Visual Inspection and Sampling of Transformers Learning Plan consists of 6 courses that cover the proper and safe procedures needed to obtain a representative sample of dielectric fluids. Topics include safety in a substation and PPE; special care transformers; transformer parts and visual inspections; gauges, nameplates, and Field Copy Reports; sampling containers and proper sampling techniques; and applying a nitrogen blanket. Obtaining a good representative sample is an imperative first step to the health and reliability of your transformer. This Learning Plan provides the knowledge needed to pull a proper sample to assure accurate test results.

- Safety in a Substation and Personal Protective Equipment
- Special Care Transformers
- Transformer Parts and Visual Inspection
- Gauges, Nameplates and Field Copy Reports
- Sampling Containers and Proper Sampling Techniques
- Applying a Nitrogen Blanket

TECHNICIAN LEARNING PLAN (23 courses)

The Technician Learning Plan consists of 23 courses specifically grouped together to address the needs of the electrical technician who manages the maintenance of the fluid-filled transformer. These courses cover topics from testing (chemical and electrical); diagnosis and analysis methods; maintenance procedures; performing a safe visual inspection; and the proper way to obtain a representative fluid sample. This Learning Plan is recommended for those who are in any way involved in maintaining the life of the liquid insulation of the transformer and extending the life of the solid insulation though such actions.

- Liquid Screen Tests
- Other Routine Tests
- Why Dissolved Gas Analysis?
- Qualitative Method
- Quantitative Method
- Furans
- Revision of IEEE DGA Guide of 2019
- Electrical Testing Overview
- Routine Electrical Tests, Part 1
- Routine Electrical Tests, Part 2
- Electrical Testing Bushings
- Sweep Frequency Response Analysis (SFRA)
- Mechanical Maintenance
- Electrical Maintenance
- Oil Processing, Part 1
- Oil Processing, Part 2
- Oil Processing, Part 3
- Safety in a Substation and Personal Protective Equipment
- Special Care Transformers
- Transformer Parts and Visual Inspection
- Gauges, Nameplates and Field Copy Reports
- Sampling Containers and Proper Sampling Procedures
- Applying a Nitrogen Blanket

POSITION SPECIFIC PACKAGES

ELECTRICIAN LEVEL 1 LEARNING PLAN (10 courses)

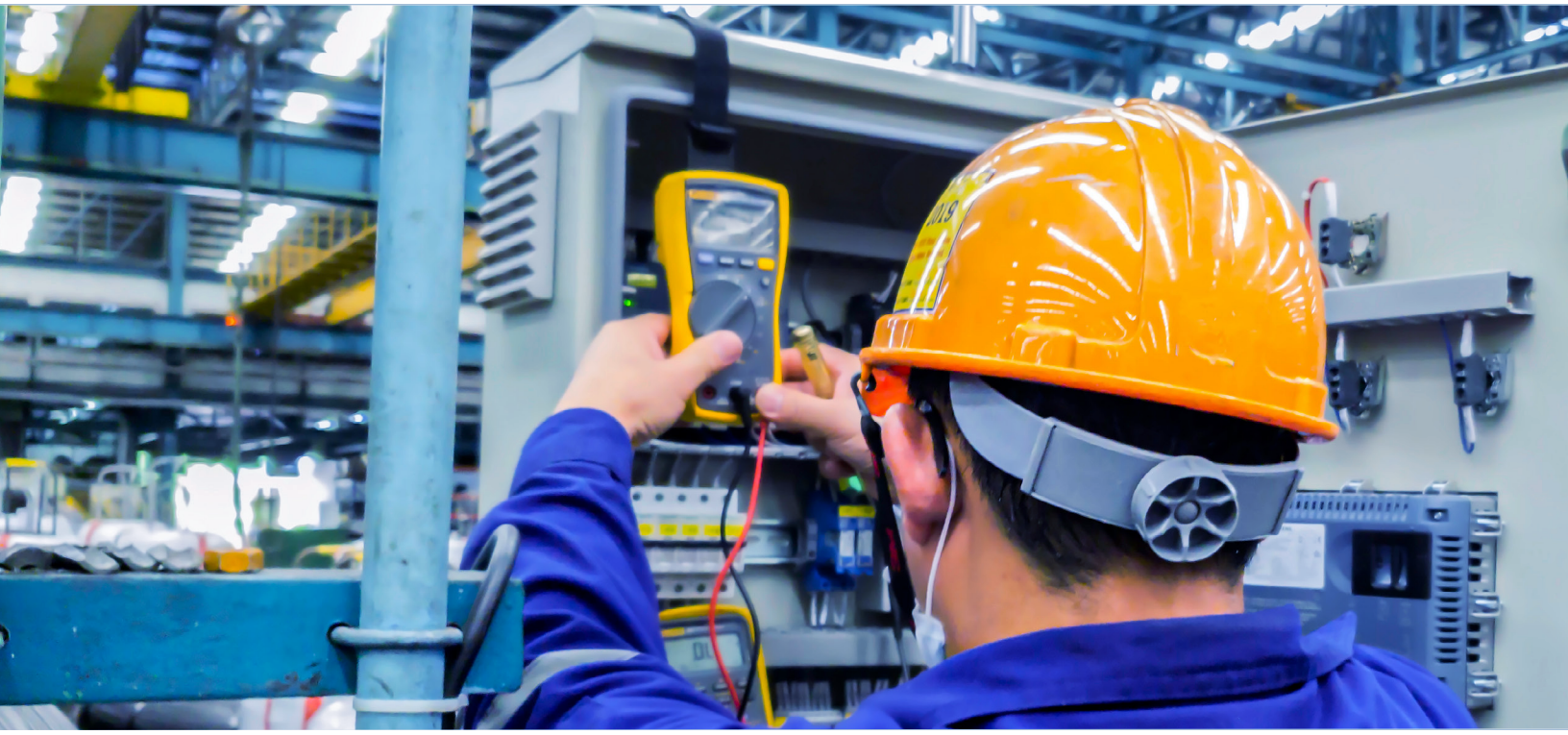
This Learning Plan consists of 10 courses specifically grouped together for the Level 1 Electrician. The courses cover subjects and topics in electrical print reading, electrical theory, and safety. This plan is excellent for the training of entry-level electricians as well as a refresher for the intermediate level electrician, and for the multi-craft training needs of process and manufacturing facilities.

- Electrical Schematics
- Electrical Diagrams
- Ohm's Law
- AC Characteristics
- Three-Phase AC Circuits
- Semiconductors and Diodes
- Rectifiers and Filters
- Power Devices
- Introduction to Digital Devices
- Electrical Safety

ELECTRICIAN LEVEL 2 LEARNING PLAN (12 courses)

This Learning Plan consists of 12 courses specifically grouped together for entry- to mid-level electricians. Courses cover test equipment and train participants to understand the operation and troubleshoot electrical control equipment. They instruct participants on how to identify and apply the basic materials of a conduit system and cover the important safety subjects of lockout/tagout and arc flash safety. This program is excellent for the training of electricians and electronic technicians and for the multi-craft training needs of process and manufacturing facilities.

- Multimeters
- Oscilloscope
- Ammeters, Meggers, and Wheatstone Bridges
- Fuses and Circuit Breakers
- Limit Switches
- Switches, Coils and Overloads
- Magnetic Starters
- Troubleshooting Electrical Control Circuits
- Inverters-Operation and Maintenance
- Conduit Installation
- Lockout/Tagout
- Arc Flash Safety



ON-DEMAND MODULES

TRANSFORMER MANAGEMENT 1 MODULES

Transformer Management 1 (TM1) lays a strong foundation for those who are in any way responsible for transformer maintenance. Students will gain a basic understanding of transformers, oil and electrical tests, maintenance principles, and the importance of a reliable electrical power system.

The entirety of TM1 is divided into 32 Modules. The format of the modules is prerecorded live lectures, video presentations, and interactive activities. All sessions conclude with a knowledge-check quiz. Each module can be taken on-demand at the attendee's convenience within one year of first access.

Learning Format

CONTENT OUTLINE

Introduction to Reliability Centered Maintenance

- Selecting the Best Transformer Maintenance Strategy
- Key Factors in Your RCM Program
- Prioritizing and Managing Your Risks

Transformer Components and Functions

- Core Steel and Core Configurations
- Conductors and Windings
- Solid Insulation

Solid Insulation Life and Aging

- Short Circuit Forces
- Mechanical Strength
- Solid Insulation Aging

Insulating Liquids

- 4 Functions of Insulating Liquids
- Oxidation Inhibitor
- Alternate Fluids

Oil Tests and Interpretation

- Liquid Screen Tests
- Other Routine Tests

Moisture in Transformers

- Problems Created in Your Transformer
- Understanding Percent Saturation
- Percent Moisture by Dry Weight

Dissolved Gas Analysis and Furans

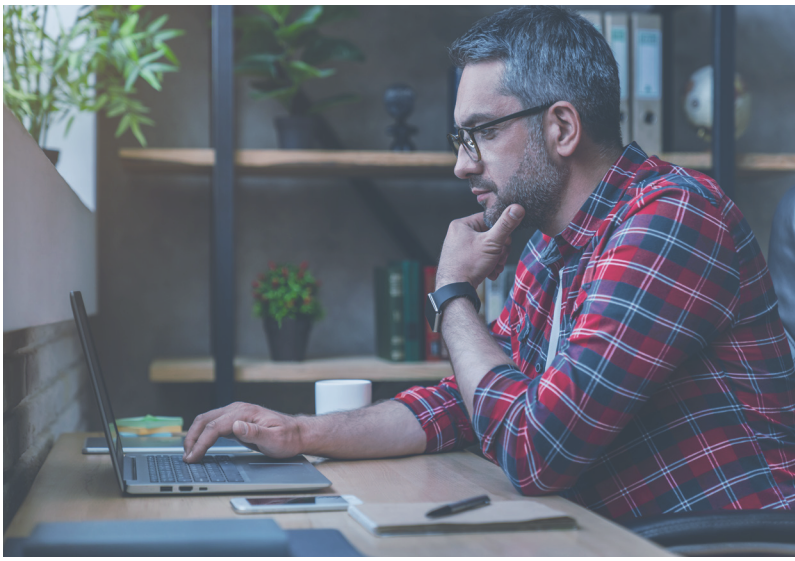
- Why Dissolved Gas Analysis?
- Qualitative Method
- Quantitative Method
- Furans
- Revision of IEEE DGA Guide of 2019

Electrical Testing

- Electrical Testing Overview
- Routine Electrical Testing Part 1
- Routine Electrical Testing Part 2
- Electrical Testing of Bushings
- Sweep Frequency Response Analysis (SFRA)

Applied Transformer Maintenance

- Mechanical Maintenance
- Electrical Maintenance
- Oil Processing, part 1
- Oil Processing, part 2
- Oil Processing, part 3



ON-DEMAND MODULES

DRY-TYPE TRANSFORMER MODULES

Deepen your learning experience and broaden your knowledge with additional on-demand course modules.

Dry-Type Transformers Module 1:
Design Comparison and Purchasing Consideration
EARN .03 CEU/1 NETA CTD

Dry-Type Transformers Module 2:
The Selection Process
EARN .03 CEU/1 NETA CTD

Dry-Type Transformers Module 3:
Transformer Maintenance
EARN .03 CEU/1 NETA CTD

ON-DEMAND MODULES

ELECTRICAL SKILLS SERIES

The electrical training courses cover the fundamentals of electricity and progress through how to safely maintain, troubleshoot, and repair industrial electrical equipment.

Electrical Print Reading Learning Plan

This comprehensive interactive multimedia training program consists of two individual lessons that train participants to read and interpret wiring diagrams, single line diagrams, and ladder diagrams, and how to build electrical diagrams.

- Electrical Schematics
- Electrical Diagrams

Electrical/Electronic Test Equipment Learning Plan

This comprehensive interactive multimedia training program consists of three individual lessons that train participants how to properly use multimeters, megohmmeters, clamp-on ammeters, Wheatstone bridges, and oscilloscopes.

- Multimeters
- Oscilloscopes
- Ammeters, Meggers, and Wheatstone Bridge

Electrical Theory for Troubleshooters Learning Plan

This comprehensive interactive multimedia training program consists of seven individual lessons that train participants in the principles of AC/DC and solid-state theories. Digital electronic theory is also introduced.

- Ohm's Law
- AC Characteristics
- Three Phase AC Circuits
- Semiconductors and Diodes
- Rectifiers and Filters
- Power Devices
- Introduction to Digital Devices

Digital Electronic Theory Learning Plan

This comprehensive award-winning interactive multimedia training program consists of four individual lessons that train participants to understand the operation of various types of digital circuits and to effectively troubleshoot these circuits.

- Binary Logic Circuits
- Codes, Encoders, Decoders, and Flip-Flops
- Counters and Shift Registers
- Data Transmission, Conversion, and Storage

Conduit Installation Learning Plan

This comprehensive interactive multimedia training program consists of one lesson that trains participants on identifying and applying the basic materials of a conduit system, as well as general practical methods of bending and installing conduit.

- Conduit Bending and Installation

AC and DC Motors Learning Plan

This comprehensive interactive multimedia training program consists of four individual lessons that train participants to understand, maintain, and test AC and DC motors.

- AC Motor Theory
- AC Motor Maintenance
- DC Motor Theory
- DC Motor Maintenance

Programmable Controllers

This comprehensive interactive multimedia training program consists of three individual lessons that train participants to understand programmable controller system operations, interpret power flow through ladder logic, and explore principles of operation, characteristics, and capabilities of analog control using programmable logic controllers.

- Principles of Operation
- Interpreting Ladder Logic
- Programmable Controllers for Analog Control

Electrical Control Equipment

This comprehensive award-winning interactive multimedia training program consists of six individual lessons that train participants to understand the operation of and troubleshoot circuit breakers, limit switches, overload
relays, motor starters, and electrical control circuits.

- Fuses and Circuit Breakers
- Limit Switches
- Switches, Coils, and Overloads
- Magnetic Starters
- Troubleshooting Electrical Control Circuits
- Inverters - Operation and Maintenance

ON-DEMAND MODULES

BASIC SKILLS SERIES

The basic skills training courses will empower your workplace with the knowledge, skills, and support to perform their jobs comfortably, safely, and effectively. These courses include multiple learning styles, learner-led control, engaging learning activities, retention practices, comprehensive assessment mechanisms, feedback prompting, modularized lessons, and a variety of other instructional design concepts that have been specifically engineered with the capabilities of the technology environment in mind.

Applied Mathematics Learning

This comprehensive interactive multimedia training program, consisting of nine individual lessons, trains participants to improve their mathematical skills from whole number operations through algebra, geometry, and statistics. This program emphasizes problem solving skills, using real-life examples from both the work and home environments.

- Whole Number Operations
- Decimals
- Fractions
- Percent, Ratio, and Proportion
- Positive and Negative Numbers, Powers, and Roots
- Introduction to Algebra
- Measurement
- Introduction to Geometry
- Introduction to Statistics

Reading and Writing Enhancement Learning Plan

This program trains participants to improve reading and writing skills on the job through instruction and practice with realistic workplace applications. The program also includes a diagnostic pretest which can be used to place participants at the appropriate lesson in the program.

- Procedures and Instructions
- Forms and Applications
- Memos and Logs
- Workplace Information Documents

SAFETY SKILLS SERIES

Safety skills training educates and empowers you on how to recognize and prevent at-risk conditions or behaviors before they lead to an incident. Our safety skills courses include multiple learning styles, learner-led control, engaging learning activities, retention practices, comprehensive assessment mechanisms, feedback prompting, modularized lessons, and a variety of other instructional design concepts that have been specifically engineered with the capabilities of the technology environment in mind.

Electrical Safety Learning Plan

This learning plan consists of ten lessons designed to provide training for electricians, mechanics, and others working with or around electricity. The lessons in this learning plan provide an understanding of electricity focused on increased awareness and prevention of industrial accidents.

- Working Safely with Electricity
- Electrical Circuits and Supplies
- Electrical Shock
- Safe Electrical Practices
- Protective Gloves and Sleeves
- Eye and Face Protection
- Protective Helmets
- General Protective Equipment
- Lockout/Tagout
- Hazard Communication

ON-DEMAND MODULES

COMPLIANCE SERIES

This series relates to regulations compliance. The courses below contain audio and/or video to help keep students engaged, ensure training moves quickly, and help lead to a high retention rate of the information presented.

Aerial Boom Lifts

This online Aerial Boom Lift Certification safety training course presents an overview of safe operating procedures from aerial boom lifts. This course covers the responsibilities of owners, supervisors, and operators and presents hazards from uneven surfaces, falling, electric shock, equipment collapse, inclement weather, nearby work, inexperience or improper operation, mechanical defects, and inadvertent operation.

Ammonia Refrigeration

This course is designed to assist employers and employees in identifying and controlling the hazards associated with the operation and maintenance of ammonia refrigeration systems. This course consists of ammonia Receiving and Story, Safety, and Emergency Response modules. This online course satisfies the training requirements for the OSHA 29 CFR § 1910.119 Ammonia Refrigeration Process safety management of highly hazardous chemicals.

Arc Flash Study

This course presents an overview of measures to reduce hazards presented by arc flash events. It covers basic electrical concepts, circumstances that can present the risk of arc flashes, electrical industry safety standards, and hazard control measures when job responsibilities cause you to work on or near equipment at risk for arc flash. Because of the nature of arc flash events, we will review the regulations for both electrical and fire safety.

Bloodborne Pathogens

This course presents an overview of the U.S. Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens Standard, including an explanation of the history and creation of the standard and its updates. It also discusses some of the scenarios in which a person might sustain a needlestick injury, the potential pathogens one may be exposed to in the workplace, and ways to prevent and respond to potential injury.

Confined Space Entry

This confined space training course presents an overview of the OSHA Confined Spaces regulations as they relate to competent entrants and attendants. It covers basic concepts and a general overview of the regulations, including proper methods and rules that authorized entrants and attendants must follow before, during, and after confined space entry.

Confined Space Competent Person/Supervisor

This course presents an overview of the OSHA Confined Space Entry regulations as they relate to the competent person entry supervisor. It covers basic concepts and a general overview of the regulations, including proper methods and rules that competent entry supervisors must follow before, during, and after confined space entry. Persons taking this course should already have received Permit/Non-Permit Confined Space Entry training.

Construction Asbestos Awareness

This asbestos awareness training course covers requirements for regulating asbestos exposure in the construction industry. The focus of this course is to familiarize you with the standard for safely working with materials that may contain asbestos. This course was developed primarily for use in North America but certainly is appropriate for international audiences.

Construction Confined Space Entry

This online course provides basic safety training to help understand the hazards associated with construction industry confined spaces, both physical and atmospheric, and preventative measures against them. The course includes information on protective, monitoring, and testing equipment; safety regulations and why they are in place; and the roles and responsibilities of employers, entrants, and attendants in preventing these casualties.

Construction Confined Space Competent Person/Supervisor

This course provides basic safety training to help understand the hazards associated with confined spaces, both physical and atmospheric, and preventative measures against them. The course includes information on protective, monitoring, and testing equipment; safety regulations and why they are in place; and the responsibilities of employers and supervisors in preventing these casualties.

ON-DEMAND MODULES

Construction Electrical Safety
This training is intended as an overview of the Constructional Electrical Standard, providing explanations of the various requirements set by OSHA. The approach is to cover hazard identification, avoidance, and control, along with practical information on safe work practices.

Construction Fall Protection
This course presents an overview of construction fall protection - the hazards, safety measures, and regulations required to be in compliance with Occupational Safety and Health Administration (OSHA) standards. This course also covers the responsibilities of employers and employees, as well as proper equipment usage and the different systems for fall prevention available.

Construction Lead Awareness
This training is intended as an overview of 29 CFR 1926.62 and includes training on how to apply these regulations to specific situations and tasks that should be provided by your organization or other resources. You might need additional training on hazards and safety.

Construction Lockout Tagout
This course is targeted to employees in the construction industry that work around energized machines or equipment and covers a related, general industry standard: 29 CFR 1910.147, the Control of Hazardous Energy or Lockout Tagout. This Construction Lockout Tagging of Circuits course describes hazard identification, avoidance, and control, along with practical information on safe work practices.

Construction Roadway Temporary Traffic Control Safety Training
This course provides an overview of traffic control during roadway construction.

Construction Scaffolding
This course covers the OSHA Safety Standards for Scaffolds used in the Construction Industry standard (1926 subpart L) and is targeted to employees of organizations that must use or erect and/or dismantle different types of scaffolding utilized in the construction industry. This course covers hazard identification, control, and checklists for specific types of scaffolds.

Construction Silica Safety
This course presents an overview of the dangers of silica, specifically in construction. The course covers safe work procedures where workers are exposed to silica; the focus is to familiarize you with practices that decrease the risk of exposure and to offer best practices for mitigating the dangers of exposure to silica in construction.

Construction Steel Erection
The goal of this course is to help you understand the risks involved in working steel erection jobs. We will review some common hazards and the ways in which these vary in different environments and job stages, design decisions that can help prevent and isolate these hazards, and practices that will reduce the likelihood of injury.

Electrical Safety
This course addresses electrical safety requirements to safeguard employees and contractors who work near exposed energized parts, electrical equipment, and wiring in hazardous locations. This training is designed to help protect persons exposed to dangers such as electric shock, electrocution, fires, and explosions.

Exit Routes, Emergency Action, Fire Prevention, and Protection
This course provides a description of the design and construction requirements for exit routes; the maintenance, safeguards, and operational features of exit routes; as well as various forms of fire detection and suppression systems. It also presents an overview of the rules and regulations associated with the safe evacuation of a building through the use of exit routes and the fire protection standard during a fire emergency.

Eye and Face Protection
This online course presents an overview of the OSHA eye and face protection standards, which are used in a variety of industries. The course covers the responsibilities of employees and employers alike, as well as industry standards for eye and face protection in the workplace. It presents hazards from dust, heat, chemicals, optical radiation, and more. You will also learn about the injuries workers can suffer to their eyes and face without PPE, and how to prevent and treat them.

Fire Extinguishers
This course covers the OSHA regulations for portable fire extinguishers. It describes the standard, risks, placement, use, maintenance, and testing of portable fire extinguishers provided for use by employees.

ON-DEMAND MODULES

Forklift Safety
This course familiarizes you with the regulations, responsibilities, and best practices as outlined in the CFR 1910.178(a) requirements for forklift operators and forklift maintenance. Keep in mind that your skill in operating a forklift protects not only your well-being but the well-being of the people you work with and the safety of the environments you work in. Your forklift skills can prevent costly material damage, life-altering injuries, and even death.

GHS Hazard Communication (Workers Right to Know)
This course presents an overview of the requirements of OSHA's Hazard Communication Standard, which requires the development and dissemination of information about the identities and hazards of chemicals used in the workplace. The course covers a variety of topics related to chemical hazard communication, including but not limited to the importance of the Hazard Communication Standard, the necessity of a written hazard communication program at every workplace where employees are at risk of exposure to hazardous materials, the proper labeling of chemicals, and information on Safety Data Sheets (SDSs). The course also includes information on blood-borne pathogens, which are biological agents that can be hazardous to health. This course is designed specifically for workers in general industry settings.

Hand and Power Tool Safety
This hand and power tool safety training course covers OSHA Hand and Power Tool Safety standards, focusing on General Industry 29 CFR 1910 Subpart P. Employees should be trained in the proper use of all tools and be able to recognize the hazards associated with different types of tools and required safety precautions.

Hazardous Waste Safety
This course presents an overview of the Hazardous Waste safety guidelines set forth by the Occupational Safety and Health Administration (OSHA). Topics include recognizing and identifying hazardous wastes, minimizing exposure to hazardous wastes, implementing safety and health programs, and completing required training.

HAZWOPER 40-Hour
This course covers the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard. The HAZWOPER standard is a set of OSHA-created guidelines that regulate hazardous waste operations. Proper safety training ensures that workers understand and comply with these standards to maintain a safe worksite and minimize risks for employees and the environment.

HAZWOPER 24-Hour
This course discusses the U.S. Federal Hazardous Waste Operations and Emergency Response (HAZWOPER) standard. This standard covers how the United States defines materials and waste as hazardous and explains the regulations set forth to ensure worker and environmental safety. It also provides the information needed to safely run a functioning site that contains hazardous materials, including the steps to prevent and control emergency situations related to hazardous materials.

HAZWOPER 8-Hour Annual Refresher
This online, 8-hour refresher training course satisfies the OSHA annual HAZWOPER refresher training requirements for workers, managers, and supervisors as outlined in 29 CFR 1910.120 and 1926.65.

Every day, workers in various business industries come in close contact with hazardous materials. Without proper safety training, exposure to hazardous materials can pose short- and long-term threats to their health and safety. The federal Hazardous Waste Operations and Emergency Response (HAZWOPER) standard regulates hazardous waste operations from inception to disposal.

People who work in hazardous waste operations and those involved in emergency response must complete annual HAZWOPER 8-hour refresher training as required by 29 CFR 1910.120. Our online certification course provides in-depth training in hazard recognition, exposure limits, general site safety concerns, and more.

Hearing Conservation and Protection
This course is for employees who are exposed to excessive noise in the workplace and covers OSHA Hearing Protection standards, focusing on General Industry (29 CFR 1910.9).

Heat Stress, Illness, and Injury Safety
This course is designed to help you achieve a general awareness of the risks associated with working in conditions in which heat stress and illness can occur. It highlights practices that workers and employers can apply to ensure proper protection from heat, including pre-work preparations, personal protective equipment (PPE), and training. In addition, it provides first-response measures to take in the event that a worker experiences heat stress or illness.

ON-DEMAND MODULES

Hot Work Construction
This course covers various types of hot work; responsibilities for employers and employees for setting up and following hot work procedures; hazards associated with the various types of hot work; federal regulations and requirements regarding hot work; steps necessary for assessing risk when performing hot work; and best practices for safely performing hot work.

Ionizing Radiation Safety
This course presents an overview of the OSHA Ionizing Radiation Standard, which is aimed at mitigating the dire effects of excessive exposure to ionizing radiation in occupational settings. The course covers a variety of topics related to ionizing radiation, including the sources of ionizing radiation in occupational settings and the health risks of ionizing.

Ladder and Stairway Safety
This online course presents an overview of ladder and stairway safety. It covers basic concepts, industry safety regulations and standards, responsibilities in the workplace, the hazards of working on and around ladders and stairways, different types of ladders and their intended uses, and hazard control measures to follow when you use a ladder or stairway to accomplish job tasks in your workplace.

Laser Safety
This online training course covers basic concepts, an explanation of the different types of lasers and their hazards, links to industry safety standards, and hazard control measures to follow when duties require you to operate a laser or to be present when a laser is in use in your workplace. It also presents case studies to emphasize the need for laser safety training in the workplace.

Lockout Tagout
This General Industry online training course covers the OSHA Control of Hazardous Energy (Lockout/Tagout) standard. This course is targeted at employees of organizations that work around energized machines or equipment. No prerequisite knowledge is required.

Machine Guarding Safety
This online machine guarding course describes the standard, examples of machines and their potential hazards, and various controls that can be used to protect the health and safety of workers from moving machinery hazards.

Mold Abatement, Remediation, and Removal
This course is designed to assist employers and employees in understanding the steps to working safely where exposure to mold is likely, in both the construction and general industry. This course discusses the agencies and the regulations that exist, and it will help you understand and identify mold, what causes mold, and the best methods of remediation.

Office Ergonomics
This online training course in office ergonomics covers numerous topics addressed in Occupational Safety and Health Administration (OSHA) regulations. Participants learn about the recommended OSHA desk height, OSHA office chair regulations, and many other office safety training topics.

Personal Protective Equipment for General Industry
This online personal protective equipment course describes the relevant standards, different types of PPE, and the hazards they protect against.

Respiratory Protection
This online respiratory protection training course describes the standard, hazard identification, avoidance, and control, covering a variety of respiratory protection-related topics, along with practical information on safe work practices. This course is targeted to employees of organizations that must wear respiratory protection because of potential exposure to workplace hazards.

Scissor Lift Safety
This course presents an overview of safe operating procedures for scissor lifts, including the responsibilities of owners, supervisors, and workers, hazards from uneven surfaces, falling, overloading, electrocution, overextension, nearby work, inclement weather, inexperience or improper operation, mechanical defects, and inadvertent operation.

Trenching and Excavation Safety
This course is designed to assist both employers and employees to achieve compliance with OSHA standards regarding trenching and excavation safety. They will learn to identify hazards encountered when working in or near trenching and excavation sites and correction of these hazards, soil testing methods, trench protection systems, and general safety requirements.

Walking Working Surfaces and Personal Fall Protection Systems
This course covers OSHA 29 CFR 1910 Walking Working Surfaces and Personal Fall Protection Systems, which addresses the hazards posed by slips, trips, and falls around the workplace. It also describes the standard, potential slip, trip, and fall hazards in a work environment; a hazard controls that can be used to protect the health and safety of workers.

Workplace First Aid Overview
This online certification course provides OSHA and MSHA first aid training to help employees stay safe.

ON-DEMAND MODULES

INFRARED THERMOGRAPHY AND ULTRASOUND

CAT 1 Infrared

This course is designed to meet and exceed ISO 18436 Part 7 CAT 1 and ANSI/ASNT CP105 & CP-189 (2016) Level 1 recommended practices. It covers all of the relevant infrared theory and physics required to produce a professional thermography inspection report. This course prepares the student for qualification as a CAT 1 certified thermographer. The participant will learn about topics in infrared thermography to increase their knowledge about infrared physics, heat science and infrared measurement equipment and its application. As a CAT 1 thermographer, the participant will learn to set up the cameras settings for distance, transmissivity, and emissivity, learn how to ensure the IFOV and MFOV are set correctly, and learn about capturing good images and initial analysis on the images.

CAT 2 Infrared

This course is designed to meet and exceed ISO 18436 Part 7 CAT 2 and ANSI/ASNT CP105 & CP-189 (2016) Level 2 recommended practices. It covers all of the relevant infrared theory and physics required to produce a professional thermography inspection report. This course prepares the student for qualification as a CAT 2 certified thermographer. The participant will learn about topics in infrared thermography to increase their knowledge about infrared physics, heat science and infrared measurement equipment and its application. As a CAT 2 thermographer, the participant is able to provide guidance to CAT 1 personnel in the areas of equipment selection, techniques, limitations, data analysis, corrective action and reporting.

CAT 1 Ultrasound

This course is designed to advance the theory of ultrasound into the next generation. It surmounts and surpasses the ISO 18436-part 8 CAT 1 ASU outline. This course teaches students about the principles of ultrasound, their ultrasound devices and the use of sound analysis software to determine previously unknown fault conditions that other courses couldn't identify. The student will be immersed in a learner- and instructor-centered, content-focused lecture methodology that is proven to deliver through the use of self-paced video modules. Students will learn about the science of ultrasound, the various applications for CBM based reliability, increased mean time between failure, and the decreased total cost of asset when the principles learned in the class are applied at the student's site.

CAT 2 Ultrasound

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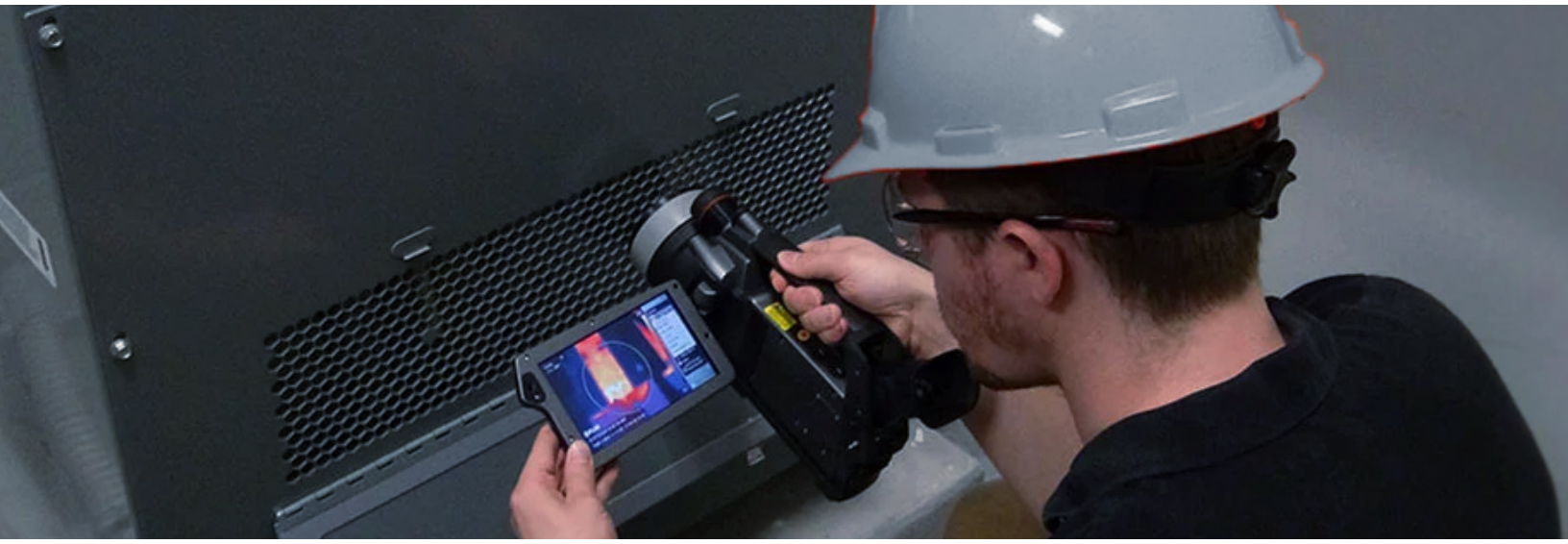

ON-DEMAND MODULES

INFRARED THERMOGRAPHY RECERTIFICATION

CAT 1 Infrared – Recertification

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CAT 2 Infrared – Recertification

This course is designed to meet and exceed ISO 18436 Part 7 CAT 2 and ANSI/ASNT CP105 & CP-189 (2016) Level 2 recommended practices, it covers all of the relevant infrared theory and physics required to produce a professional Thermography inspection report. This course prepares the student for qualification as a CAT 2 certified thermographer. The participant will learn about topics in infrared thermography to increase their knowledge about infrared physics, heat science and infrared measurement equipment and its application. As a CAT 2 thermographer, the participant is able to provide guidance to CAT 1 personnel in the areas of equipment selection, techniques, limitations, data analysis, corrective action and reporting.

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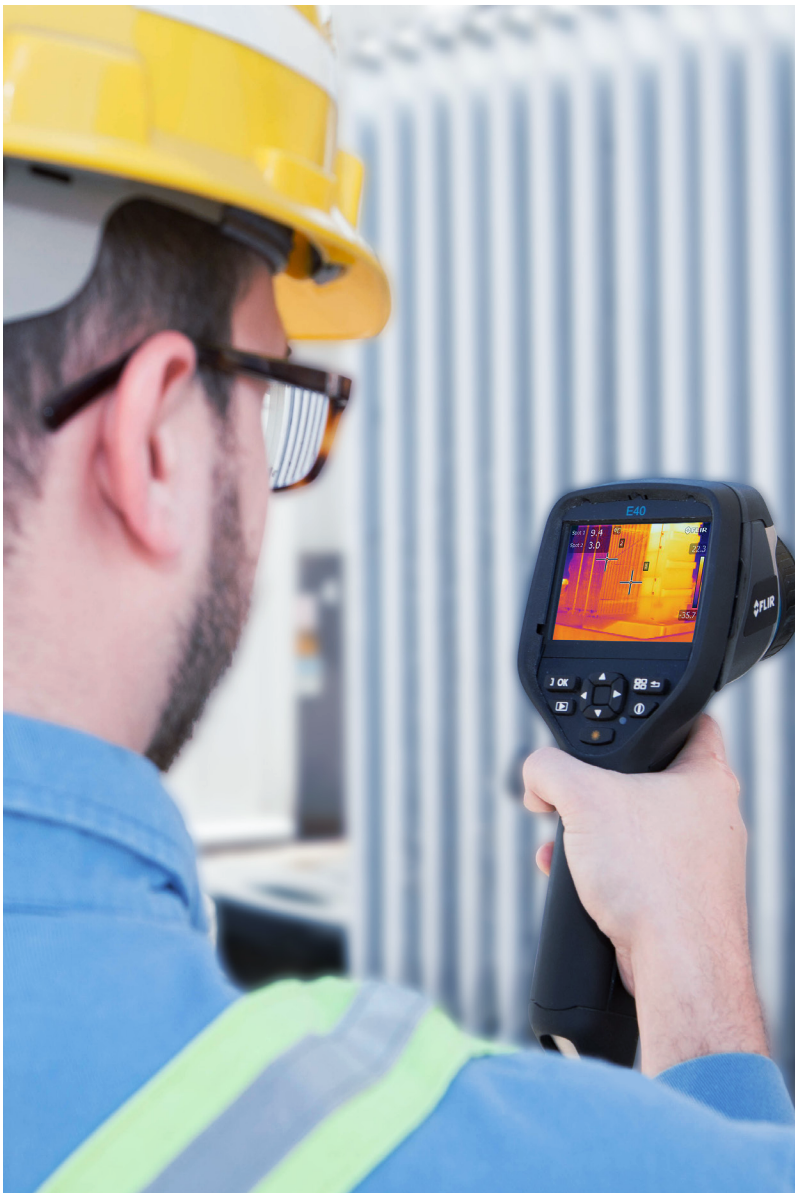

ENHANCED LEARNING SERIES

Transformer Life Extension:

Transformer life extension is of paramount importance due to its far-reaching implications on energy infrastructure, economic efficiency, and environmental sustainability. Transformers play a pivotal role in the electricity distribution system, facilitating voltage regulation and enabling efficient power transmission over long distances. Extending the operational lifespan of transformers directly contributes to grid stability, reducing the need for frequent replacements that can be costly and resource intensive. This results in significant financial savings for utility companies, subsequently leading to reduced energy costs for consumers.

This course will go over all the techniques that will help you bring back your units to being Reliable.

Transformer Condition Monitoring:

Transformer condition monitoring holds immense value as it empowers utilities and industries to proactively manage their transformer assets, ensuring uninterrupted electricity supply, mitigating downtime, and preventing catastrophic failures. By continuously tracking key performance indicators such as temperature, oil quality, and insulation integrity, condition monitoring provides real-time insights into the health of transformers. This allows for the early detection of potential issues, enabling timely maintenance and repair interventions before minor problems escalate into major disruptions. Through predictive analysis, condition monitoring optimizes maintenance schedules, reducing unplanned outages and associated costs. Furthermore, this approach enhances worker safety by minimizing the need for manual inspections of high-voltage equipment. Overall, transformer condition monitoring maximizes operational efficiency, extends equipment lifespan, and supports a reliable energy infrastructure, bolstering economic productivity and bolstering customer satisfaction.

In this course we will cover all of the techniques that will help you detect issues in transformers before they become problems.

Wet or Not Wet: That's the Question and we Have the Answer:

Moisture inside transformers is detrimental due to its potential to degrade the insulation system and compromise the transformer's performance. Moisture can accelerate the breakdown of the insulation materials, leading to reduced dielectric strength and increased risk of electrical failures. It promotes the growth of harmful byproducts through processes like hydrolysis and oxidation, further weakening the insulation. Additionally, moisture can create localized hotspots and contribute to the formation of arcing and corona, which generate heat and can eventually cause internal faults. The presence of moisture not only decreases the transformer's operational efficiency but also increases the likelihood of costly repairs, shorter lifespan, and potential outages. Therefore, effective moisture control is crucial to maintaining the reliability and longevity of transformers.

This course will help clarify the confusion around moisture in transformers, what measurements we are looking at, and how to get rid of it, if that is the case.

If Not Mineral Oil, What Then?

Alternate fluids in transformers, such as natural ester-based or synthetic insulating liquids, offer several benefits over traditional mineral oil. These fluids have higher fire resistance and reduce environmental impact, enhancing safety and reducing the risk of fires in densely populated areas. They also possess superior dielectric properties, allowing for higher operating temperatures and greater overload capabilities. Alternate fluids are more biodegradable and have lower toxicity, minimizing ecological harm in case of leaks or spills. Furthermore, their extended lifespan and better thermal stability contribute to longer transformer life and reduced maintenance requirements. Overall, the adoption of alternate fluids aligns with sustainable practices, improving transformer performance, safety, and environmental responsibility.

In this course, we will cover all major insulating liquids, other than mineral oil, with their benefits, parameters, and interpretation according to SDMyers.

ENHANCED LEARNING SERIES

LTC Maintenance:

LTC (Load Tap Changer) maintenance is of significant importance in power transformers due to its role in ensuring the efficient and reliable operation of the transformer. Load Tap Changers are devices used in power transformers to regulate the voltage ratio and maintain a consistent output voltage under varying load conditions. LTC maintenance is vital for ensuring the proper functioning, reliability, and longevity of power transformers. It contributes to stable voltage regulation, protects connected equipment, enhances energy efficiency, and maintains the overall health of the power grid. Regular maintenance practices help identify and address potential problems early on, preventing costly downtime and ensuring the safety of both personnel and equipment.

In this course, we will cover the best practices and techniques to minimize the risk of an LTC failure that can also compromise the integrity of your electrical system.

Substation Components and Maintenance:

Substation components are essential elements of the electrical grid, facilitating the transmission and distribution of power. These components, including transformers, circuit breakers, relays, switches, and protective devices, enable efficient energy transfer, voltage regulation, and equipment protection. Regular maintenance of substation components is crucial to ensure their reliable and safe operation. Proper maintenance enhances equipment lifespan, prevents failures, and minimizes downtime, thereby safeguarding the stability and continuity of power supply, reducing operational costs, and maintaining overall grid reliability.

We will go over all of the major components and the maintenance that will help you maintain the reliability of your power system.

Asset Management:

Asset management holds paramount importance within the power industry for several reasons. It involves the strategic planning, operation, maintenance, and optimization of physical assets like power plants, substations, transformers, transmission lines, and more. Asset management in the power industry is integral to maintaining efficient, reliable, and safe operations. It directly impacts the quality of power supply, operational costs, environmental sustainability, and the industry's ability to adapt to changing energy dynamics.

The goal of this course is to provide you with a systematic approach of planning, operating, maintaining, and optimizing physical assets throughout their entire lifecycle to achieve organizational goals and objectives.

Visual Inspection & Sampling of Transformers:

The Visual Inspection & Sampling of Transformers Learning Plan consists of six modules that cover the proper and safe procedures needed to obtain a representative sample of dielectric fluids. Topics include: Safety in a Substation & PPE; Special Care Transformers; Transformer Parts & Visual Inspections; Gauges, Nameplates, & Field Copy Reports; Sampling Containers & Proper Sampling Techniques; and Applying a Nitrogen Blanket.

Obtaining a good representative sample is an imperative first step to the health and reliability of your transformer. This Learning Plan provides the knowledge needed to pull a proper sample to assure accurate test results.

Capacitación En Español

Gestion de Transformadores 1 Modulos en Español
Este Plan de Enseñanaza es compuesto de los 9 modulos necesarios para completar "Gestion de Transformadores 1" en Español. Gestion de Transformadores 1 esta diseñado para fomentar los conocimientos fundamentales para aquellos que son responsables del mantenimiento de transformadores. Los estudiantes obtendran los conceptos basicos de transformadores, de las pruebas al liquido aislante y las pruebas electricas, de los principios de mantenimiento y de la importancia de un sistema electrico confiable.

Mantenimiento Centrado en la Confiabilidad
Este curso está diseñado para crear conciencia sobre la gestión de transformadores desde una perspectiva de confiabilidad.

Componentes de Transformadores y sus Funciones
Este curso identificará los componentes y subcomponentes del transformador. Describirá las funciones de los componentes y los elementos de diseño que afectan el mantenimiento, incluyendo la configuración del núcleo, el tipo de devanado, el material conductor, el tipo de aislamiento sólido, la refrigeración y la conservación del aceite. Este curso es un curso de 1.5 horas que genera.

Vida del Aislamiento Solido y su Envejecimiento
Esta clase cubrirá la importancia del aislamiento sólido en transformadores. Los asistentes analizarán en profundidad la resistencia mecánica del documento y comprenderán que mantener la resistencia mecánica del aislamiento sólido es fundamental para extender la vida útil del transformador.

Liquidos Aislantes
Este curso cubrirá las cuatro funciones de líquidos aislantes en transformadores. Identificará el mecanismo de envejecimiento del aceite mineral, comprenderá el uso del inhibidor y cubrirá la aplicación de fluidos alternativos.

Pruebas al Aceite y su Interpretacion
Este curso cubrirá las prácticas de muestreo e inspección para transformadores llenos de fluidos. Cubrirá las pruebas de rutina y no rutinarias que se pueden realizar e identificará los estándares de la industria para estas pruebas.

Humedad en Transformadores
Este curso abordará los problemas creados por la humedad en los transformadores. Cubrirá el porcentaje de saturación, el porcentaje de humedad por peso seco y por qué los responsables del mantenimiento del transformador deben comprender la importancia de administrar la humedad en su flota de transformadores.

Análisis de Gases Disueltos Furanos
Este curso cubrirá el alcance de DGA y la formación y fuentes de gases disueltos en transformadores sumergidos en aceite mineral. Revisará las herramientas de interpretación y la orientación de los estándares IEEE. Cubrirá cómo identificar el contenido de furanos y cómo entender las pruebas de furanos.

Pruebas Eléctricas
Este curso cubrirá las diversas pruebas eléctricas de campo realizadas. Cubrirá una descripción de la prueba, el propósito de cada prueba y cómo interpretar los resultados. Esta clase incluye varios estudios de casos de ejemplos del mundo real.

Mantenimiento Aplicado del Transformador
Este curso cubrirá la importancia de extender la vida útil confiable del transformador mediante mantenimiento mecánico, mantenimiento eléctrico y mantenimiento de fluidos. Cubrirá los procesos correctivos utilizados para extender la vida útil del sistema de aislamiento del transformador. Comparará/contrastará estos procesos de aceite y sus rendimientos.

CURSOS EN ESPAÑOL

CAT 1 Infrarrojo

Este curso está diseñado para cumplir y superar las prácticas recomendadas ISO 18436 Parte 7 CAT 1 y ANSI / ASNT CP105 y CP-189 (2016) Nivel 1, cubre toda la teoría y física infrarroja relevantes requeridas para producir un informe profesional de inspección termográfica. Este curso prepara al estudiante para la calificación como un termógrafo certificado CAT 1. El participante aprenderá sobre temas de termografía infrarroja para aumentar su conocimiento sobre física infrarroja, ciencia del calor y equipos de medición infrarroja y su aplicación.Como termógrafo CAT 1, aprenderá a configurar las cámaras de Distancia, Transmisividad, Emisividad, cómo asegurarse de que IFOV y MFOV estén configurados correctamente, capturando buenas imágenes y análisis inicial de las imágenes.

CAT 1 Infrarrojo – Recertificación

Este curso está diseñado para cumplir y superar las prácticas recomendadas ISO 18436 Parte 7 CAT 1 y ANSI / ASNT CP105 y CP-189 (2016) Nivel 1, cubre toda la teoría y física infrarroja relevantes requeridas para producir un informe profesional de inspección termográfica. Este curso prepara al estudiante para la calificación como un termógrafo certificado CAT 1. El participante aprenderá sobre temas de termografía infrarroja para aumentar su conocimiento sobre física infrarroja, ciencia del calor y equipos de medición infrarroja y su aplicación.Como termógrafo CAT 1, aprenderá a configurar las cámaras de Distancia, Transmisividad, Emisividad, cómo asegurarse de que IFOV y MFOV estén configurados correctamente, capturando buenas imágenes y análisis inicial de las imágenes.

CURSOS EN ESPAÑOL

CAT 1 Ultrasonido

Proyectado para avanzar con la teoría del ultrasonido en su última generación. Excede las prácticas recomendadas ISO 18436-Parte 8 CAT 1 ASU. Este curso enseña a los estudiantes sobre los principios del ultrasonido, sus dispositivos de ultrasonido y el uso del software de análisis de sonido para determinar condiciones de falla previamente desconocidas que otros cursos no pudieron identificar. El estudiante estará inmerso en Aprender con un Instructor Centrado una Metodología de Lectura Centrada que contiene foco, metodología de lectura que se ofrece mediante el uso de módulos de video a su propio ritmo. Los estudiantes aprenderán sobre la ciencia del ultrasonido, las diversas aplicaciones para la confiabilidad basada en CBM, aumentarán el tiempo medio entre fallas y disminuirán el costo total del activo cuando los principios aprendidos en la clase se apliquen en sus plantas de trabajo.

CAT 1 Ultrasonido – Recertificación

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We invite you to speak with an
Electric Power Training Advisor.

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