100 SERIES

100 SERIES: UNIFORM AIR QUALITY TRAINING PROGRAM (UAQTP)

The UAQTP is a weeklong series of 15 courses providing a comprehensive introduction to air pollution, air pollution control, and the basics of compliance inspections. The program is intended for entry-level compliance inspectors, regulatory agency staff, and environmental specialists in business and government. Students will learn about the historical, technical, regulatory, and enforcement aspects of air pollution, especially as these relate to the area of stationary source inspections. Please see the individual course descriptions listed below for specific details.

COURSE #101 HISTORY OF AIR POLLUTION CONTROL
History of Air Pollution reviews the key events and historical incidents that identified air pollution as a significant health, safety and welfare problem. This course addresses the pioneering legislation affecting stationary, mobile, and toxic sources of air pollution and the statutes, which established the first public agencies to identify and regulate these sources.

COURSE #102 METEOROLOGY AND CLIMATOLOGY
Meteorology and Climatology examines the atmospheric factors that influence the accumulation and dispersion of air pollution both globally and locally. Atmospheric thermodynamics, topography, and airflow are discussed as they apply to the formation and transportation of air pollutants.

COURSE #103 CLASSIFICATION OF AIR POLLUTANTS
The major classes of air contaminants are discussed in this course. The concept of criteria and non-criteria pollutants is introduced followed by a discussion of ambient air quality standards. Emissions inventories and reduction strategies are also covered.

COURSE #104 INSPECTOR SAFETY
Inspector Safety outlines some of the potential hazards encountered during common source inspections. The selection and use of safety equipment and its application to various workplace environments is discussed. Walking, climbing, burn, electrical, and explosion dangers are addressed as they apply to source inspections.

COURSE #105 CONCEPTS OF REGULATORY DEVELOPMENT
This course presents the principles, rules and guidelines that govern the process of regulatory development. Details of the process at the federal, state, and local levels of government are explored, with emphasis on those that affect district rulemaking. Programs and terminology such as AQMPs, SIP, CTGs, RACT, BACT, NSPS, NSR and NESHAPS will be explained.
**COURSE #106 INSPECTION AND REPORT WRITING TECHNIQUES**
This course will give an overview of the physical and administrative techniques to effectively inspect various sources that fall under the jurisdiction of air pollution agencies. This is presented in two phases: the first discusses general procedures for conducting effective source inspections; the second deals with formatting and writing clear, concise, and complete inspection reports.

**COURSE #107 BASIC AIR POLLUTION CONTROL EQUIPMENT**
The methods for controlling particulate and gaseous air emissions are covered in this course. The operating principles of typical emission control devices are detailed. Key inspection considerations for various control devices are also discussed.

**COURSE #108 INTRODUCTION TO VISIBLE EMISSION EVALUATIONS**
This course is an introduction to the subject of visible emission evaluation. The goal of this class is to provide a working knowledge of the principles involved in performing visible emission evaluations, as well as to introduce the methods and equipment currently in use.

**COURSE #109 COMPLAINT RESPONSE PROCEDURES**
This course introduces the principles of processing air pollution nuisance complaints with special emphasis on the field investigation process. Legal aspects of public nuisance laws associated with air pollution, causes of complaints, investigations, and resolution of complaints are some of the subjects discussed.

**COURSE #110 SAMPLE GATHERING AND INTEGRITY**
This course presents an overview of the methods used to ensure sample integrity with special emphasis on the chain of custody procedure. Specifically, discussed will be sample gathering procedures, protocols for specific samples, and safety.

**COURSE #111 BASIC CHEMISTRY OF AIR POLLUTION**
This introductory course discusses the basic concepts of air pollution chemistry. Simple chemical reactions and the nomenclature for important hydrocarbon compounds are introduced. Ozone formation in the atmosphere, air toxics, acid deposition, and indoor air pollution are discussed.

**COURSE #112 EVOLUTION OF ENVIRONMENTAL LAW**
This course gives a brief overview of how air pollution laws, rules, and regulations developed over time. Basic legal principles and courtroom proceedings and tactics are discussed. Precedent setting cases are reviewed as the foundation of modern day air pollution law.

**COURSE #113 INSPECTOR CONDUCT AND LIABILITY**
Inspector Conduct and Liability is designed to familiarize field inspectors with commonly accepted practices and procedures regarding their professional conduct. This course addresses legal entry, right to inspect, confidential material, and the potential consequences and legal ramifications of illegal conduct or tactics.
COURSE #114 AIR QUALITY MONITORING CONCEPTS
This course covers the basic concepts involved in ambient and source monitoring. Reasons for monitoring, instruments and their use, and the acquisition and use of air quality data are discussed.

COURSE #115 INTERFACING WITH RELATED AGENCIES
This course will examine the kinds of interactions air pollution control professionals might have with different local, state, and federal government agencies. Interactions related to permitting, issuance of NOVs, follow-up of violations, environmental crimes and emergencies, rulemaking, and other areas will be covered.

100 Series Course Sample Agenda

**Day One**
- Course #: 101 -- History of Air Pollution Control
- Course #: 112 -- Evolution of Environmental Law
- Course #: 103 -- Classification of Air Pollutants
- Course #: 106 -- Inspection and Report Writing Techniques/Role of the Witness

**Day Two**
- Course #: 110 -- Sample Gathering and Integrity
- Course #: 111 -- Basic Chemistry of Air Pollution
- Course #: 102 -- Climatology and Meteorology
- Course #: 113 -- Inspector Conduct and Liability

**Day Three**
- Course #: 107 -- Basic Air Pollution Control Equipment
- Course #: 114 -- Air Quality Monitoring
- Course #: 105 -- Concepts of Regulatory Development
- Course #: 108 -- Introduction to Visible Emission Evaluations

**Day Four**
- Course #: 109 -- Complaint Response Procedures
- Course #: 104 -- Inspector Safety
- Course #: 115 -- Interfacing with Related Agencies

200 SERIES

200 LEVEL
The 200 Level courses offer advanced training in a wide variety of source specific industrial processes and air pollution control equipment involving actual on-site "mock"
inspections. Each 200 Level course covers general process descriptions for the specific industrial category, emissions of concern, applicable air pollution regulations and compliance inspection techniques. These one and two day courses are comprised of interactive classroom instruction followed by "hands-on" field inspection training. A "Certificate of Completion" is issued for those who participate in the field inspection training and pass an exam.
200 Level Course Number and Name

COURSE #221 CONTINUOUS EMISSION MONITORING
This one-day course reviews 40 CFR Part 60 and Part 75, legal authorities, reporting requirements, quality assurance programs and audit procedures for continuous emission monitoring (CEM) installations. This course also discusses several different types of extractive and in situ CEM systems commercially available with emphasis on Performance Specification Test procedures and system certification.

COURSE #222 PRINCIPLES OF AMBIENT AIR MONITORING
This one-day course covers the basic design and theory of ambient air monitoring. Quality assurance and quality control methods as they relate to monitoring instruments will also be discussed. This course also covers site development criteria and data processing, and will address ozone, oxides of nitrogen, carbon monoxide, hydrocarbon, particulate and sulfur dioxide monitors, meteorology systems, data recording systems, gas calibration systems, and zero air systems.

COURSE #224 OBSERVING SOURCE TESTS
Observation of compliance performance emission tests are an important part of any air pollution enforcement program. Data obtained during these tests are used to determine compliance with regulatory standards or to determine baseline operating conditions for a source. Presented in this course will be the basic principles of source test observation (STO), basic theory of source testing, the criteria required to perform representative STOs and the inspector's role in STOs.

COURSE #230 SURFACE COATING: METAL PARTS AND PRODUCTS
This one-day course addresses the complex matter of paints and coatings used in the manufacture or refurbishment of metal parts and products. Combining lecture, discussion, and informational video, students are introduced to topics such as coating formulation, volatile content limits, transfer efficiency, application equipment, inspector sampling, and laboratory analysis for liquid and powder coatings.

COURSE #230.1 SURFACE COATING: AEROSPACE INDUSTRY
Coating processes are addressed as they apply to the manufacturing and refurbishment of aircraft and aerospace parts. This one-day course is a combination of lecture and discussion providing an overview that includes inspection strategy, procedure, and safety concerns. Discussion topics include: how aerospace coatings differ from other metal parts and products coatings, volatile organic content limits, alternative emission control plans, inspection techniques and non-punitive techniques for improving compliance rates.

COURSE #230.2 SURFACE COATING: AUTO REFINISHING
This one-day course focuses on the operations of the auto refinishing industry. This course consists of four hours of lecture and four hours of field training. The emphasis is on a strategy for achieving reductions from a large number of small sources operating in a variety of environmental conditions. Inspection procedures, strategy, safety concerns,
coating formulations, application equipment and pollution control equipment will be discussed.

COURSE #230.3 METAL CONTAINER, CLOSURE & COIL COATING
This one-day course will review the steps to manufacture two-piece aluminum and three-piece steel cans, as well as the chemical and physical demands on coatings for the metal packaging industry. The extensive testing required for the Food and Drug Administration, as well as taste and product coating compatibility will have serious ramifications on one's choice of coatings. Each of these parameters will be discussed relative to enforcing effective volatile organic compound reduction strategies and the development of new coating strategies.

COURSE #230.4 GRAPHIC ARTS
This course addresses the use of inks, coatings, adhesives, surface preparation and cleanup materials used in the graphic arts industry. Classroom discussion will focus on printing methods, process descriptions, facility inspection procedures, product sampling methods, and inspector safety issues. Volatile Organic Compound (VOC) content, graphic arts rule limits, and basic VOC emission calculations are outlined and discussed as well.

COURSE #233 SOLVENT CLEANING: DEGREASING OPERATIONS
This one-day course provides baseline information on a variety of solvent cleaning and degreasing operations and equipment. Topics include: the various solvents used in these operations, the types of degreasers used, and the emissions of concern from solvent cleaners. Also covered are strategies and recommended safety procedures for degreaser inspections.

COURSE #242 HOT MIX ASPHALT FACILITIES
Hot Mix Asphalt (HMA) facilities produce asphaltic concrete. Asphaltic concrete is a mixture of well graded, high quality aggregate and asphalt cement heated and mixed in measured quantities. As air pollution professionals, we permit and inspect these types of facilities. What regulations are applicable to HMA-type facilities (i.e. NSPS, Title 5)? What do we look for and where? What types of conditions apply to HMA facilities? As an inspector, what safety issues will I be facing? These as well as other issues will be covered in this one-day course.

COURSE #243 AGGREGATE PLANTS
Aggregate plants produce sand and gravel and crushed stone. Both types of plants can be considered major air pollution sources. As air pollution professionals, we need to become familiar with these sources so that we can develop clear and understandable permits, which in turn allow a facility to stay in compliance with air pollution regulations. Upon completion of this one-day course, the participant will better understand the process flow of sand and gravel and crushed stone operations, know the six-points of an inspection, and know the legal requirements associated with aggregate plants (i.e. NSPS).
COURSE #244 CONCRETE BATCH PLANTS
Concrete is a mixture of water, cement, sand, gravel, and other substances designed to harden and form durable surfaces and structures. A batch plant is a facility which collects and stores concrete ingredients, selects and combines proportions, and dispenses the mixture into a mixer-truck. This course covers process, pollution control measures, inspection procedures, & legal requirements applicable to concrete batch plants (NSPS, Title 5).

COURSE #245 CEMENT PLANTS
Webster defines cement as "a powdered substance made of burned lime and clay mixed with water and sand to make mortar, or with water, sand and gravel to make concrete." The making of cement entails mining, crushing/screening, recovery, kiln, coke handling, clinker cooling, finishing, grinding/milling, receiving/conveying; all steps which can be and are emitted into the atmosphere.

COURSE #260 OIL FIELD PRODUCTION
The goal of this one-day course is to provide information on production methods, related emissions, applicable regulations and inspection techniques associated with oil field production. This information is provided in order to assist air pollution inspectors in conducting more accurate and comprehensive inspections, as well as providing industry with the understanding of how to stay in compliance with air pollution regulations.

COURSE #261 POLYESTER RESIN FIBERGLASS OPERATIONS
This one-day course provides information to air pollution inspectors on the history, use of raw materials, production methods, emission control methods and inspection procedures for polyester resin and fiberglass facilities. This course covers pollution prevention, legal requirements, and RACT/BARCT. Upon completion of this course, inspectors will be able to understand what is required of the facility to remain in compliance with the requirements. A field visit to a local facility is included to provide hands-on inspection techniques.

COURSE #262 FUGITIVE VOLATILE ORGANIC COMPOUND (VOC) EMISSION INSPECTIONS
This course provides extensive information for conducting effective fugitive VOC emission inspections at petroleum and chemical process facilities. The course covers the types of equipment that may exhibit fugitive leaks, reviews leak detection and repair (LDAR) regulations and standards, and discusses compliance monitoring, recordkeeping, and recording requirements. Portable leak detection instruments and their use are dealt with in considerable detail.

COURSE #263 GASOLINE FACILITIES PHASE I & II
This one-day course reviews Phase I and Phase II vapor recovery requirements for
gasoline dispensing facilities (GDF). This course will provide information focusing on the inspection of GDFs to assist inspectors and owner/operators who wish to understand what is required to remain in compliance with the vapor recovery requirements.

**COURSE #270 INCINERATORS**
This one-day course will look at incinerator processes of small to medium sized solid waste incinerators. Types of incinerators covered will include: biomedical, hospital, and pathological incinerators, crematories, and industrial/commercial heat stripping ovens. This course will not address municipal waste combustors, biomass or hazardous waste incinerators.

**COURSE #271 STATIONARY INTERNAL COMBUSTION ENGINES**
Stationary internal combustion engines have a wide range of applications and are increasingly subject to regulation as emissions sources. This course reviews the basic operational theory of reciprocating engines and gas turbines. Emission control methods, technologies, general and specific regulations, permit conditions, and inspection procedures are covered.

**COURSE #272 STATIONARY GAS TURBINES**
Stationary gas turbines have become more popular in recent years at both peaking power plants and cogeneration facilities. This new course explores the operational theory of several modern gas turbine models with emphasis on new combuster technologies and control methods used to reduce emissions. In addition, 40 CFR Part 60 Subpart GG requirements are discussed along with source permit conditions and agency inspection procedures.

**COURSE #273 INDUSTRIAL BOILERS**
Boilers are one of the most common emission sources and range in use from small fire tube boilers to large utility boilers associated with power plant facilities. The course discusses uses of boilers, heat transfer methods and fundamentals of operation of modern industrial & utility boilers including those fired by natural gas, biomass, municipal waste and coal (circulating fluidized bed units). The course also discusses steam turbines & power generation. This is followed by a detailed discussion on emissions and control techniques such as Low-NOx burners, FGR, staged combustion, SCR & SNCR. New technologies such as Ultra Low-NOx 9 ppm burners, applicable federal & local BACT regulations, permitting requirements, and agency inspection procedures and safety concerns are thoroughly discussed.

**COURSE #281 ELECTROSTATIC PRECIPITATORS**
When the pollutant is fine particulate or aerosols and the control device is an electrostatic precipitator, what can the inspector do to confirm that it is operating properly? This course will help the inspector understand the fundamentals of electrostatic precipitator operation and the likely defects or operator oversights. Topics include: theory and design, cleaning cycles, operation and maintenance, and inspection techniques.
COURSE #282 BAGHOUSES
Baghouses are one of the most effective and widely used control devices for fine particulate matter. This course will present the major uses for baghouses, operational theory and design, applicable regulations, permit conditions, and inspection procedures. The course also includes a brief discussion of baghouse troubleshooting and maintenance.

COURSE #283 SOIL DECONTAMINATION
This one-day course focuses on the inspection of soil decontamination processes for compliance with air pollution regulations. This course will cover the inspection points and regulation requirements for soil vapor extraction, bioremediation, thermal treatment, and ground water remediation processes and controls. A field trip to a local facility is included to provide hands-on inspection techniques.

COURSE #284 VOLATILE ORGANIC COMPOUND (VOC) CONTROLS
This course focuses on equipment used to control the emissions of Volatile Organic Compounds (VOC). The specific VOC controls analyzed in this one-day class include: adsorbers, absorbers, condensors and oxidizers. Classroom discussion will include the role of VOC emissions in ozone formation and focus on process description, rule discussion and inspection procedures for VOC control equipment.

COURSE #285 LANDFILL GAS CONTROL FACILITIES
This one day course provides inspectors with an introduction to the operation of landfill gas facilities including monitoring, collection and control systems, as well as applicable inspection techniques. During the mock inspection portion of the class, students will gain hands-on inspection experience.

COURSE #287 DRY CLEANING
Self-inspection, leak checking and compliance assistance for facilities using perchloroethylene are emphasized in this one-day review of organic solvent fabric cleaning. Classroom discussion will focus on the dry cleaning process and the inspector's role in ensuring compliance with local, state and federal regulations.

COURSE #288 PETROLEUM REFINING
This two-day course focuses on the inspection of petroleum refining processes and facilities. Introductory information will be provided on the various processes found within a petroleum refining complex. This course is intended to provide an inspector with a framework of information to build upon for conducting more accurate and comprehensive inspections at specific petroleum refining facilities.

COURSE #290 MACT: GENERAL BACKGROUND
This one day course is designed to provide general background information on (1) various ARB and EPA toxic regulations/programs: MACTs and ATCMs, ARB Hot Spots vs. EPA Significant Risk Programs, EPA & California Accidental Release Prevention Programs; (2) listing of toxic air
contaminants and hazardous air pollutants, and of EPA's toxic source categories; (3) pathways for ARB and EPA enforcement; and (4) lowering a source's potential to emit (for MACT sources).

**COURSE #290.3 HEXAVALENT CHROME PLATING**
This one day course will present process and control information on chrome plating and anodizing facilities followed by a review of the inspection check sheet (which includes pertinent regulation requirements) developed for use in conducting inspections of such sources. There is no field visit included with this course.

### 300 SERIES

#### 300 Level Course Number and Name

**COURSE #333 PERMIT PRACTICES AND PROCEDURES I**
This two-day course is based on the EPA - APTI Course #454 entitled Effective Permit Practices and Procedures. It is designed to provide hands-on training in the methods and procedures used to draft and review air permitting documents. This course is designed for personnel of State and local permitting agencies who are new to permit programs and for inspectors who must read and interpret permit conditions. Examples of various types of permit conditions are presented along with practical exercises.

Major topics include:

- Identification of the components of permits,
- Federal, state and local permitting authority
- Description of the characteristics of effective permitting agencies,
- The permit application and review process,
- The bases for various types of permit conditions, and
- Discussion of procedures and approaches involved in writing permit documents.

**COURSE #334 PERMIT PRACTICES AND PROCEDURES II**
This 2 ½ day course provides hands-on training in the methods and procedures used to review permit applications and to prepare air quality permits. This course is designed for personnel of State and Local agencies who have some experience in permit programs. The course is designed primarily for permit writers, but inspectors who must read and interpret permit conditions and make site inspections will benefit as well.

Course material addresses state and local permits, as well as Title V federal operating permits. Other topics covered are Compliance Assurance Monitoring; Monitoring, Reporting, and record-keeping requirements, and toxic air contaminant issues associated with permitting.

This course is taught at an intermediate to advanced level, and is intended to be preceded by CARB 333 - Permit Practices and Procedures I.
Major Topics include:

- State Preconstruction Review Programs
- The Federal Title V program
- New Source Review / Prevention of Significant Deterioration
- Technology requirements (Best Available Control Technology and Lowest Achievable Emission Rate)
- Public review and input
- Toxics

COURSE #335 PRINCIPLES OF ENVIRONMENTAL COMPLIANCE AND ENFORCEMENT

This intensive three-day course provides a framework for designing effective compliance strategies and enforcement programs. The course defines the terms compliance and enforcement, introduces basic principles, and explores different approaches for implementing each element of the framework. The instructors who guide participants through the concepts and principles of environmental compliance and enforcement deliver the course through a series of exercises. Participants, through a "case study" will take part in a negotiation session to resolve a violation of environmental requirements that mimics a real-life enforcement situation.