

HIOSH DIRECTIVE

DIRECTIVE NO.: TED 01-00-018

EFFECTIVE DATE: April 1, 2011

SUBJECT: Initial Training Program for HIOSH Compliance Personnel

ABSTRACT

Purpose: This instruction provides State personnel with policy and guidelines for implementation of competency-based training programs for HIOSH compliance personnel.

Scope: HIOSH-wide

References: None applicable at this time

Cancellations: TED 1.12A, Training Program for HIOSH Compliance Personnel
April 24, 1996

Action Offices All compliance branches

Originating Agency OSHA. States must comply with same or similar.

Executive Summary

This instruction provides guidance and direction to the Hawaii Occupational Safety and Health Division (HIOSH) concerning the policies and procedures for training of Compliance Safety and Health Officers (CSHOs).

[Note: CSHOs includes both Occupational Safety and Health Compliance Officers (OSHCOs) and Environmental Health Specialists (EHSs)]

It is essential that CSHOs have the requisite knowledge, skills, capability and varied professional backgrounds to accomplish HIOSH's mission of promoting safe and healthful working conditions for Hawaii's working men and women. In this instruction, HIOSH has provided detailed guidance for training required during the initial three-year period of a CSHO's career, including recommended training that assists the CSHO with preparation for professional certification exams. This instruction identifies training paths that provide assistance to the branch managers in managing their training programs.

The goal of this instruction is to assist CSHOs and their supervisors with direction, guidance and training options that directly contribute to the CSHO's ability to represent HIOSH with a high degree of professional expertise. In addition, the CSHO training program identifies a correlation between CSHO competency and achieving respected credentials in the fields of safety, health and construction such as Certified Safety Professional (CSP), Certified Industrial Hygienist (CIH) and Certified Construction Health and Safety Technician (CCHST®).

Significant Changes

This instruction describes the revised training program for OSHA compliance personnel and supersedes TED 01-00-012, Training Program for OSHA Compliance Personnel, dated July 7, 1992. Changes include:

- Each newly-hired CSHO will be required to complete a minimum of eight courses offered by the OSHA Training Institute (OTI) or the State equivalent during the first three years of his/her career as a CSHO. The order and sequence of these courses are as prescribed in this instruction.
- Each CSHO and his/her supervisor will be required to track progress throughout the initial three-year period. An Individual Development Plan (IDP) will be updated annually. The IDP (Form DL-80) will be used as a planning and tracking document for reference by the CSHO and his/her supervisor to ensure that the CSHO receives all required training.
- A time extension policy has been added and the waiver policy has been clarified.
- Appendix A has been revised and expanded. Appendix A combines formalized training with self-instruction and on-the-job training recommendations in a comprehensive format. Supervisors and CSHOs will find this a useful tool for planning and sequencing professional development during the first year of the CSHO's career.
- Appendix B has been added to provide supervisors with recommended CSHO self instruction and follow-up on-the-job training to reinforce OTI training provided in years two and three.
- Appendix C lists OTI courses that are required or recommended in OSHA directives as a quick reference guide. This reference may be used to assist supervisors and CSHOs in developing IDPs for continuing professional development.
- Appendix D provides information to assist supervisors and CSHOs determine which OTI courses could help prepare a CSHO for the Certified Construction Health and Safety Technician (CCHST®), Certified Industrial Hygienist (CIH) or Certified Safety Professional (CSP) professional certification exam.
- Appendix E provides a list of textbooks that are recommended reading for new inspectors.

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I. Purpose

This instruction provides HIOSH personnel with policy and guidelines for implementation of competency-based training programs for HIOSH compliance personnel.

II. Scope

All CSHOs (OSHCs and EHSs)

III. Cancellations

Guidance on Occupational Safety and Health (GOSH) dated April 24, 1996, Training Program for HIOSH Compliance Personnel.

IV. Goals and Objectives of CSHO Training

The goal of this instruction is to assist CSHOs and their supervisors with direction, guidance, and training options that directly contribute to the CSHO's ability to represent HIOSH with a high degree of professional expertise.

A. Competency-Based Curriculum

1. The OSHA Training Institute offers formal training for CSHOs with a competency-based approach to curriculum, using the CSHO Functional Competency Model as the guide. A copy of the CSHO Competency Model and related information on the OTI curriculum and professional certification can be found on OSHA's Directorate of Training and Education Intranet web pages.
2. It is important to note that competence cannot be achieved through formal training alone. Proficiency requires a mix of experiences over time, personal initiative to develop to the highest level of professionalism possible, and structured on-the-job training as well as formal training.

B. Formal Training Program

OTI's formal training program provides a wide range of training opportunities and learning experiences to assist CSHOs with their professional development goals. A flexible program that incorporates technology enabled learning, self-study packages, on-the-job experiences and formal training has been developed to accommodate the varying levels of experience and competence during the initial three-year period of a CSHO's career. OTI's safety, health and construction training paths reflect basic requirements and competencies applicable to all CSHOs as well as those intending to gain additional expertise.

C. Technical Training during the First Three Years

OTI's flexible yet structured approach to curriculum meets the needs of CSHOs with highly diverse academic backgrounds and experiences. Supervisors and managers are encouraged to incorporate their office's training priorities into the CSHO's training program. For example, the needs of the State may dictate that new CSHOs receive technical training in industrial noise or machine guarding within their first year.

D. Professional Certification.

OTI's articulated progression of training requirements for the first three-year period of a CSHO's career supports the pursuit of professional certification and encourages CSHOs to strive for the recognition that such certification provides. Since OTI's courses are designed to support OSHA's mission, there may not always be a one-to-one correlation between an OTI technical course and the competencies required to achieve certification.

Correlation of OTI courses to professional certification can be found in Appendix D of this instruction.

V. **First Three Years of CSHO Training.**

Training Paths for Compliance Personnel – First Three Years ([see Figure 1](#))

illustrates a recommended training sequence for the CSHO's first three years.

A. First Two Courses. The following courses must be completed within the first year of a CSHO's career. Although these courses are required during the first year, there is no limit to the number of courses a CSHO may take during any year.

1. #1000 Initial Compliance (State equivalent).
2. Safety Officers:
 - a. #1050 Introduction to Safety Standards for Safety Officers
 - b. #2000 Construction Standards
3. Industrial Hygienists (EHSs) - 1250 Introduction to Health Standards for Industrial Hygienists

B. Next Courses. The following courses will be taken after the CSHO has completed one of the Standards courses.

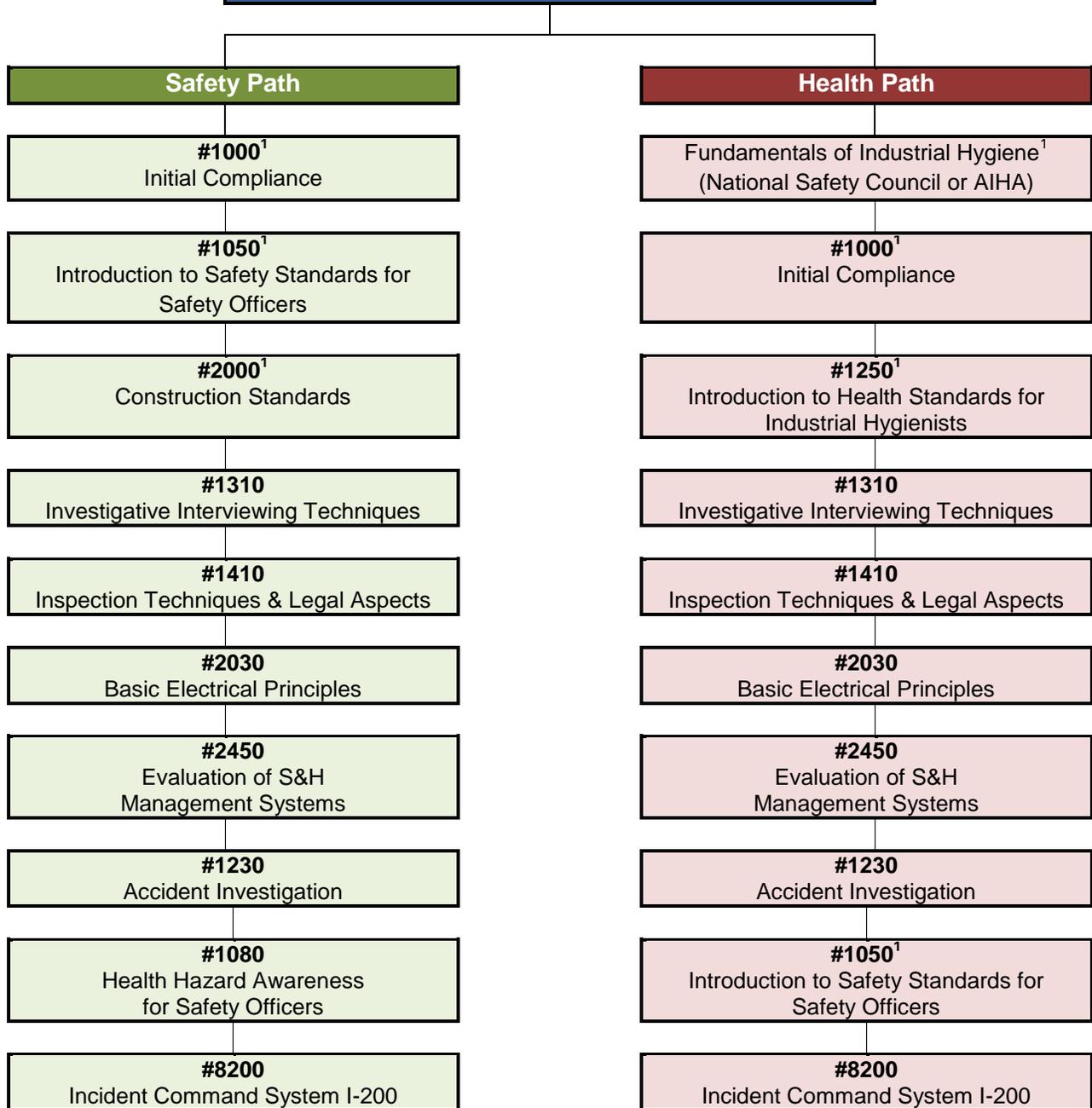
1. #1310 Investigative Interviewing Techniques.
2. #1410 Inspection Techniques and Legal Aspects (State equivalent)
3. #2030 Basic Electrical Principles
4. #2450 Evaluation of Safety and Health Management Systems.
5. #1230 Accident Investigation.

C. Multi-Disciplinary Courses. At least one of the following courses will be taken during a CSHO's initial three-year period to enhance multi-disciplinary competence.

1. Safety Officers will take the following:
 - #1080 Health Hazard Awareness for Safety Officers
2. Industrial Hygienists (EHSs) will take the following:
 - #1050 Introduction to Safety Standards for Safety Officers

D. The #8200 Incident Command System, I-200 course or equivalent training (i.e., course conducted by other governmental agencies or web-based course) must be taken during the initial three years of training; however, the specific sequence is not critical.

**00000 Training Paths for Compliance Personnel
First Three Years**



¹Courses that must be completed during the first year.

VI. Organizational Responsibilities.

A. Administrator

1. Ensure that money is budgeted and available to the Branches for new hires to complete the required training during their first three years as CSHOs.
2. Evaluate and monitor all records of training.
3. Provide assistance to Branch Managers in selecting alternate courses that are equivalent to the required courses.
4. Grant waivers and extensions of time in accordance with the procedures explained in Sections VIII and IX of this instruction.

B. Compliance Branch Managers

1. Ensure the professional development of CSHOs under his/her supervision in accordance with the detailed training options outlined in this instruction and Appendices.
2. Identify and document through an Individual Development Plan (IDP) process the training needs of CSHOs assigned to his/her supervision, and plan and coordinate all training.
3. Provide and coordinate instruction, assistance, and guidance that is consistent with the IDP process for CSHOs to meet the training program objectives outlined in this instruction.
4. Review and discuss training progress with each CSHO under his/her supervision during the mid-year and annual performance reviews.
5. Annotate the CSHO's training records to reflect the satisfactory completion and evaluation of all required training.
6. Annotate the CSHO's training record to reflect waived required training, and time extensions for required training.
7. Assign, as needed, experienced personnel to assist in the on-the-job training of newly-hired CSHOs.

C. Compliance Safety and Health Officer (CSHO)

(Includes OSHCOs and EHSs)

The CSHO has the responsibility to perform to the best of his/her ability in all training programs. Specifically, the CSHO shall:

1. Discuss his/her performance and training progress with their supervisors.
2. Participate in the planning of training activities.
3. Fully attend, participate in, and complete all assigned training courses, seminars and other events.

D. Administration and Technical Services Branch Manager and Staff

1. Prepare annual budget to include the cost of required training for new CSHOs.

2. Assist branch managers in researching alternate courses to meet the requirements of this directive as necessary.
3. Evaluate the effectiveness of the division training program and make recommendations for course improvement and/or additional training.

VII. Professional Development during the CSHO's First Three Years.

A. Required Training.

Although OSHA expects that all State compliance personnel will attend the required courses outlined in this instruction offered by the OSHA Training Institute (OTI), due to differences in State laws, and the cost of sending state personnel to the OTI, HIOSH will provide some courses as equivalent alternatives. The information provided in this section is intended to assist HIOSH in determining such equivalency.

B. OSHA Training Institute Courses

The Directorate of Training and Education Intranet page offers up-to-date information on course objectives, whether a course is blended, or has specific prerequisites.

C. Blended Courses

Blended courses include at least one online, web-based training requirement plus an instructor-led portion. Whenever a course prerequisite includes an online, blended session, that web-based training must be completed prior to attending the instructor-led session. There is no waiver process or equivalent to completing the online prerequisite of an OTI course. This strict requirement is due to the close link between the training offered online and the subsequent classroom (i.e., instructor-led) training which is designed specifically to complement one another.

D. Course Sequence

Both the Initial Compliance course and a Standards course must be completed in year one of the CSHO's training path. It is recommended that courses listed as third through eighth should be completed in a sequence optimal to attaining professional development goals and at the discretion of the Administrator

1. #1000 Initial Compliance. This course is designed for newly hired CSHOs and focuses on the basic elements of conducting inspections in accordance with current OSHA policy. Also emphasized is the importance of personal conduct and professional development. Role play is used to allow students to practice how to conduct an opening conference. The course ensures that participants have the fundamentals of information gathering to document the *prima facie* elements in a case file. During a mock inspection, participants work in teams to investigate and document

the validity of alleged complaint items. At the conclusion of this course, the student will be able to identify CSHO responsibilities related to conducting an inspection as well as promoting, assessing and enforcing workplace safety and health compliance.

2. Standards Courses. The purpose of these courses is to provide CSHOs with an introduction to the organization and content of the standards, hazard recognition, and documentation of identified hazards.
 - a. #1050 Introduction to Safety Standards for Safety Officers. This course is designed specifically for safety officers and emphasizes a wide range of safety hazards covered by 29 CFR 1910. During the course, students observe staged hazardous conditions in the OTI safety laboratories where they will evaluate, document, select and apply standards and recommend corrective actions. At the conclusion of the course, the student will be able to apply inspection techniques, basic safety hazards recognition and abatement for general industry inspections.
 - b. #1250 Introduction to Health Standards for Industrial Hygienists. This course is designed specifically for industrial hygienists and emphasizes recognition, evaluation and control of a wide range of health hazards covered by 29 CFR 1910 and substance-specific standards in 29 CFR 1926. The featured practicum in this course includes analysis of the health hazards in a foundry. At the conclusion of this course, the student will be able to employ basic health hazard recognition; apply inspection sampling and instrumentation techniques and related OSHA policies; and, identify abatement methods.
 - c. #2000 Construction Standards. This course is specifically designed for safety specialists who will perform construction inspections. The CSHO will become acquainted with how the building process proceeds from site clearing to building finishing. Corresponding subparts of 29 CFR 1926 are presented in conjunction with the building process. The course features a field trip to a construction site to emphasize and reinforce learning.
3. #2030 Basic Electrical Principles. This course covers a basic understanding of electricity and electrical hazards. Electrical hazards are among the most frequently cited hazards and is one of the major causes of fatalities.
4. #1310 Investigative Interviewing Techniques. This course is intended to serve as a practical interviewing guide for OSHA compliance personnel. A major component of this course includes role-play using scenarios that provide the opportunity for students to practice interviewing skills.

The course emphasizes developing a plan for gathering the necessary facts, characteristics of good questioning techniques, active listening, and cross-cultural communication.

5. #1410 Inspection Techniques and Legal Aspects. This course introduces the student to inspection techniques related to OSHA compliance activity and to the associated formal requirements and processes of the legal system. Emphasis is placed on documenting a legally sufficient case file. The course includes the essential elements of conducting walkaround inspections and interviews, and analyzing, organizing and documenting information related to inspections and investigations. Students develop a sample legally defensible case file and participate in a mock trial as the culminating learning experience.
This course cannot be waived as per Section VIII.A.
5. #2450 Evaluation of Safety and Health Management Systems. This course emphasizes applying the principles of Safety and Health Management Systems (SHMSs) using OSHA guidelines and policies. Upon completion, the students will be able to evaluate the effectiveness of an employer's SHMS. A focus on recordkeeping requirements assists the CSHO in identifying system deficiencies between applicable safety and health elements and illness and injury reduction. Using active training techniques, students are guided to promote the value of an effective program that contributes to reducing illness and injury.
6. #1230 Accident Investigation. This course covers the key elements that are essential to conducting successful accident investigations. Major topics include investigation planning, documenting the scene, collecting facts through interviewing, failure analysis and analytical tools, collecting and analyzing physical evidence, and control strategies. Using a case file and interactive class workshops, students work in teams to gather and analyze evidence to develop facts, findings and conclusions.
7. Multi-Disciplinary Courses.
 - a. #1280 Safety Hazard Awareness for Industrial Hygienists. This course provides industrial hygienists with the knowledge and skills to become aware of selected safety hazards related to common worksite processes. By the end of the course, students will be able to decide if a referral is appropriate in accordance with OSHA's occupational safety standards and guidelines.
 - b. #1080 Health Hazard Awareness for Safety Officers. This course equips safety specialists with the skills to recognize health hazards while conducting workplace inspections and investigations.

During the course, students participate in laboratories where they use detector tube pumps to screen for potential air contaminants and

sound level meters to screen for noise hazards. By the end of the course, students will be able to decide if a referral is appropriate in accordance with OSHA's occupational health standards and guidelines.

- c. #2000 Construction Standards. This course is specifically designed for safety specialists and industrial hygienists who will perform in construction inspections. The CSHO will become acquainted with how the building process proceeds from site clearing to building finishing. Corresponding subparts of 29 CFR 1926 are presented in conjunction with the building process. The course features a field trip to a construction site to emphasize and reinforce learning.
8. #8200 Incident Command System I-200. When responding to an identified incident, the CSHO will be able to operate efficiently within the parameters of an Incident Command System (ICS).
 - a. Regions may approve one of three options:
 - OTI #8200 course which covers the content of ICS-100 and ICS-200 as specified by the National Integration Center (NIC).
 - An equivalent ICS training sponsored by another government agency (federal, state, or local); such a course must follow the guidelines developed by the NIC provided in the *National Standard Curriculum Training Development Guidance* document.

The most current version of this document can be found on the Federal Emergency Management Agency's (FEMA's) National Incident Management System (NIMS) Training Internet web pages.

Additionally, instructors must have qualifications specified by the NIC as posted on these web pages.
 - FEMA ICS-100 and ICS-200 online courses. These NIMS courses are located on FEMA's Emergency Management Institute Independent Study Program Internet website. The current title for ICS-100 is *IS-100, Introduction to Incident Command System I-100* and the current title for ICS-200 is *IS-200, ICS for Single Resources and Initial Action Incidents*.

VIII. Waiver from Required Training Program.

A. Waiver Conditions

The training program outlined in this instruction is required to be completed during the first three years of a CSHO's career. Administrators have discretion to waive any of the required courses listed, with the exception of the #1410 Inspection Techniques and Legal Aspects course.

Waivers shall be used rarely and shall be granted only in exceptional circumstances.

B. Assessment and Documentation.

The Branch Manager must assess and document that the CSHO has demonstrated that he/she can perform the tasks listed in the course objectives for the course being waived. After an assessment has been made, waiver requests shall be submitted in writing by the Branch Manager to the Administrator. The waiver request will document why the CSHO does not need to attend the specified course. The documentation will include how the CSHO has acquired the levels of knowledge, skills and abilities reflected in the objectives of the course for which the waiver is being requested. Not only must equivalent technical knowledge and skills be documented, but the documentation shall also indicate that the CSHO has institutional understanding of HIOSH specific policies and procedures. For example, criteria may include experience as a former compliance officer with an OSHA State Plan State or as a former 21(d) OSHA consultant.

C. Waiver Requests.

Only the Administrator can grant a waiver. The Administrator shall respond to waiver requests in writing. Such waivers shall become part of the CSHO's training record.

D. Training Record Annotated.

The Branch Manager shall annotate the CSHO's training record to reflect required courses waived by the Administrator.

IX. Time Extensions

The time requirements for completing the training shown in this instruction must be met. Only the Administrator can grant a time extension, which must be based on extenuating circumstances. The time allowed to complete the eight required courses should also allow insertion of technical courses throughout the three-year period. Technical courses may be taken at any time during the three-year period after the CSHO has completed both #1000 Initial Compliance and one of the standards courses.

A. Time Extension Conditions

If there are circumstances that prevent the CSHO from completing the required courses within the three-year period, the Administrator can extend the time for completion of the required courses for a period of up to one year. Time extensions may not exceed twelve months. The use of time extensions could extend the time allowed for a CSHO to complete the ten required courses to a maximum of four years from his/her employment date.

B. Time Extension Requests.

Time extensions shall be submitted in writing by the Branch Manager to the Administrator. Time extension requests include the reason(s) additional time is needed by the CSHO to complete the required training, the amount of time requested and the course(s) that will be completed during the requested time extension.

C. Time Extension Approvals.

The Administrator shall respond to the time extension request in writing. Copies of the responses approving time extension requests shall be provided to the Manager of the Administration and Technical Services Branch (ATS) and the CSHO.

D. Training Record Annotated.

The Branch Manager shall annotate the CSHO's training record to reflect the extension of time.

X. Monitoring the Training Program

Monitoring the CSHO's progress through the first three-year period is critical to ensure the success of the training program. Monitoring provides information regarding the benefits and effectiveness of the training received. In addition, it provides information on the ability of the CSHO to achieve training goals and objectives. Both the CSHO's Branch Manager and Administrator play major roles in the monitoring process.

A. The Branch Manager

The CSHO's Branch Manager shall:

1. Ensure that each CSHO has completed the necessary prerequisites before attending mandatory OSHA training courses.
2. Review the CSHO's performance of recommended self-study and on-the-job training (OJT) assignments.
3. Conduct a review with the CSHO following each recommended self study and OJT inspection activity. This review provides the supervisor with information on the progress of the CSHO and can assist in identifying areas requiring further training.
4. Determine when the CSHO has sufficient experience to participate fully in developing the actual case file; the OJT review may be discontinued when this has been effectively accomplished.

B. Administrator or Administration and Technical Services Manager.

The Administration and Technical Services Branch (ATS) Manager shall monitor the division's implementation of the training program outlined in this instruction through review of training documents. If the ATS Manager position is vacant, the Administrator will assume this function.

XI. Continuation of CSHO Development

A. Professional Standing, Recognition and Professional Certification

The series of courses listed for the CSHO's first three years provide a foundation for proficiency. Those CSHOs who choose to work toward a high level of knowledge and skill are encouraged to continue to attend technical courses at the OTI and equivalent sources. While professional certification is an important career milestone, it is not the only path to gaining professional standing or recognition.

CSHOs that complete new, complex or difficult assignments expand their capabilities and broaden their role as a safety and health professional inside and outside the division.

B. Role of Individual Development Plans

An Individual Development Plan (IDP) is an active plan to help the CSHO achieve organizational and career goals. IDPs must be updated annually and serve as a tool to provide documentation for each CSHO to chart and monitor his/her own progress toward developmental goals.

An IDP can help a CSHO:

1. Achieve and enhance the level of knowledge and skills required to achieve the functional competencies of a CSHO.
2. Build expertise as an OSH safety and health professional.
3. Continue professional development throughout his/her career.

C. IDPs for the Initial Three-Year Period.

Appendices A and B serve as guidelines for supervisors to select appropriate training outlined by this instruction during the first three years. The IDP (Form DL-80) should reflect:

1. Mandatory training required during the three-year period as outlined in this instruction.
2. Regional or Area Office training requirements.
3. Other developmental training as determined by the CSHO's Area Director. For example:
 - a. Supplemental training at the Regional and Area Office level that includes formal and/or informal mentoring by higher graded personnel and/or CSHO's with specialized experience.
 - b. Participation in various classes of inspections and a variety of industries and worksites.

D. IDPs Developed after the Three-Year Period.

1. The IDP should follow the guidance outlined in OSHA Instruction PER 05-00-001 (PER 10-1.1) OSHA Training Policy.
2. An IDP helps the CSHO continue to improve his/her present performance and prepare him/her for more responsible work in accordance with his/her potential and interests, and the needs of the division.
3. At a minimum, each CSHO is required to attend a safety and health related course once every three years. Appendices C and D are provided to assist supervisors and CSHOs in preparing IDPs for continuing development.

XII. Evaluation.

An overall evaluation of the training program for HIOSH compliance personnel effectiveness will be conducted by staff from the Administration and Technical Services Branch (ATS).

A. Established evaluation processes and criteria include:

1. Accompanied inspections. Regular accompanied inspections to determine the competency of compliance as well as consultation staff is required on an annual basis – by the CSHO’s supervisor and also by ATS staff. As part of the evaluation report, evaluators shall notate whether additional CSHO training or refresher training is needed.
2. Case File Reviews. As part of the ongoing program evaluation, case file reviews shall be conducted to determine not only compliance with program directives and procedures, but also for the effectiveness of the training program. ATS staff shall conduct case file reviews at least annually.

B. Evaluation Surveys

Evaluation surveys shall be distributed at the end of each HIOSH instructor-led class. This information provides valuable feedback from the student’s perspective to determine the perceived value and impact of instruction. It also serves as a basis for proposing changes to course objectives, course content and presentation methods.

Appendix A. Recommended CSHO Training Activities for Year One

Background and Description of Appendix A. This Appendix is recommended as a tool for supervisors of first year CSHOs.

The OSHA Training Institute (OTI) and other classes either conducted by or provided by HIOSH offers formalized training for CSHOs through its competency-based approach to curriculum. As a professional, the CSHO will acquire additional knowledge, skills, abilities and behaviors through other sources such as Self-Instruction (SI) and On-the-Job Training (OJT) which enhance the formal training a new CSHO receives at OTI and State training. This Appendix offers recommendations for both SI and OJT activities to be completed along with formal training at OTI and HIOSH.

The Appendix A table lists activities that should be completed in the branch prior to and after attending specified OTI or other State courses. Items listed in the “Activity” column should be completed by all CSHOs. Activities recommended specifically for safety specialists, industrial hygienists or construction specialists are listed in the last three columns. Each activity and discipline-specific recommendation is provided to complement material covered in the formal OTI training courses or the state equivalent.

Time allotted to accomplish SI and OJT assignments should be compatible with newly-hired CSHO’s current knowledge, skill, and experience levels. The supervisor should verify the CSHO’s ability to successfully complete SI and OJT assignments. Training assignments may also be supplemented by other comparable task assignments deemed appropriate and/or equivalent by the supervisor.

Under the “Date Completed” column, the supervisor is to enter the date completed, followed by his/her initial. The CSHO is to also initial.

Type of Activity	Activity Description	Date Completed/ Initial	Safety Specialists	Industrial Hygienists
PRIOR to Attending OSHA Training Institute’s Course #1000 Initial Compliance (or State equivalent)				
OJT	Work with supervisor to review the HIOSH New Employee Orientation Checklist	_____ Sup _____ CSHO_____	<i>No Additional Discipline-Specific Recommendations</i>	
	Work with supervisor to identify and become familiar with office administrative procedures (both personnel and citation processing)	_____ Sup _____ CSHO_____	<i>No Additional Discipline-Specific Recommendations</i>	
SI	Read and review Fundamentals of Industrial Hygiene, National Safety Council.	_____ Sup _____ CSHO_____	<i>Industrial Hygienists ONLY</i>	
Attend course, Fundamentals of Industrial Hygiene (For Industrial Hygienists only)		_____	<i>Industrial Hygienists ONLY. Course is offered either by the National Safety Council or by AIHA.</i>	

Type of Activity	Activity Description	Date Completed	Safety Specialists	Industrial Hygienists
OJT	Explore the OSHA Intranet and Internet sites. Begin with the following: OSHA Intranet: <ul style="list-style-type: none"> • IMIS (Establishment Search) OSHA Public Page (Internet): <ul style="list-style-type: none"> • Directives system • OSHA Technical Manual (OTM) • Whistleblower protection program 	_____ Sup _____ CSHO _____	No Additional Discipline-Specific Recommendations	NIOSH website
	Receive training and instructions on use and limitations of PPE (e.g. hard hats, safety glasses, hearing protection, high-visibility road vests, and safety shoes)	_____ Sup _____ CSHO _____	No Additional Discipline-Specific Recommendations	
	Receive training and instructions on personal use of respirators, according to HIOSH program; be fit-tested.	_____ Sup _____ CSHO _____	No Additional Discipline-Specific Recommendations	
	With supervisor or assigned mentor, review basic programs such as: <ul style="list-style-type: none"> • Hazard Communication • The Control of Hazardous Energy (Lockout/Tagout) • Recordkeeping 	_____ Sup _____ CSHO _____	No Additional Discipline-Specific Recommendations	
SI	Review HIOSH Field Operations Manual.	_____ Sup _____ CSHO _____	No Additional Discipline-Specific Recommendations	
SI	Read and review OSH Act and Hawaii OSH Law and become familiar with: <ol style="list-style-type: none"> 1. Which employers and employees are covered, and 2. The responsibilities of employers and employees. 3. The differences between the two. 	_____ Sup _____ CSHO _____	No Additional Discipline-Specific Recommendations	

Type of Activity	Activity Description	Date Completed	Safety Specialists	Industrial Hygienists
SI	Review the contents of 29 CFR 1910 and 29 CFR 1926 and become familiar with the types of hazards covered by OSHA/HIOSH regulations. Consult with supervisor or assigned mentor to determine which hazards are more likely to be investigated by safety specialists and which are more likely to be investigated by industrial hygienists.	_____ Sup ____ CSHO ____	No Additional Discipline-Specific Recommendations	
	Review the HIOSH webpages related to on-site consultation, Voluntary Protection Programs (VPP), and Safety and Health Achievement and Recognition Program (SHARP).	_____ Sup ____ CSHO ____	No Additional Discipline-Specific Recommendations	
		_____ Sup ____ CSHO ____	No Additional Discipline-Specific Recommendations	
OJT	Accompany a fully-qualified CSHO on a programmed inspection and observe the following: <ul style="list-style-type: none"> • Inspection preparation • Calibration of instruments • Opening conference • Walkthrough • Use of instruments or other measuring devices • Closing Conference • Preparation of citations. 	_____ Sup ____ CSHO ____	Instruments might include Santronics AC sensor, voltmeter, Woodhead, inclinometer	Instruments might include velometer, and air or noise sampling equipment.
	Accompany a fully-qualified CSHO on a general schedule follow-up inspection.	_____ Sup ____ CSHO ____	No Additional Discipline-Specific Recommendations	

Type of Activity	Activity Description	Date Completed	Safety Specialists	Industrial Hygienists
Attend Training: Course #1000-H Initial Compliance			No Additional Discipline-Specific Recommendations	
SI	Review the contents of 29 CFR 1915, 1917, and 1918 (Applies to public sector in Hawaii) Consult with supervisor or assigned mentor to determine whether HIOSH has a history of making inspections under these standards.	_____ Sup _____ CSHO _____	No Additional Discipline-Specific Recommendations	
	Review the contents of 29 CFR 1928 (Agriculture). Consult with supervisor or assigned mentor to determine whether HIOSH has a history of making inspections under these standards.	_____ Sup _____ CSHO _____	No Additional Discipline-Specific Recommendations	
OJT	Identify consensus or other standards referenced in the OSHA/HIOSH standards. Discuss with the supervisor whether the provisions of the identified standards are incorporated by reference or are advisory in nature. Determine how personnel in your office access copies of needed consensus standards.	_____ Sup _____ CSHO _____	All standards in Part 2, Part 3, and Part 8, Hazard Communication (1910.1200) only.	Part 8.
OJT	Specific to your career path, accompany a fully qualified CSHO on an inspection and discuss related technical information from that inspection.	_____ Sup _____ CSHO _____	Example: After inspection involving storage of flammable and combustible liquids, discuss chemistry related to fire and solvents. Example: After a trench inspection, discuss the following: trigonometry applicable to trenching and mechanics	Example: after an inspection involving lead exposures, discuss toxicology and health effects, dose-response relationships, feasible engineering controls
SI	Take online OSHA Information System (OIS) course	_____ Sup _____ CSHO _____	No Additional Discipline-Specific Recommendations.	

Type of Activity	Activity Description	Date Completed	Safety Specialists	Industrial Hygienists
OJT	With supervisor or assigned mentor, identify the instruments used by personnel in your specific discipline, and review the user manuals.	_____ Sup_____ CSHO_____	Examples include: Santronics AC sensor, voltage testor, inclinometer, penetrometer	Examples include; air monitoring equipment, sound level meters, noise dosimeters, velometers, heat stress monitors. :
	With supervisor or assigned mentor, review the §60-2(a)(3), or §110-2(a)(3) [General duty clause, 5(a)(1)] process.	_____ Sup_____ CSHO_____	No Additional Discipline-Specific Recommendations.	
Attend OTI Standards Course per Selected Discipline Industrial Hygienists must also take Course #1050		_____	Course #1050 Introduction to Safety Standards	Course #1250 Introduction to Health Standards
OJT	Work with supervisor or assigned mentor to identify and become familiar with OSHA's Nationally Recognized Testing Laboratory (NRTL) program. http://osha.gov/dts/otpca/nrtl/nrtl/index.html	_____ Sup_____ CSHO_____	No Additional Discipline-Specific Recommendations.	
OJT	With supervisor or assigned mentor, review calibration and maintenance requirements of equipment used in your discipline (e.g. detector tube pumps, carbon monoxide and/or multiple gas meters, receptacle (three-light) tester, sound level meters, camera, tape measure)	_____ Sup_____ CSHO_____	Examples include: Santronics AC sensor, voltage tester, camera, tape measure, inclinometer, penetrometer	Examples include: Air monitoring instrumentation, noise dosimeters, four-gas meters, tape measure, camera .
SI	Review the library's basic texts, references, and materials related to your discipline's hazards and controls.	_____ Sup_____ CSHO_____	<ul style="list-style-type: none"> • Warehouse Safety, Swartz • An Illustrated Guide to Electrical Safety 	<ul style="list-style-type: none"> • Health Hazards in Industry, Burgess • Industrial Ventilation, ACGIH
Attend OTI Course #2000 Construction Standards		_____	Required for Safety Specialists only	

Type of Activity	Activity Description	Date Completed	Safety Specialists	Industrial Hygienists
SI	<p>Prepare a written technical report or PowerPoint presentation using basic texts from the library and Internet resources for a specific types of hazard related to your discipline. Include:</p> <ul style="list-style-type: none"> • Types of worksites where the hazard may be expected to occur • Work activities that may involve the hazard • Equipment that may be associated with the hazard • Engineering and/or administrative controls and PPE that may be required to control the hazard • Related OSHA/HIOSH standards 	<p>_____ Sup_____ CSHO_____</p>	<p>Examples include: amputations, electrical</p> <p>Examples include: falls from heights, trenching.</p>	<p>Examples include; noise, exposure to toxic air contaminants.</p>
OJT	<p>Accompany a fully qualified CSHO and under the direction of supervisor or assigned mentor, prepare the post-inspection case file including all forms -- OSHA-1, OSHA-1A, and all 1Bs documenting:</p> <ul style="list-style-type: none"> • Hazard • Standard • Employee Exposure • Employer knowledge • Recommended abatement (e.g. engineering, administrative controls, PPE) • Recommended penalties <p><i>A minimum of 3 times.</i></p>	<p>_____ Sup_____ CSHO_____</p>	<p>No Additional Discipline-Specific Recommendations.</p>	
OJT	<p>Attend an informal conference</p>	<p>_____</p>	<p>No Additional Discipline-Specific Recommendations</p>	

Type of Activity	Activity Description	Date Completed	Safety Specialists	Industrial Hygienists
OJT	Accompanied by a senior CSHO conduct a follow-up inspection: <ul style="list-style-type: none"> • Review the case file to determine equipment necessary to evaluate the implementation of controls • Prepare all equipment for the follow-up inspection • Conduct the opening conference • Set up or operate all equipment for determining compliance • Answer routine questions concerning scope of survey, reasons for taking measurements, and general methods of controlling common hazards. • Conduct the closing conference. 	_____ Sup_____ CSHO_____	No Additional Discipline-Specific Recommendations.	
Attend Course #1310, Investigative Interviewing Techniques		_____	All disciplines	
Attend Course #1410, Inspection Techniques and Legal Aspects		_____	All disciplines	
OJT	With supervisor, discuss the legal aspects of a case and the techniques used to determine exposure, and employer knowledge.	_____ Sup_____ CSHO_____	No Additional Discipline-Specific Recommendations.	
OJT	With supervisor, discuss the process for a multi-employer worksite inspection. Discuss how to determine the type of employer and any legal defenses.	_____ Sup_____ CSHO_____	No Additional Discipline-Specific Recommendations.	

Type of Activity	Activity Description	Date Completed	Safety Specialists	Industrial Hygienists
OJT	Participate as a team member in an inspection involving a multi-employer worksite. Prepare the post-inspection case file.	_____ Sup_____ CSHO_____	No Additional Discipline-Specific Recommendations.	
SI	Perform a literature and web search to resolve a problem in hazard controls, including feasibility. Develop a written report incorporating the information.	_____ Sup_____ CSHO_____	Machine guarding; Falls from heights	Noise abatement
SI	Review three case files assigned by the supervisor, prepare a written report that summarizes: <ul style="list-style-type: none"> • Reason for the inspection • Nature and characteristics of the workplace • Hazards investigated, equipment used, and samples or measurements taken • Violations identified • What additional documentation might have strengthened the case • Abatement methods used by the employer 	_____ Sup_____ CSHO_____	No Additional Discipline-Specific Recommendations.	
OJT	Conduct at least three (3) programmed inspections accompanied by supervisor or assigned mentor from beginning to end (inspection preparation to abatement certification/verification and case closure)	_____ Sup_____ CSHO_____		Conduct employee exposure monitoring.
OJT	Conduct at least two (2) referral inspections accompanied by supervisor or assigned mentor from beginning to end (inspection preparation to abatement certification/verification and case closure)	_____ Sup_____ CSHO_____		

Work Assignments for rest of first year: Programmed, referrals, and follow-up inspections.

Appendix B. Recommended CSHO Training Activities for Years Two and Three.

Background and Description of Appendix B. This Appendix is a tool for supervisors of CSHOs to use to plan training during the CSHO's second and third years of employment. Ideally, the courses would be taken in the order listed. The proposed sequence assists CSHOs with building professional expertise by setting incremental, achievable goals.

Some of the initial courses recommended for years two and three include an application of technical knowledge; however, the initial courses are not intended to provide an in-depth perspective in a specific technical area. OTI offers additional courses that deal specifically with skills and knowledge in several technical areas related to safety, health, or construction. Refer to Appendix D *Correlation of OTI Courses to Professional Certification* for more detailed information about OTI courses that relate to professional certification.

After completion of each of the required courses and optional recommended technical courses, supervisors should assign CSHOs inspections which further reinforce the retention and transfer of the course learning objectives.

Years two and three offer the CSHO opportunities to reach professional development goals by:

- Completing the required OTI courses
- Selecting optional technical courses to support professional development
- Self-Instruction (SI)
- On-the-Job Training (OJT)
- Completing training required by various directives as assigned by HIOSH plans (Refer to Appendix C for more information).

Required Courses	Follow-up On-the-Job Training (OJT)	Self-Instruction (SI)	Applies Technical Knowledge
#2030 Basic Electrical Principles	CSHOs should: <ul style="list-style-type: none"> • Participate in three inspections involving electrical hazards. • Prepare and operate equipment such as Santronics AC Sensor, volt meter • Document violations and prepare citations related to electrical hazards. 	Research and read new and applicable letters of interpretation, directives, court cases, memoranda of understanding and other OSHA policy documents related to technical course content	This course applies basic technical knowledge related to safety and health.
#2450-H Evaluation of Safety and Health Management Systems	After completion of #2450-H <i>Evaluation of Safety and Health Management System-Hawaii</i> , the CSHO should: <ul style="list-style-type: none"> • Participate in a minimum of three inspections of establishments and evaluate their safety and health management program. • For each inspection, the CSHO should <ul style="list-style-type: none"> ○ Evaluate the effectiveness of the safety and health program ○ Document his/her reasoning ○ Discuss the evaluation with his/her supervisor 	Not applicable	This course applies basic technical knowledge related to safety and health.
#1230 Accident Investigation	CSHOs should: <ul style="list-style-type: none"> • Participate in three accident/fatality investigations under the guidance of a team leader and/or experienced CSHO. • Be given the opportunity to demonstrate effective investigative interviewing techniques. 	Review closed accident investigations; determine what was done well, what could have been improved. Discuss with supervisor.	This course applies basic technical knowledge related to safety and health.

Required Courses	Follow-up On-the-Job Training (OJT)	Self-Instruction (SI)	Applies Technical Knowledge
<p>Safety Specialists: #1080 Health Hazard Awareness for Safety Officers</p> <p>Industrial Hygienists: #1280 Safety Hazard Awareness for Industrial Hygienists</p>	<p>Safety Specialists. After the CSHO has completed the #1080 <i>Health Hazard Awareness for Safety Officers</i> course, they should participate in a minimum of three health inspections under the guidance of an experienced industrial hygienist (EHS) and assist in preparation of citations.</p> <p>Industrial Hygienists (EHS). After the EHS has completed the #1280 <i>Safety Hazard Awareness for Industrial Hygienists</i> course, they should participate in a minimum of three safety inspections under the guidance of an experienced CSHO and assist in the preparation of citations.</p>	<p>Both disciplines: Research and read new and applicable letters of interpretation, directives, court cases, memoranda of understanding and other OSHA policy documents related to course content.</p>	<p>These courses apply basic technical knowledge related to safety and health.</p>
<p>#8200 Incident Command System I-200 or equivalent</p>	<p>After completion of the #8200 Incident Command System, I-200, or equivalent, the CSHO should participate in tabletop exercises (as available) concerning emergency responses.</p>	<p>Review the National Response Framework for emergency management. http://www.fema.gov/pdf/emergency/nrf/nrf-core.pdf</p>	<p>This course does not specifically apply technical knowledge related to safety and health.</p>

Required Courses Technical Courses	Follow-up On-the-Job Training (OJT)	Self-Instruction (SI)	Applies Technical Knowledge
Safety Specialists #2040 Machinery and Machine Guarding Standards #3110 Fall Arrest Systems #3080 Principles of Scaffolding #2080 Cranes and Material Handling for General Industry #3010 Excavation, Trenching & Soil Mechanics #3020 Tunneling and Underground Operations #3030 Concrete, Forms and Shoring #3220 Applied Welding Principles	Following the specific course, the CSHO should participate in at least one inspection that: <ul style="list-style-type: none"> • Concern the type of hazard that was the subject of the technical course • Prepare and operate equipment appropriate for an inspection related to the technical area • Document violations and prepare citations for inspections related to the technical area. 	Research and read new and applicable letters of interpretation, directives, court cases, memoranda of understanding and other OSHA policy documents related to technical course content	These courses apply technical knowledge that is beyond the basic level related to safety and health.
Industrial Hygienists #2200 Industrial Noise #2210 Principles of Ventilation #2220 Respiratory Protection #2230 Industrial Toxicology	Following the specific course, the CSHO should participate in at least one inspection that: <ul style="list-style-type: none"> • Concern the type of hazard that was the subject of the technical course • Prepare and operate equipment appropriate for an inspection related to the technical area • Document violations and prepare citations for inspections related to the technical area. 	Research and read new and applicable letters of interpretation, directives, court cases, memoranda of understanding and other OSHA policy documents related to technical course content	These courses apply technical knowledge that is beyond the basic level related to safety and health.

Appendix C. OTI Courses Required or Recommended in OSHA Directives

This Appendix is recommended as a tool for supervisors to help determine additional training specifically required or recommended by OSHA/HIOSH directives. The training listed in this Appendix may be taken any time after completion of the three required courses: #1000 Initial Compliance Course, the appropriate Standards course (#1050 Introduction to Safety Standards for Safety officers, #1250 Introduction to Health Standards for Industrial Hygienists) and the additional specialty course (Fundamentals of Industrial Hygiene for EHSs (Industrial Hygienists) and #2000 Construction Standards for Safety specialists).

Directive	HIOSH Personnel	OTI Course	Comments
Petroleum Refinery Process Safety Management NEP <u>CPL 03-00-004</u>	Team Leaders Courses #3300, #3400, and #3410 are required for Team Leaders plus prior experience in chemical industry safety and experience leading OSHA teams on large inspections	<ol style="list-style-type: none"> 1. #3300 Safety & Health in the Chemical Processing Industry 2. #3400 Hazard Analysis in the Chemical Processing Industry 3. #3410 Advanced Process Safety Management 	Completion of Course #3300 prior to FY91 does not meet this requirement for Team Leaders and Level 1 Team Members.
	Level 1 Team Member Courses #3300 & #3400 are required for level 1 Team Members (#3410 encouraged) plus prior experience in chemical industry safety.		
	Level 2 Team Member Courses #3300 & #3400 are required + 2 years of OSHA inspection experience or equivalent.		

Appendix C. OTI Courses Required or Recommended by OSHA/HIOSH Directives.

Directive	HIOSH Personnel	OTI Course	Comments
<p>Fatality/Catastrophe Investigation Procedures <u>CPL 02-00-137</u></p>	<p>OSHA personnel who may be involved in fatality and catastrophe investigations</p>	<ol style="list-style-type: none"> 1. #1000 Initial Compliance 2. #1020 Basic Accident Investigation (Editorial Note: will become obsolete when #1230 Accident Investigation is offered) 3. #1410 Inspection Techniques and Legal Aspects 4. #2020 Advanced Accident Investigation (Editorial note: will become obsolete when #1230 Accident Investigation is offered) 5. #3420 Criminal Investigation Training Program 	<p>OSHA personnel who may be involved in such investigations are encouraged to enroll in these classes and demonstrate proficiency in the relevant areas addressed.</p> <p>To the extent practical, only trained and experienced CSHOs will be assigned to investigate such incidents.</p>
<p>Enforcement of the Electric Power Generation, Transmission, and Distribution Standard <u>CPL 02-01-038</u></p>	<p>CSHOs inspecting an electric power generation, transmission and/or distribution facility or other site covered by 1910.269 and who must enter an electrical restricted space.</p>	<p>#3109 Electric Power Generation, Transmission and Distribution</p>	<p>Required (or equivalent course) NOTE: Some CSHOs have received electrical safety-related work practice training through utility or other industry work experience and training. This experience and outside training may be used to meet the minimum training requirements, however, they must have had at least the interim 3-day OTI course on 1910.269.</p>

Appendix C. OTI Courses Required or Recommended by OSHA/HIOSH Directives.

Directive	HIOSH Personnel	OTI Course	Comments
Respiratory Protection Program Guidelines <u>CPL 02-02-054</u>	HIOSH Respirator Program Administrator (OH Branch Manager)	#2220 Respiratory Protection	Required (or equivalent course).
Application of the Permit-Required Confined Spaces (PRCS) Standard, 29 CFR 1910.146 <u>CPL 02-00-100</u> Enforcement of the Electric Power Generation, Transmission, and Distribution Standard <u>CPL 02-01-038</u>	CSHOs that will be entering permit spaces or enclosed spaces.	1. Confined Space Entry 2. Respiratory Protection 3. Introduction to Industrial Hygiene for Safety Personnel (Editorial Note: CPL 02-00-100 and CPL 02-01-038 do not specify course numbers)	Required (or equivalent courses).
Exposure Control Plan for HIOSH Personnel with Occupational Exposure to Bloodborne Pathogens <u>CPL 02-02-060</u>	One health person in the office	Bloodborne Pathogens Training at OTI, e.g. #2240 Biohazards Individual must have a biological sciences background	After OTI training, the HIOSH representative will conduct training for other HIOSH personnel covered by this Plan. Note that training records are to contain all information specified in 1910.1030(h)(2) and will be maintained for 3 years from the date the training occurred.

Appendix C. OTI Courses Required or Recommended by OSHA/HIOSH Directives.

Directive	HIOSH Personnel	OTI Course	Comments
<p>The Control of Hazardous Energy – Enforcement Policy and Inspection Procedures <u>CPL 02-00-147</u></p>	<p>CSHOs evaluating machines and equipment to determine that they are properly locked and/or tagged out in accordance with 1910.147 and 1910.333</p>	<p>Recommended OTI courses include: #2030 Basic Electrical Principles #3090 Electrical Standards #3094 refer to note below #3095 refer to note below #3190 Electric Power Generation, Transmission & Distribution</p> <p>Editorial Note: Although the directive recommends the #1000 Initial Compliance course, energy control principles are not covered in this course. Also OTI no longer offers the shortened Electrical Standards course (#3094 and #3095)</p>	<p>Experienced OSHA/HIOSH staff may already have many OTI courses (or other training with equivalent curriculum) that cover LOTO and electrical safety-related energy control practices; therefore, employment records and training certificates may be used to certify that training has been accomplished.</p>
<p>Combustible Dust National Emphasis Program (Reissued) <u>CPL 03-00-008</u></p>	<p>When possible, only CSHOs trained in recognizing hazards associated with combustible dust shall be assigned to conduct inspections under this NEP</p>	<p>#3320 Combustible Dust Hazards and Controls (or equivalent)</p>	

Appendix C. OTI Courses Required or Recommended by OSHA/HIOSH Directives.

Directive	HIOSH Personnel	OTI Course	Comments
Voluntary Protection Programs (VPP): Policies and Procedures Manual <u>CSP 03-01-003</u>	Onsite Evaluation Team	#2450-H, Evaluation of Safety and Health Management Systems (SHMS), or other formal classroom training in evaluating safety and health management systems plus working knowledge and understanding of SHMSs	CSHOs whose duties may include enforcement responsibilities over the worksite may be assigned to the VPP onsite team. However, such personnel may not subsequently engage in enforcement activity at the worksite for 2 years or until the worksite is no longer a VPP participant, whichever comes first. The Administrator, on a case-by-case basis, may choose to override this 2-year requirement.
	PSM "Level 1" Auditor	<ol style="list-style-type: none"> 1. #3300 Safety & Health in the Chemical Processing Industry 2. #3400 Hazard Analysis in the Chemical Processing Industry 3. #3410 Advanced Process Safety Management Plus prior experience in chemical industry safety	The team leader must meet the same qualifications as "Level 1" auditor plus have experience in onsite evaluations, including once as a team members, once as a backup team leader, and once as a team leader in training (with a qualified team leader as backup team leader).

Appendix D. Correlation of OTI Courses to Professional Certification

Professional Certification. Credentialing organizations such as the American Board of Industrial Hygiene and the Board of Certified Safety Professionals have spent many years developing a specific process for determining certification exam questions and the overall requirements that meet the level of achievement of a certified professional in a given field. Passing a certification exam means an individual has gained a high level of competence in their chosen profession, and the recognition accorded such an individual is commensurate with the achievement.

CSHOs are also encouraged to pursue other available professional certifications that may be appropriate for their current circumstances. For example, the certification of Associate Safety Professional (ASP) may be obtained by CSHOs who lack the required years of experience to qualify to become a Certified Safety Professional.

Relationship of OTI Courses to Professional Certification. Supervisors and CSHOs should be aware that OTI courses alone are not sufficient preparation for passing certification exams. This is due to the specific emphasis that OTI course place upon the job functions and related on-the-job competencies that a CSHO must use every day. Certification exams are offered to the general public, not just OSHA compliance safety and health officers; they are designed to apply to a broad range of job functions and job competencies. It is recommended that managers consider in addition to OTI technical course attendance, other methods to supplement certification preparation study, such as certification preparation software, and mentoring by other certified staff.

This Appendix highlights OTI courses that may provide information or assistance with preparation for professional certification exams offered by the Council on Certification of Health, Environmental and Safety Technologists (CCHST), the American Board of Industrial Hygiene (ABIH), and the Board of Certified Safety Professionals (BCSP). Three certifications are addressed in this Appendix: Certified Construction Health and Safety Technician (CCHST[®]), Certified Industrial Hygienist (CIH), and Certified Safety Professional (CSP).

Appendix D. Correlation of OTI Courses to Professional Certification

Certified Construction Health & Safety Technician®		Certified Industrial Hygienist		Certified Safety Professional	
2050	Cranes and Rigging	2200	Industrial Noise	2010	Hazardous Materials
2260	Permit-Required Confined Spaces	2210	Principles of Ventilation	2030	Basic Electrical Principles
3010	Excavation, Trenching & Soil Mechanics	2220	Respiratory Protection	2050	Cranes & Rigging for Construction
3020	Tunneling and Underground Operations	2230	Industrial Toxicology	2070	Fire Protection and Life Safety
3030	Concrete, Forms and Shoring	2240	Biohazards	2210	Principles of Ventilation
3080	Principles of Scaffolding	2250	Ergonomics Applied to MSDs and Nerve Disorders	2250	Ergonomics Applied to MSDs and Nerve Disorders
3090	Electrical Standards	2330	Indoor Air Quality	2610	Ionizing Radiation
3110	Fall Arrest Systems	2260	Permit-Required Confined Spaces	3090	Electrical Standards
3160	Steel Erection	2610	Ionizing Radiation	3400	Hazard Analysis in the Chemical Processing Industries
3500	Demolition	3220	Applied Welding Principles	4520	Certified Safety Professional Examination Preparation
		3280	Industrial Hygiene Chemistry		
		3350	Comprehensive Review of Emergency Response under 1910.120(q)		
		4530	Certified Industrial Hygienist Examination Preparation		

Appendix E. List of Recommended Reading for New Compliance Officers

The following are some suggested texts, located in the HIOSH Library, to enhance the compliance officers' understanding of hazards, hazards associated with certain industries or processes, and methods of abatement.

Safety	Health
<ul style="list-style-type: none"> • Accident Prevention Manual, National Safety Council • Principles and Practices of Heavy Construction • Fall Protection and Scaffolding Safety, Gagnet • Fire Protection Handbook, NFPA • An Illustrated Guide to Electrical Safety • Practical Electrical Safety, Winburn • Introduction to Fall Protection, Ellis • Warehouse Safety, Swartz • Flammable & Combustible Liquids Code Handbook, NFPA • Crane Hazards and Their Prevention, MacCollum • Modern Welding, Goodheart-Wilcox • Welding Health and Safety, AIHA • Elevated Work Platforms & Scaffolding 	<ul style="list-style-type: none"> • Fundamentals of Industrial Hygiene, National Safety Council • The Occupational Environment: It's Evaluation, Control and Management, Dinardi, AIHA • Health Hazards in Industry, Burgess • Industrial Ventilation, ACGIH • Application and Computational Elements of Industrial Hygiene, Stern and Mansdorf • A Strategy for Assessing and Managing Occupational Exposures, AIHA • Casarett & Doull's Toxicology • Hunter's Diseases of Occupations, Raffle/Adam • Quantitative Industrial Hygiene, ACIH • The Noise Manual, AIHA • Guidelines for Hazard Evaluation Procedures, CCPS • Chemical Protective Clothing, AIHA • Welding Health and Safety, AIHA