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CONNECTICUT DEPARTMENT OF LABOR DIVISION OF OCCUPATIONAL SAFETY AND HEALTH

CONN-OSHA Lists the Most Frequently Violated Standards for 10-year Period

By: Grayson Gregory, Research Analyst

CONN-OSHA's enforcement unit issued 8,150 citations for violations in public sector workplaces during the 10-year period of January 1, 1995 to December 31, 2004. Of these 8,150 citations, more than 3,100 were considered serious violations with initial penalties amounting to \$509,910. The ten most frequently cited violations are detailed in Table 1. Three of the "top ten" citations involve violations of the electrical standard, 29 CFR 1910.303 and 1910.305.

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- Failure to assure that electrical equipment is free from recognized hazards that are likely to cause death or serious physical harm is the most frequently cited violation for the past 10 years. An example of this violation is not having a ground fault circuit interrupter (GFCI) where required;
- Misuse of flexible cords and cables is the second most frequently violated standard. Examples of misuse of flexible cords and cables include substituting them for fixed wiring and running them through holes in walls, ceilings, or floors;
- The third violation of the electrical standard involves conductors entering boxes, cabinets, or fittings. Conductors must be protected against abrasion where they enter cabinets, boxes or fittings and unused openings must be effectively closed.

**Table 1.
Ten Most Frequently Violated Standards in Public Sector Workplaces in Connecticut**

January 1, 1995 - December 31, 2004

Standard Violated	Subpart	Description	Total Violations
1910.303 (b)(1)	Electrical	Electrical equipment not free from recognized hazards	385
1910.305 (g)(1)	Electrical	Use of flexible cords and cables	364
1910.157 (e)(2)	Fire Protection	Inspection, maintenance, and testing of portable fire extinguishers	325
1910.1200 (e)(1)	Toxic & Hazardous Substances	Written hazard communication program	286
1910.1200 (f)(5)	Toxic & Hazardous Substances	Labels and other forms of warning	242
1910.22 (d)(1)	Walking-Working Surfaces	Floor loading protection	187
1910.1200 (h)(1)	Toxic & Hazardous Substances	Employee information and training	168
1910.106 (d)(2)	Hazardous Materials	Container and portable tank storage	161
1910.305 (b)(1)	Electrical	Conductors entering cabinets, boxes, or fittings	158
1910.22 (a)(1)	Walking-Working Surfaces	Housekeeping	152

Failure to inspect, maintain, and test portable fire extinguishers, 29 CFR 1910.157 resulted in 325 violations during the past 10 years. This standard requires monthly visual inspection and annual maintenance checks of all portable fire extinguishers.

Violations of the Hazard Communication Standard, 29 CFR 1910.1200 accounted for three of the "top ten" violations and were cited a total of 696 times. They are:

- Failure to have a written hazard communication program;
- Containers of hazardous chemicals not labeled, tagged, or marked; *(continued on page 2)*

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Most Frequently Violated Standards *cont...*

- Employees were not provided with information and training on hazardous chemicals in their work area.

Failure to have a placard with the load limit approved by the building official marked and securely affixed in a conspicuous place is another frequently cited violation, 29 CFR 1910.22. This is most commonly cited in overhead storage areas.

Using unapproved containers and portable tanks to store flammable or combustible liquids, 29 CFR 1910.106 caused inspectors to issue citations for 161 violations.

- Storing gasoline in containers other than self-venting, self-closing cans is the most common example of this violation.

Rounding out the “top ten” are violations relating to housekeeping, 29 CFR 1910.22.

- Employers are required to ensure that all places of employment, passageways, storerooms, and service rooms be kept clean, orderly and in a sanitary condition.

Table 2 and Graph 1 show the three most frequently cited violations in selected state and municipal government workplaces. Additional information can be obtained by calling 860-263-6912. *(continued on page 4)*

Table 2. Frequently Violated Standards, Selected Public Sector Workplaces, Connecticut January 1, 1995 – December 31, 2004			
	Most frequently violated standard	2 nd most frequently violated standard	3 rd most frequently violated standard
Total Municipal Government	Use of flexible cords and cables	Electrical equipment not free from recognized hazards	Inspection, maintenance, and testing of portable fire extinguishers
Police	Bloodborne pathogens information and training	Use of flexible cords and cables	Housekeeping
Fire	Written hazard communication program	Emergency response to hazardous substance releases	Fire brigade training and education
Street & Highway	Inspection, maintenance, and testing of portable fire extinguishers	Written hazard communication program	Labels and other forms of warning
Public Utilities	Protection of open-sided floors, platforms, and runways	Electrical equipment not free from recognized hazards	Inspection, maintenance, and testing of portable fire extinguishers
Total State Government	Electrical equipment not free from recognized hazards	Labels and other forms of warning	Use of flexible cords and cables
Social Services	PPE hazard assessment and equipment selection	Bloodborne pathogens exposure control plan	Identification of disconnecting means and circuits
Highway Maintenance Garage	Labels and other forms of warning	Container and portable tank storage	Protection of open-sided floors, platforms, and runways
Justice, Public Order & Safety	Labels and other forms of warning	Housekeeping	Electrical equipment not free from recognized hazards

CONN-OSHA Training Update...

Breakfast Roundtable Discussion Group **The third Tuesday of every month** The intent of these free 90-minute workshops is to discuss safety and health issues in a supportive and informal environment. These meetings cover subjects ranging from evacuation plans and fire extinguishers to air quality and ergonomics. *The roundtable meetings are held from 8:15 a.m. to 9:45 a.m. at the Metropolitan District Training Center, 125 Maxim Road, Hartford, CT. Pre-registration is required.*

Trenching and Excavation* **May 5, 2005** Studies show that excavation work is one of the most hazardous types of work done in the construction industry. The primary concern in excavation-related work is a cave-in. Cave-ins are much more likely to be fatal to the employees involved than other construction-related accidents. This session delivers a thorough overview of 29 CFR 1926.650 - 652, including the role of the competent person.

Defensive Driving/Fleet Safety* **June 2, 2005** This course is designed to refresh and improve the basic driving knowledge that you already have. According to the National Safety Council, an estimated 77% of traffic accidents are a result of driver error. Learning how to become a better driver is essential to ensuring your safety on the road.

Powered Industrial Trucks* **July 14, 2005** With well over one million lift trucks in operation today, emphasis must be placed on both operator and pedestrian safety. This half-day program will help you understand OSHA safety and health regulations governing these pieces of equipment, in addition to providing you with assistance in developing training for your lift truck operators and other affected employees.

*Classes are free and will be held at 200 Folly Brook Blvd, Wethersfield, CT in Conference Room A from 9 a.m.—Noon unless otherwise noted. Pre-registration is required!

To register for any of these sessions, call Jackie Maldonado at (860)263-6919, or send an e-mail to jackie.maldonado@po.state.ct.us. For a complete listing of our upcoming training sessions, please visit our web site at www.ctdol.state.ct.us/osha/osha.htm.

The Controlled Negative Pressure (CNP) Redon Fit-Testing Protocol

By: *Savita Trivedi, CIH, CSP, Occupational Hygiene Consultant*

The U.S. Department of Labor, Occupational Safety & Health Administration (USDOL-OSHA) has approved an additional quantitative fit testing protocol, the Controlled Negative Pressure (CNP) REDON fit testing protocol, for inclusion in Appendix A of its Respiratory Protection Standard, 29 CFR 1910.134. In addition to general industry, the protocol also affects the respiratory protection standards for shipyard employment and construction. The Agency has adopted this protocol under the provisions contained in the Respiratory Protection Standard that allow individuals to submit evidence for including additional fit testing protocols in the standard. The final rule became effective September 3, 2004 for those establishments covered by USDOL-OSHA. Complete details of the new respiratory protection fit-testing requirements and the notice of the final rule are published in the August 4, 2004 Federal Register.

The State of Connecticut Department of Labor Occupational Safety and Health Administration (CONN-OSHA) plans to revise their current Respiratory Protection Standard to adopt the CNP REDON fit testing protocol based on the USDOL-OSHA final rulemaking. This process is currently in progress and is pending adoption.

Respirator fit testing protocols accepted by OSHA are contained in Appendix A of the Respiratory Protection Standard. The standard includes four qualitative and three quantitative fit testing protocols. The qualitative fit testing protocols are as follows: isoamyl acetate protocol; saccharin solution aerosol protocol; Bitrex™ solution aerosol protocol; and irritant smoke (stannic chloride) protocol. The following are the quantitative fit testing protocols: generated-aerosol quantitative fit testing protocol; ambient-aerosol condensation nuclei counter (CNC) quantitative fit testing (Portacount™) protocol; and controlled negative pressure (CNP) quantitative fit testing protocol. The new quantitative CNP REDON protocol does not replace the existing fit testing protocols, but instead is an alternative protocol that may be used for fit testing and selecting respirators.

The CNP REDON fit testing protocol is a variation of the existing CNP protocol contained in Appendix A of the standard. The new protocol has the same fit-test requirements and uses the same test instrument as the CNP protocol previously approved by OSHA. However, the CNP REDON protocol includes only three test exercises followed by two redonings of the respirator instead of the eight test exercises and one respirator redoning required by the previously approved CNP protocol. The three test exercises, listed in order of administration, are normal breathing, bending over, and head shaking. In the CNP REDON protocol, as in the CNP protocol, the test subject must be trained to hold

his or her breath for at least 10 seconds prior to administering the test exercises. The test subject must don the test respirator without any assistance from the test administrator who is conducting the fit test. The respirator must not be adjusted once the fit-test exercises begin. Any adjustment voids the test, and the test subject must repeat the fit test. The procedures for administering the test exercises and for measuring respirator leakage during each test in the new CNP REDON protocol are described in the Federal Register listed above.

A minimum fit factor pass level of 100 is necessary for a half-mask respirator and minimum fit factor of at least 500 is required for a full facepiece respirator. Compared to the previously approved CNP protocol, the new CNP REDON protocol has been found to obtain at least the same overall fit factors with fewer exercises and in less time.

Since the only difference between the CNP REDON protocol and the previously approved CNP protocol is the exercise procedure used during fit testing, the Agency has limited the regulatory text revisions to a description of the CNP REDON exercise procedure, and to refer to the previously approved CNP protocol described in paragraphs (a) and (c) of Part I.C.4 for information on CNP fit test requirements and the CNP test instrument.

In addition to amending the Respiratory Protection Standard to include the new CNP REDON protocol, several editorial and non-substantive technical revisions to the standard associated with the CNP REDON protocol and the previously approved CNP protocol were also made. The CNP instrument manufacturer was changed from "Dynatech Nevada" to "Occupational Health Dynamics" of Birmingham, Alabama to identify the current manufacturer of this instrument. Also, under the CNP fit-test requirements in paragraph (a)(5) of Part I.C.4, the breath-hold requirement was changed from 20 seconds to 10 seconds. Under paragraph (a)(6), language was added prohibiting respirator adjustments once the fit-test exercises begin. A revision to paragraph (c)(1) of the CNP protocol was made to include screen tracing, currently provided on the CNP test instrument, as a visual warning device to detect participants' failure to hold their breath for the required 10-second period when measuring respirator fit. While using the screen tracing for this purpose was not part of the previously approved CNP protocol, the Agency believed that such a visual warning device would be a useful adjunct in measuring respirator fit under both the previously approved CNP protocol and the new CNP REDON protocol.

CONN-OSHA staff at (860) 263-6900 may answer questions regarding the CNP REDON fit-testing protocol or other aspects of the Respiratory Protection Standard.

Sharp Update...

Infoshred, LLC, a South Windsor-based employer specializing in confidential information destruction and record storage, has earned a renewal of its Safety and Health Achievement Recognition Program (SHARP) certification from the Connecticut Department of Labor Division of Occupational Safety & Health (CONN-OSHA) and the U.S. Department of Labor.

This distinction, the highest given by CONN-OSHA, was awarded in recognition of the employers' demonstrated excellence in establishing and maintaining health and safety guidelines in the workplace. Infoshred, LLC was given their initial SHARP award in January 2004. This SHARP renewal removes them from the U.S. Department of Labor OSHA general schedule inspection list for one year.



For additional information about the SHARP Program contact Consultation Program Manager, Kenneth Tucker, at (860) 263-6929 or visit the CONN-OSHA web site, www.ctdol.state.ct.us/osha/sharp_intro.html.

Hazard Corner...

SLING SAFETY on CONSTRUCTION SITES

By: Aaron Thompson, Safety Compliance Officer

There was an accident on a construction site. It occurred at a 75-car parking lot where a construction project was under way. This project consisted of clearing out a vacant lot and installing pre-cast concrete dry wells for drainage. These wells measured 8 feet in diameter by 6 feet in height and weighed 7,550 pounds.

At approximately 12:53 p.m., 2 employees and the construction site supervisor were rigging a backhoe excavator with ½ inch chain slings to lift one of the dry wells. The construction site supervisor ran the chain slings through an opening approximately 8 inches wide and located approximately 18 inches down from the top edge of the pre-cast concrete dry well. While rigging the load, the construction site supervisor was assisted by one employee. After the load was securely attached to the bucket on the backhoe, a test lift of the load was performed. During the test lift, the site supervisor was not comfortable with the rigging of the chain slings on the load. He felt that the chain slings were creating too much pressure on the top edges of the pre-cast concrete dry well.

Most Frequently Violated Standards *cont...*

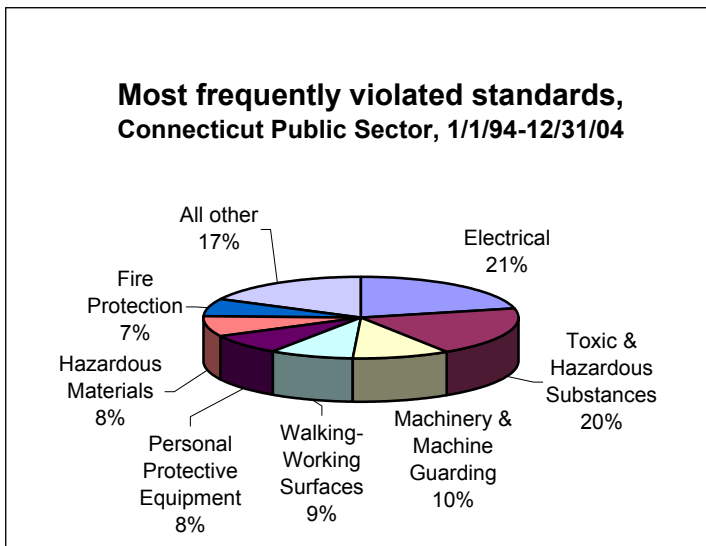
To relieve the pressure on the edges of the pre-cast concrete dry well, the construction site supervisor decided to use an old street signpost as a spreader bar between the two chain slings.

The old street signpost was approximately 2 ¾ inches in diameter and was cut to a length of approximately 8 feet, 3 inches long. It was notched on both ends so that the ½ inch chain slings would keep the old street signpost in place. Once everything was ready, the construction site supervisor gave the “ok” to the operator of the backhoe excavator to test lift the load again. The operator lifted the pre-cast concrete dry well approximately 3 to 6 inches from the ground. The employee, who was assisting the construction site supervisor rig the load, noticed that the signpost was twisting. According to the construction site supervisor, before he could react to this situation, the signpost gave way and became a flying projectile. It traveled past the head of the construction site supervisor and struck the employee who was standing approximately 12 to 13 feet away in the chest.

The employee was taken by ambulance to the hospital and admitted in stable condition. He was suffering from pains to the sternum and a possible collapsed lung due to his injury. This easily could have resulted in a fatality.

Sling safety is key before, during, and after each use. Inspections of slings and certain manufactured components that can be used with slings, such as spreader bars, should be performed to ensure that there are no cracks, stretching, twisting, nicks or rust that may interfere with the safe use of this equipment. Employers should ensure that if their employees are using slings, a sling inspection program is put into place and proper employee training in the use of such equipment is performed prior to use.

Graph 1



Subpart	Violations
Electrical	1732
Toxic & Hazardous Substances	1600
Machinery & Machine Guarding	801
Walking-Working Surfaces	701
Personal Protective Equipment	673
Hazardous Materials	640
Fire Protection	584
All other	1419

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www.ctdol.state.ct.us/osha/osha.htm