OSHA Regulations, Guidance and Employer Support Programs to Further Safety and Health in Laboratories

Thomas A. Nerad, MPH, PhD
Director, Office of Biological Hazards
OSHA Directorate of Standards & Guidance
Nerad.Thomas@dol.gov
Office: 202-693-2046

ChABSA
May 16, 2018

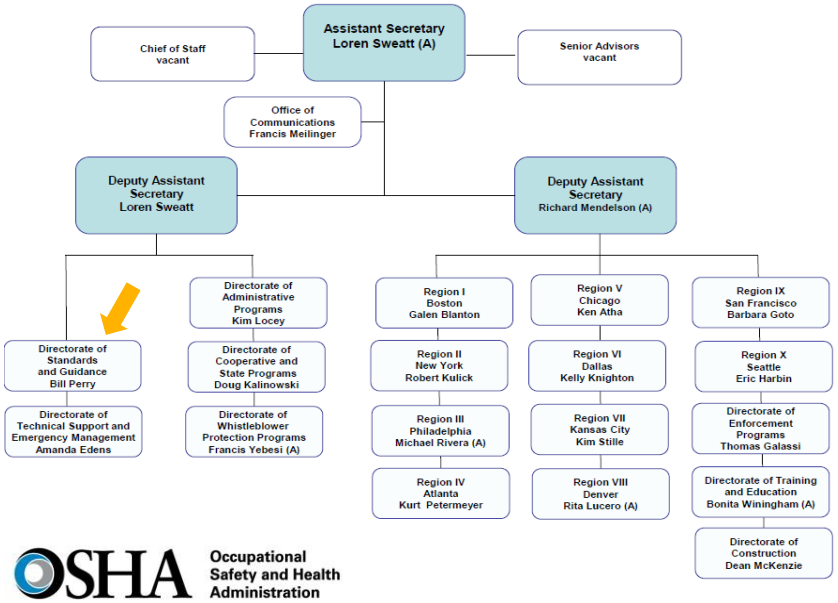
OSHA Occupational Safety and Health Administration

OSHA's Mission

"… to assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance."

OSHA Occupational Safety and Health Administration

OSHA Organizational Chart



OSHA Occupational Safety and Health Administration

3

OSHA Regulations Applicable to Labs

- **OSHA Bloodborne Pathogens standard (1910.1030) promulgated in 1991.**
- **Needlestick Prevention Act (2000).**
- **OSHA TB proposal (1997) / withdrawal (2003).**
- **Other OSHA Standards that may apply:**
  - **1910.132 – Personal Protective Equipment**
  - **1910.133 – Eye and Face Protection**
  - **1910.134 – Respiratory Protection**
  - **1910.138 – Hand Protection**
  - **1910.145 – Accident Prevention Signs & Tags**

OSHA Occupational Safety and Health Administration

4

OSHA Regulations Applicable to Labs

- **Other OSHA Standards that may apply:**
  - **1910.1200 – Hazard Communication**
  - **1910.1048 – Formaldehyde Standard**
  - **1910.1096 – Ionizing Radiation Standard**
  - **1910.1405 – Occupational Exposure to Hazardous Chemicals in Laboratories**
- **OSH Act – Section 5(a)(1) the General Duty Clause.**

OSHA Occupational Safety and Health Administration

5

Definitions

- **Hazard:** A condition or a set of circumstances that present a potential for harm. Hazards are divided into two broad categories:
  - Health hazards (cause occupational illnesses)
  - Safety hazards (cause physical harm - injuries)
- **Occupational Exposure:** Exposure which is or should be reasonably anticipated, to a hazard (e.g., an infectious agent) during the performance of a worker's duties.

OSHA Occupational Safety and Health Administration

6

Horizontal versus Vertical Standards

- **Horizontal Standard** – a standard that applies to any employer in any industry where workers have occupational exposure to the hazard. Examples of horizontal standards are the Bloodborne Pathogens standard; the PPE standards; the Hazard Communications standard. Most standards are horizontal.

- **Vertical Standard** - a standard that applies only to an employer in a particular industry where workers have occupational exposure to the hazard. Examples of a vertical standard would be the Infectious Diseases (ID) standard that is being developed. The ID standard rule would focus on the healthcare and associated industries. Additional examples of vertical standards would be those that apply to the Longshoring or Construction industries.

OSHA Occupational Safety and Health Administration

Performance versus Specification Standards

Performance-based standards – Standards that give the employer the latitude to determine which specific methods to use to mitigate employee exposures to hazards. Example: The BBP standard is performance based and, as such, the employer has the latitude to determine which PPE best suits the workplace environment and the anticipated occupational exposure. Most standards are performance-based.

Specification standards – Standards that restrict the employer to use specific methods to mitigate employee exposures to hazards or to reduce a hazard to a specific level. Many chemical standards are specification standards; they specify a permissible exposure limit (PEL).

OSHA Occupational Safety and Health Administration

8

OSHA Standards Most Cited for Violations in Labs 01/01/2011 – 05/01/2018

- 29 CFR 1910.1030 - Bloodborne Pathogens
- 29 CFR 1910.1200 - Hazard Communication
- 29 CFR 1910.1450 - Occupational Exposure to Hazardous Chemicals in Laboratories (Laboratory Standard)
- 9 CFR 1910.134 - Respiratory Protection
- 29 CFR 1910.1048 – Formaldehyde
- 29 CFR 1910.132 - PPE - General Requirements
- 29 CFR 1910.133 - PPE - Eye and Face Protection
- 29 CFR 1910.138 - PPE - Hand Protection

OSHA Occupational Safety and Health Administration

9

BBP Standard 1910.1030 - Most Cited Paragraphs of Standard - 01/01/2011 – 05/01/2018

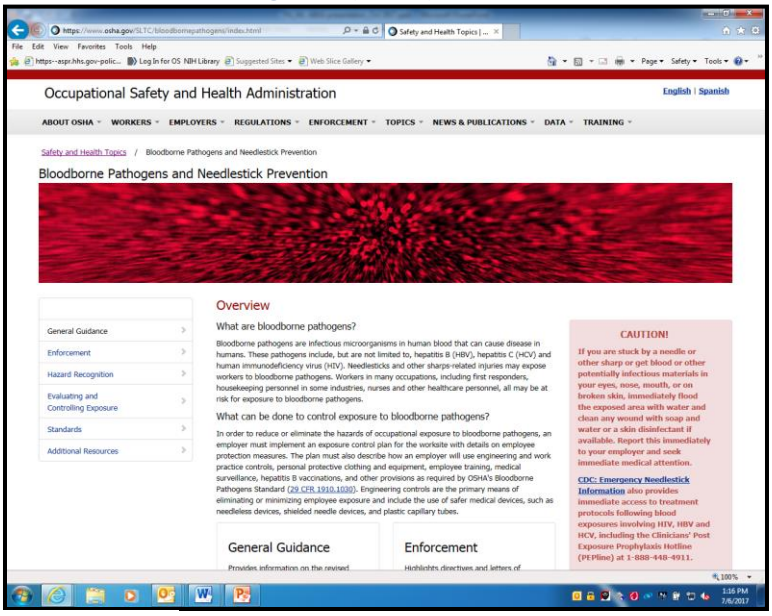
Paragraph of standard most cited:

- (c) Exposure control plan
- (g) Communication of hazards to employees
- (d) Methods of compliance
- (f) Hepatitis B vaccination and post-exposure evaluation and follow-up
- (h) Recordkeeping

OSHA Occupational Safety and Health Administration

10

Bloodborne Pathogens (BBP) Standard – 1910.1030



OSHA Occupational Safety and Health Administration

https://www.osha.gov/SLTC/bloodbornepathogens/index.html

11

Hazard Communication Standard 1910.1200 - Most Cited Paragraphs of Standard 01/01/2011 – 05/01/2018

Paragraph of standard most cited:

- ❑ **(h) Employee information and training**
- ❑ **(e) Written hazard communication program**
- ❑ **(f) Labels and other forms of warning**
- ❑ **(g) Safety data sheets**

OSHA Occupational Safety and Health Administration

12

Hazard Communication Standard – 1910.1200

OSHA Occupational Safety and Health Administration

https://www.osha.gov/dsg/hazcom/index.html

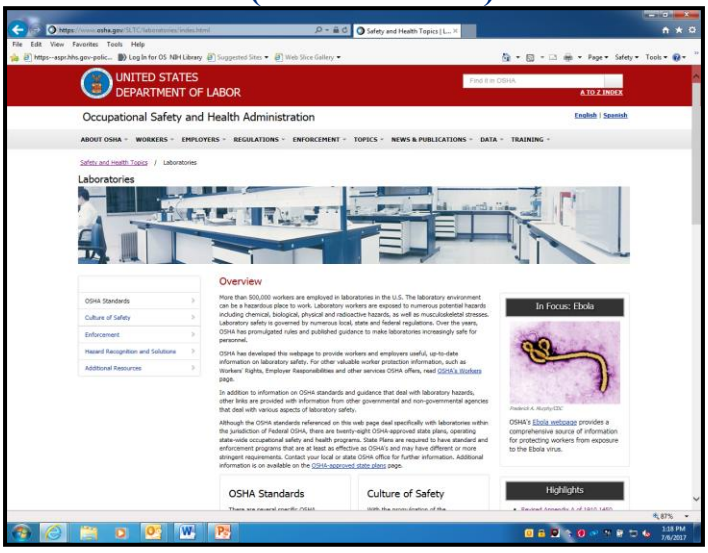
Lab Standard 1910.1450 - Most Cited Paragraphs of Standard 01/01/2011 – 05/01/2018

Paragraph of standard most cited:

- ❑ **(e) Chemical hygiene plan**
- ❑ **(f) Employee information and training**
- ❑ **(d) Employee exposure determination**
- ❑ **(g) Medical consultation and medical examination**

OSHA Occupational Safety and Health Administration

Occupational Exposure to Hazardous Chemicals in Laboratories (Lab Standard) – 1910.1450



OSHA Occupational Safety and Health Administration

https://www.osha.gov/SLTC/laboratories/index.html

15

Respiratory Protection Standard 1910.134 - Most Cited Paragraphs of Standard 01/01/2011 – 05/01/2018

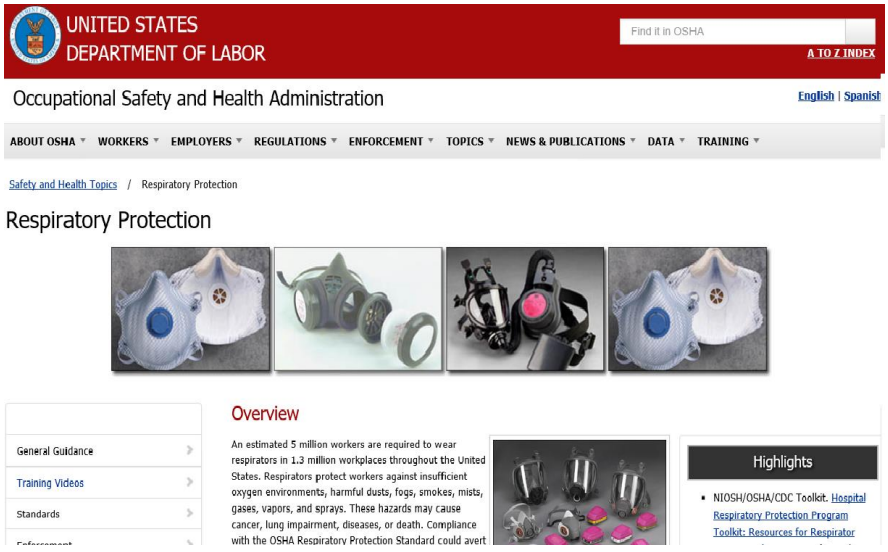
Paragraph of standard most cited:

- ❑ **(c) Respiratory protection program**
- ❑ **(e) Medical evaluation**
- ❑ **(f) Fit testing**
- ❑ **(k) Training and information**

OSHA Occupational Safety and Health Administration

16

Respiratory Protection Standard – 1910.134

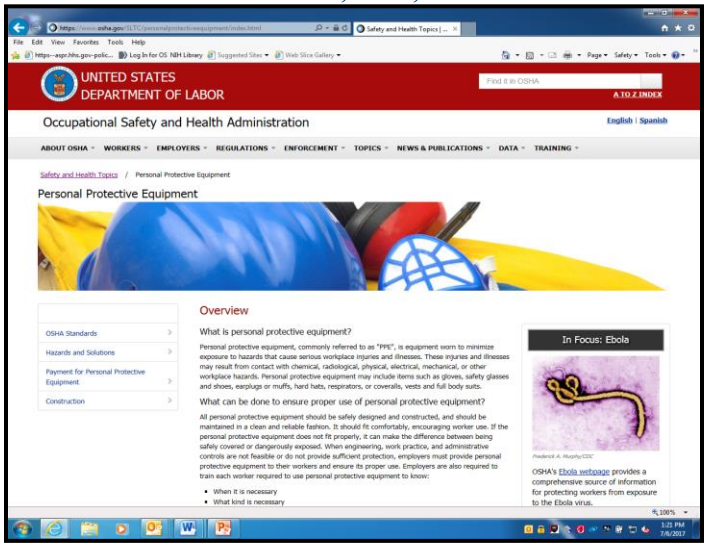


OSHA Occupational Safety and Health Administration

https://www.osha.gov/SLTC/respiratoryprotection/index.html

17

Personal Protective Equipment (PPE) Standards – 1910.132, .133, .138

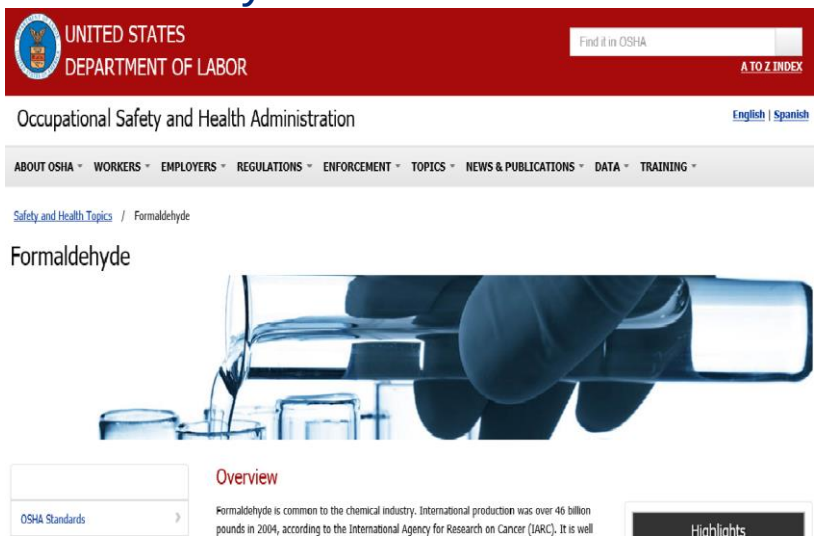


https://www.osha.gov/SLTC/personalprotectiveequipment/index.html

18

OSHA Occupational Safety and Health Administration

Formaldehyde Standard – 1910.1048



OSHA Occupational Safety and Health Administration

https://www.osha.gov/SLTC/formaldehyde/index.html

19

OSHA Recordkeeping Requirements

Employers with 10 or less employees and those within certain NAICS codes are not required to keep OSHA injury and illness records. Examples of NAICS codes exempted:

NAICS 5417 - Scientific Research and Development Services
NAICS 6113 - Colleges, Universities, and Professional Schools
NAICS 6215 - Medical and Diagnostic Laboratories

As of January 1, 2015, however, all employers must report:

1. All work-related fatalities within 8 hours.
2. All work-related in-patient hospitalizations, all amputations and all losses of an eye within 24 hours.

OSHA Occupational Safety and Health Administration

20

Recordkeeping Rule

OSHA Occupational Safety and Health Administration

https://www.osha.gov/recordkeeping2014/index.html

OSHA Guidance for Laboratory Safety

- **2011 OSHA Guidance Document (https://www.osha.gov/Publications/laboratory/OSHA3404laboratory-safety-guidance.pdf) includes information on:**
  - **Chemical Hazards**
  - **Biological Hazards**
  - **Physical Hazards**
  - **General Safety Hazards**

OSHA Occupational Safety and Health Administration

Other Federal Regulations and Guidance that Pertain to Labs

- Guidance: Biosafety in Microbiological and Biomedical Laboratories (BMBL); NIH Guidelines
- Regulations: Biological Select Agents and Toxins (BSAT)
- Funding Requirements: NIH, DOD, and Other Federal Agencies through the National Policy Requirements Matrix (March 2017 Final Rule)

OSHA Occupational Safety and Health Administration

NIH Grants Policy Statement
4.1.12 Health and Safety Regulations & Guidelines

"Recipients are responsible for …. establishing and implementing necessary measures to minimize their employees' risk of injury or illness in activities related to NIH grants. In addition to applicable Federal, State, and local laws and regulations, the following regulations must be followed when developing and implementing health and safety operating procedures and practices for both personnel and facilities:"

- **29 CFR 1910.1030, Bloodborne Pathogens;**
- **29 CFR 1910.1450, Occupational Exposure to Hazardous Chemicals in Laboratories; and**
- **Other applicable OSHA Occupational and Health Standards included in 29 CFR 1910.**

Regulations available at http://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1910.

OSHA Occupational Safety and Health Administration

2017 Final Rule: Standardized Terms and Conditions for Federally Funded Research

- **NIH and DOD have specific language in their research grant and contract agreements that require compliance with OSHA regulations in order to receive funds.**
- **NSF Final Notice of Research Terms and Conditions (82 FR 13660) - standardized terms and conditions for federal research grants for many federal funding agencies, including:**
  - **NIH**
  - **NSF**
  - **USDA National Institute of Food and Agriculture (USDA/NIFA)**
  - **EPA**
  - **NASA**
  - **DOE**
  - **DHS**
- **Core requirements in the updated National Policy Requirements Matrix (Appendix C) specifically cites compliance with OSHA regulations as a core government-wide requirement for receiving federal research funds.**

OSHA Occupational Safety and Health Administration

Standard Terms & Conditions for Federal Research Grants

One of the core requirements in the updated National Policy Requirements Matrix (Appendix C) of the new NSF rule

Statutory/Regulation/and Executive Based Requirements	Used For:			Requirement(s) that should be noted by the recipient
	Type of Award	Type of Recipient	Specific Situation	
d) Health & Safety Guidelines				
By signing the agreement or accepting funds under this agreement, the recipient assures it will comply with the following				
1. **Applicable OSHA Standards in Laboratories**	**All**	**All**	**Research involving use of hazardous chemicals or bloodborne pathogens**	**29 CFR 1910.1030 Bloodborne Pathogens** **29 CFR 1910.1450 Occupational Exposure to Hazardous Chemicals in Laboratories**

OSHA Occupational Safety and Health Administration

OSHA State Plans

Twenty-eight states and territories operate their own occupational safety and health State Plans approved by OSHA and may have different and/or additional requirements. A list of State Plans is available at: http://www.osha.gov/dcsp/osp/.

Some State Plans have additional standards that may apply to laboratories, such as:

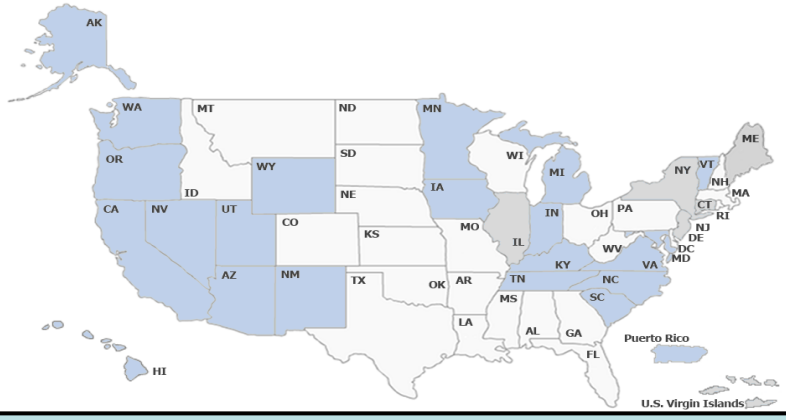
The California OSHA Aerosol Transmissible Diseases Standard promulgated in 2009.

Laboratories operating within State Plans are still required to follow state-specific regulations that are applicable to work within the laboratory.

OSHA Occupational Safety and Health Administration

27

OSHA-Approved State Plans



- **Twenty-six states, Puerto Rico, and the Virgin Islands have OSHA-approved State Plans.**
- **Twenty-two State Plans (21 states and one U.S. territory) cover both private and state and local government workplaces (including laboratories). [Blue]**
- **The remaining six State Plans (five states and one U.S. territory) cover state and local government workplaces (including laboratories) only. [Gray]**

OSHA Occupational Safety and Health Administration

28

States That Fall Under Federal OSHA Jurisdiction

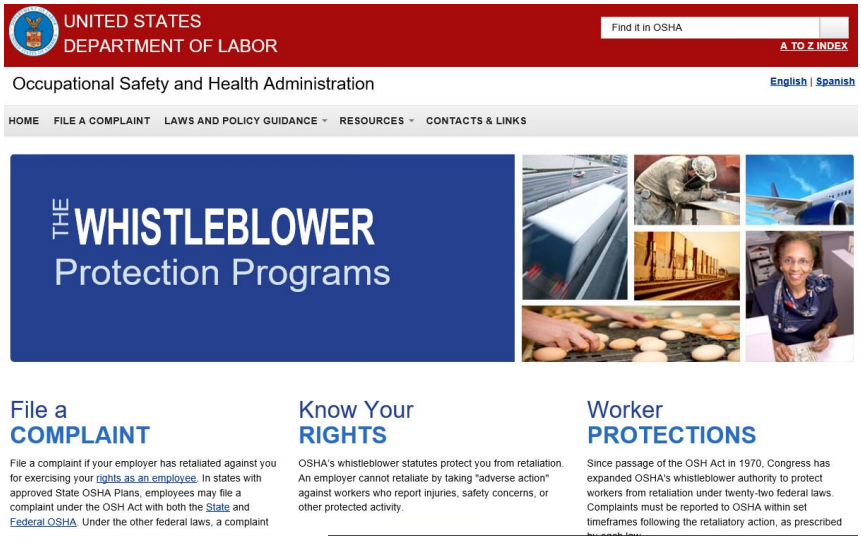
Twenty-four states operate under federal OSHA oversight.

- State and local government laboratories **do not have OSH Act protections except in the state plan states.**
- All state and local government laboratories **must comply with state and local regulations that are applicable to laboratories**.
- **Private laboratories** have OSH Act protections in all states and territories.

OSHA Occupational Safety and Health Administration

29

Whistleblower Protection Programs



OSHA Occupational Safety and Health Administration

https://www.whistleblowers.gov/

30

OSHA Safe & Sound Campaign

- In 2017, OSHA initiated the Safe and Sound Campaign.
- Basic premise: Making workplaces safe is sound business.
- Nationwide campaign raises awareness and understanding of the value of safety and health programs that include management, worker participation, and a systematic approach to finding and fixing hazards in workplaces.
- Successful safety and health programs can proactively identify and manage workplace hazards before they cause injury or illness, improving sustainability and the financial bottom line.

OSHA Occupational Safety and Health Administration

31

Safe and Sound Campaign

OSHA Occupational Safety and Health Administration

https://www.osha.gov/safeandsound/

32

Safe and sound week

OSHA Occupational Safety and Health Administration

https://www.osha.gov/safeandsoundweek/index.html

33

Safe & Sound Lab Partners

ABSA INTERNATIONAL The Association for Biosafety and Biosecurity

APHL ASSOCIATION OF PUBLIC HEALTH LABORATORIES

LSi 40 YEARS 1976 2016

OSHA Occupational Safety and Health Administration

34

Tier I Fact Sheet for ABSA

SHOW YOUR COMMITMENT TO SAFETY

ABSA International is a proud Partner of the national Safe + Sound Campaign. The Safe + Sound Campaign encourages every workplace in the U.S. to have a safety and health program, a proactive approach to identifying and managing workplace hazards before they cause injury or illness.

Successful programs include management leadership, worker participation, and a systematic process for finding and fixing hazards.

CORE ELEMENTS OF SAFETY AND HEALTH PROGRAMS		
1. Management Leadership	2. Worker Participation	3. Finding & Fixing Hazards

OSHA Occupational Safety and Health Administration

35

OSHA Voluntary Protection Program

- ❑ VPP recognizes employers with effective safety and health programs
- ❑ Management, Labor and OSHA work together in cooperative, proactive development of programs
- ❑ Employer submits application to OSHA and undergoes rigorous onsite evaluation
- ❑ Re-evaluation of program every 3-5 years
- ❑ VPP participants exempt from OSHA programmed inspections while maintaining VPP status

OSHA Occupational Safety and Health Administration

36

OSHA Voluntary Protection Program

OSHA Occupational Safety and Health Administration

https://www.osha.gov/dcsp/vpp/index.html

37

OSHA Safety and Health Achievement Recognition Program (SHARP)

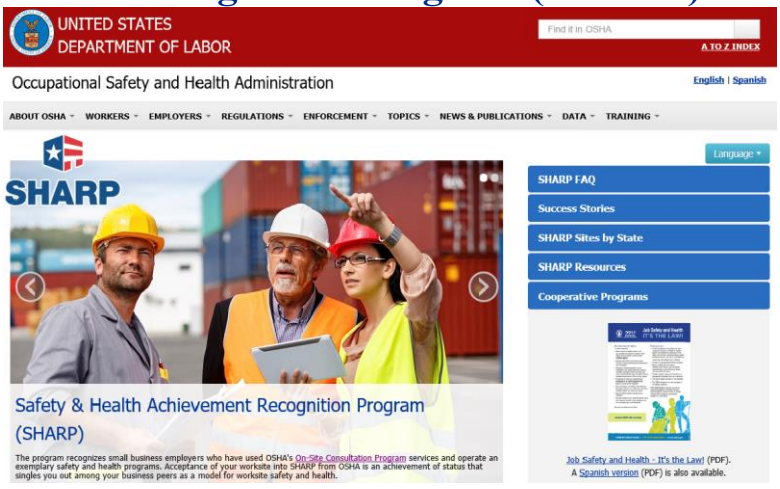
- ❑ **Recognizes excellence in small business' safety and health programs**
- ❑ **Recognizes small business employers who have used OSHA's On-site Consultation Program* services and who operate an exemplary injury and illness prevention program.**

  * **OSHA's On-site Consultation Program offers free and confidential safety and occupational health advice to small and medium-sized businesses in all states across the country with priority given to high-hazard worksites.**

OSHA Occupational Safety and Health Administration

38

OSHA Safety and Health Achievement Recognition Program (SHARP)



https://www.osha.gov/dcsp/smallbusiness/sharp.html

OSHA Occupational Safety and Health Administration

39

On-Site Consultation

OSHA Occupational Safety and Health Administration

/w.osha.gov/dcsp/smallbusiness/consult.html

40

Future Directions?

- Development of a Laboratory Safety and Health Topics Page
- Development of an **Occupational Exposure to Biological Hazards in Laboratories standard** to supplement the current lab standard (1910.1450)

OSHA Occupational Safety and Health Administration

41

Questions?

OSHA Occupational Safety and Health Administration

42

Occupational Safety and Health Administration

43