



#### **TAKE FIVE for Safety-**Injury Prevention and Regulatory Requirements

Frank Craner

September 9, 2025









@BrookhavenLab

# Two Related Needs Associated with Safety

- Safety and Health of Workers
  - Preventing Injuries/Accidents/Events
  - Understanding and Managing Risk
  - Graded Approach
  - Organizational Learning and Improvement

- Compliance with Regulations and Standards
  - DOE Orders and Regulations
  - OSHA Regulations
  - Consensus Standards (i.e., NFPA, ANSI)



# Liberty Mutual Insurance Workplace Safety Index





#### **Cost of Workplace Injuries**

- Liberty Mutual's Workplace Safety Indices estimates the top ten causes of the most serious workplace injuries those causing an employee to miss more than five days of work — and ranks them by their direct costs of medical and lost-wage payments.
- According to the 2025 Index, U.S. businesses spend more than \$1 billion per week on workplace injuries, for a total of more than \$58 billion per year.
- The top 10 causes cost U.S. businesses \$50.87 billion per year or 86.55% of total.



### The top 10 most costly causes of injury and their direct costs to U.S. businesses

Cause	Cost (billions)	Percentage
1. Overexertion involving outside sources	\$13.70	23.3%
2. Falls on same level	\$10.52	17.9%
3. Struck by object or equipment	\$5.81	9.9%
4. Falls to lower level	\$5.78	9.8%
5. Other exertions or bodily reactions	\$3.90	6.6%
6. Roadway incidents involving motorized land vehicles	\$2.84	4.8%
7. Slip or trip without fall	\$2.60	4.4%
8. Caught in or compressed by equipment or objects	\$2.16	3.7%
9. Repetitive motions involving microtasks	\$1.83	3.1%
10.Struck against object or equipment	\$1.73	2.9%



## The top 10 Most Frequently Cited Standards by OSHA in Fiscal Year 2024

- 1. Fall Protection, general requirements (<u>29 CFR 1926.501</u>)
- 2. Hazard Communication, general industry (<u>29 CFR 1910.1200</u>)
- 3. Ladders, construction (29 CFR 1926.1053)
- 4. Respiratory Protection, general industry (29 CFR 1910.134)
- 5. Control of Hazardous Energy (lockout/tagout), general industry (<u>29 CFR</u> <u>1910.147</u>)
- 6. Powered Industrial Trucks, general industry (29 CFR 1910.178)
- 7. Fall Protection Training, construction (29 CFR 1926.503)
- 8. Scaffolding, construction (29 CFR 1926.451)
- 9. Eye and Face Protection, construction (29 CFR 1926.102)
- 10. Machine Guarding, general industry (29 CFR 1910.212)



#### How do these lists correlate?

#### **Most Costly Injury types (Liberty Mutual)**

- 1 Overexertion involving outside sources
- 2. Falls on same level
- 3. Struck by object or equipment
- 4. Falls to lower level
- 5. Other exertions or bodily reactions
- 6. Roadway incidents involving motorized land vehicles
- 7. Slip or trip without fall
- 8. Caught in or compressed by equipment or objects
- 9. Repetitive motions involving microtasks
- 10.Struck against object or equipment

#### **Most Common Regulatory Violations (OSHA)**

- 1 Fall Protection, general requirements
- 2. Hazard Communication, general industry
- 3. Ladders, construction
- 4. Respiratory Protection, general industry
- 5. Control of Hazardous Energy (lockout/tagout), general industry
- 6. Powered Industrial Trucks, general industry)
- 7. Fall Protection Training, construction
- 8. Scaffolding, construction
- 9. Eye and Face Protection, construction
- 10. Machine Guarding, general industry



## Summary- Hazard Identification Includes Requirements and Risk

- Work Planning and Control
  - Hazard Identification
- SCoR Principles
  - Hazards are identified and evaluated for every task, every time.
  - A healthy respect is maintained for what can go wrong.

