

Insider's Views on Brewery Safety Programs (I2P2)

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Notes

- Injury & Illness Prevention Programs, I2P2, Safety & Health Programs and similar phrases are used interchangeably for purposes of this session
- Links embedded throughout presentation for easy access to additional information and future reference

Agenda

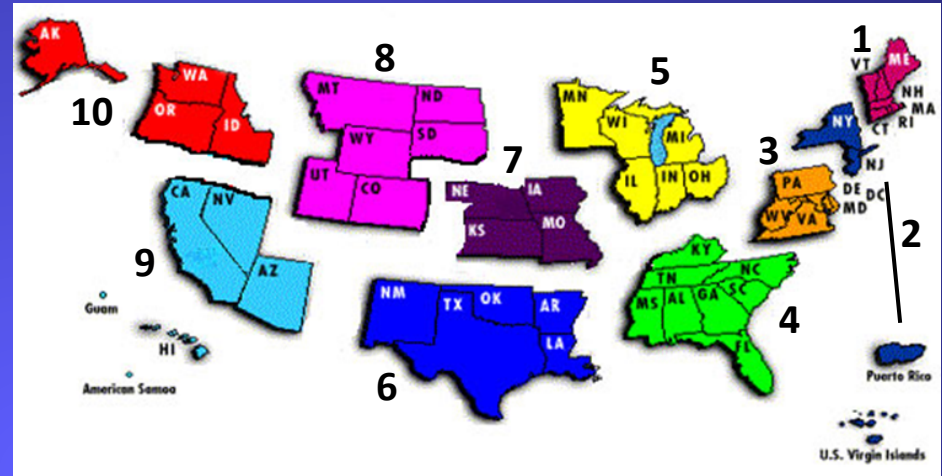
- ***OSHA Overview***
- Economics of Safety
- Overview of Safety & Health Requirements
- OSHA's View of Safety Programs
- Brewery Safety Issues
- Q&A

OSHA Background

- Enacted in 1970 with the **OSH Act**
 - Intended to follow a 'balanced approach' to achieve its Mission
 - **To assure safe and healthful working conditions for working men and women**; by authorizing enforcement of the standards developed under the Act; by assisting and encouraging the States in their efforts to assure safe and healthful working conditions; by providing for research, information, education, and training in the field of occupational safety and health; and for other purposes.
 - In short: setting and enforcing requirements, education/outreach, consultation.
 - OSHA: a regulatory agency with civil/criminal penalties
 - The OSH Act created:
 - OSHA (Federal or State Plans)
 - NIOSH (National Institute of Occupational Safety & Health)
 - OSHRC (OSH Review Commission)
- OSHA's Jurisdiction
 - Most workplaces (~8 million nationwide)
 - There are exceptions within transportation, pipelines, Ag, mining, state/local employees (in 'Federal states'), and others

OSHA: Federal & State Plans

- 10 OSHA Regions
- State vs Federal Plans
 - State Plans:
 - Managed by the state government. Must be “at least as effective as” Federal OSHA.
 - AK, AZ, CA, HI, IN, IA, KY, MD, MI, MN, NV, NM, NC, OR, PR, SC, TN, UT, VA, WA, WY
 - All other states fall under Federal OSHA



OSHA Enforcement (Ranked Order)

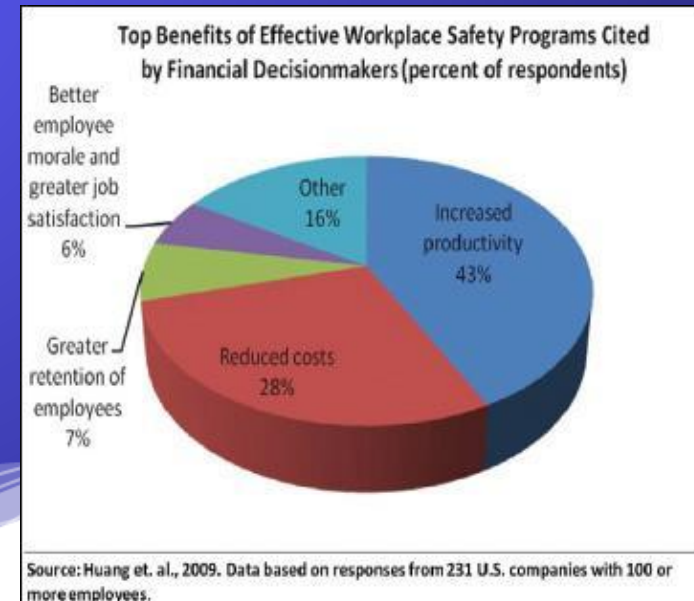
- Types of Inspections
 - Imminent Danger
 - Accident
 - Complaint*
 - Referral
 - Follow Up
 - Programmed
- Types of Violations
 - Willful
 - Criminal (Fatality)
 - Egregious
 - Repeat
 - Failure-to-Abate
 - Serious
 - Other Than Serious
- SVEP
 - Severe Violator Enforcement Program
("Bad Actor List")

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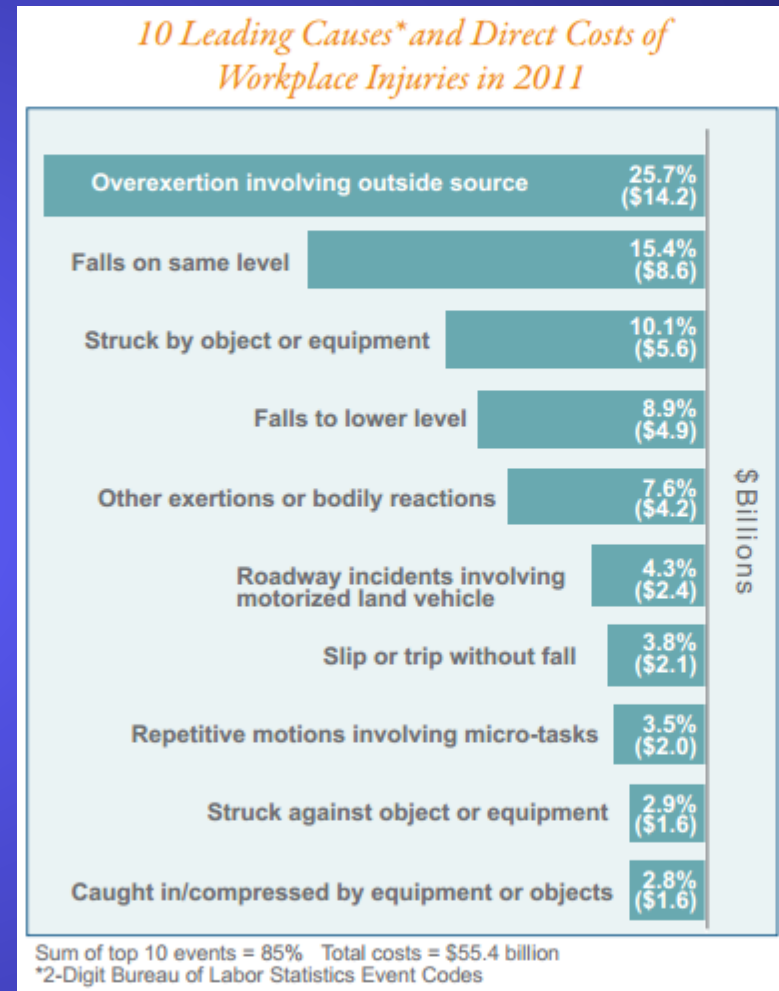
Safety Programs Impact the Bottom Line

- Wide ranging benefits
 - Reduce business risk
 - Reputation, penalties, lawsuits, product quality, etc
 - Reduce (in)direct costs
 - Workers' comp, lost productivity, turnover, etc
 - Organizational impact
 - Increase employee morale/loyalty
 - Less pain/suffering
 - Improves bottom line
 - Competitive advantage!



Direct Cost Burden from Injuries

- Injury costs: rates and severity
Average injury rate:
 - National: 3.5 cases per 100
 - Brewing: 5.5 cases per 100
- Average injury costs*:
 - Fatality: \$1,400K
 - Disabling injury: \$ 58K
 - W's Comp Avg: \$ 11K
 - OSHA recordable: \$ 8K
- Brewing industry impact
 - Typical brewer with 100 employees would have to increase sales by \$880K @5% profit margin to make up for its cost of recordable injuries



Most Common Cited OSHA

Standard		# Violations	Total Penalty	Avg Penalty
1910.212	Machine Guarding	2,773	\$ 11,261,920	\$ 4,061
1910.23	Guarding Floor & Wall Openings	1,547	\$ 5,665,117	\$ 3,662
1910.147	Lockout / Tagout	3,445	\$ 10,839,575	\$ 3,146
1910.132	Personal Protective Equipment	1,734	\$ 3,617,293	\$ 2,086
1910.178	Powered Industrial Trucks	3,203	\$ 6,652,155	\$ 2,077
1910.303	Electrical, General Requirements	2,840	\$ 5,064,365	\$ 1,783
1910.1030	Bloodborne Pathogens	1,569	\$ 2,712,367	\$ 1,729
1910.305	Electrical, Wiring Methods	3,545	\$ 5,804,070	\$ 1,637
1910.134	Respiratory Protection	3,249	\$ 3,276,808	\$ 1,009
1910.1200	Hazard Communication	5,160	\$ 4,426,206	\$ 858

Most cited General Industry standards ranked by average penalty

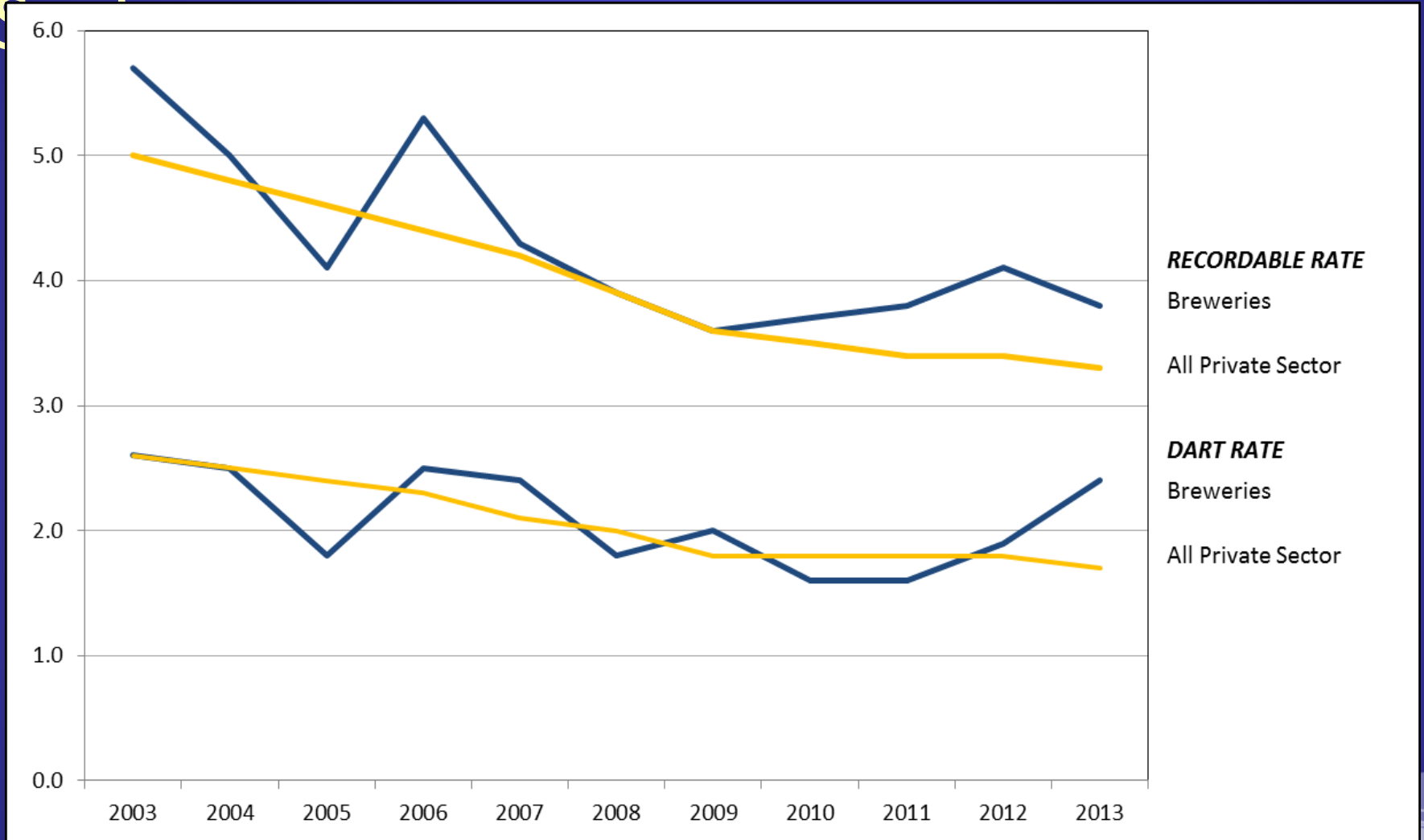
Specifically for the brewing industry:

Overall average penalty per inspection: \$12,700

Average cited violations per inspection: 3.6

Average penalty per cited violation: \$ 3,525

Injury Rates: Brewing vs Overall Private



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Where Are Safety Related

Requirements?

Many states (State Plan OSHA, Wage & Hour, etc) have dedicated safety and health related requirements:

ALABAMA ARKANSAS CALIFORNIA⁺ COLORADO CONNECTICUT⁺ DELAWARE
HAWAII[±] IDAHO INDIANA⁺ KANSAS LOUISIANA MICHIGAN⁺
MINNESOTA⁺ MISSISSIPPI MISSOURI MONTANA NEBRASKA NEVADA⁺
NEW HAMPSHIRE NEW MEXICO⁺ NEW YORK⁺ NORTH CAROLINA[±]
NORTH DAKOTA OHIO OKLAHOMA OREGON[±] PENNSYLVANIA
TENNESSEE[±] TEXAS UTAH⁺ VERMONT⁺ WASHINGTON⁺ WEST VIRGINIA
WYOMING⁺

+ OSHA State Plan

Existing Safety Program Standards

- **Required**

- Standard specific written program requirements
 - LOTO, PRCs, Hazcom, Bloodborne Pathogens
 - PPE, Respiratory Protection, Hearing Conservation
 - Grain Handling, Fall Protection, Emergency Action Plan
- State Plant specific written standards
- In some cases, OSHA citation settlement agreements

- **Optional**

- ANSI Z.10
- ISO 45001
- “Voluntary Protection Program” (VPP)
- 1989 OSHA Guidelines for S&H Programs

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OSHA's View of I2P2

- Safety programs should incorporate 6 principles
 - Management leadership
 - Employee participation
 - Hazard Identification and Assessment
 - Hazard Prevention and Control
 - Education and Training
 - Program Evaluation and Improvement
- OSHA I2P2

Injury and Illness Prevention Programs: You can make one work in your brewery!

- One size does NOT fit all!
 - Address your brewery specific issues
- Flexibility in implementing the six core elements
 - They can be adapted for an organization's size, complexity of operations, workforce characteristics
- *Partner with experts that can provide attorney-client privilege at no cost*



How Do You Know If...????



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Brewers' Compliance Issues

- *Contractor & Temp Worker Safety*
- *Permit Required Confined Space*
- *Lockout / Tagout (LOTO)*
- *Hazard Communication (Including CO2)*
- *Keg Safety*
- Forklifts / Powered Industrial Trucks
- Material Handling
- Walking & Working Surfaces
- Machine Guarding
- Grain Handling
- Combustible Dust
- Personal Protective Equipment (PPE)
- Respiratory Protection (optional vs req'd)
- Noise / Hearing Conservation
- OSHA Recordkeeping ("OSHA Logs")
- TRAINING, TRAINING, TRAINING!
- Emergency Action Plans
- Fire Extinguishers
- Fire Prevention
- Ladders
- Scissor Lifts
- Aerial Lifts & Fall Protection
- First Aid / CPR / AED
- Bloodborne Pathogens
- Laboratory Industrial Hygiene
- Ergonomics
- Compressed Gases & Flammables
- Air Quality (CO2)
- Walking/Working Surfaces
 - Slips, Trips, Falls

Temp Workers & Contractors

- Temp workers
 - If you pay & supervise them, they're your employees
 - For OSHA, these are **YOUR** employees
 - Must train & protect them accordingly
- Contractors
 - Complicated multi-employer issues come into play
 - OSHA may cite:
 - *Controlling, Creating, Exposing, and Correcting* employers
 - Opportunities for regulatory risk reduction, but reputational risks will remain - ***do your due diligence with contractors!***

Confined Spaces are a MAJOR RISK

06/21/2013 Seven workers die in Confined Space Accident at Corona Brewery

Well, my confined space blog may have slowed down a bit in the past couple months due to other ongoing work, but unfortunately the confined space fatalities have not slowed down...

In April, seven workers were killed in a tank that was undergoing maintenance and cleaning at a plant in Mexico City operated by Corona beermaker, Grupo Modelo. It is estimated that four victims were maintenance contractors and three victims were employees. There are few details available on the incident. It is believed that the deaths were due to "unspecified toxins" and that the three contractors were due to "unspecified toxins" and that the three employees were due to "unspecified toxins".

Heineken UK appears in court following worker death

By Guy Montague-Jones  06-Jul-2010

Related tags: Heineken UK

Heineken UK has been accused of breaking health and safety regulations after a worker died from carbon dioxide poisoning at one of its breweries.

At Reading Crown Court in the UK, the company pleaded not guilty to two counts under health and safety laws, according to BBC News.

The UK arm of the Dutch brewer denied employer breach of general duty to employee and contravention of health and safety regulations.

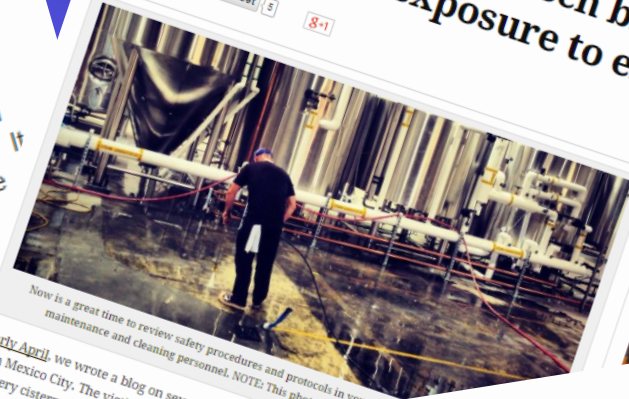
The case, which has been adjourned until 20 October for a pre-trial review, relates to the death of a worker who was overcome by carbon dioxide fumes at a Scottish Courage brewery in Reading in 2006.

Brewing hazards

According to the Health and Safety Executive (HSE), there has been an average of one fatality each year over the last decade in the UK brewing industry. Potential hazards include carbon dioxide and nitrogen poisoning in confined spaces, as well as falls into vessels and accidents.

Houston Anheuser-Busch brewery cited by OSHA for CO2 exposure to employees

by Keith Gribbins May 3, 2013



Now is a great time to review safety procedures and protocols in your maintenance and cleaning personnel. NOTE: This photo is in your...

OSHA Regional News Release

U.S. Department of Labor
Office of Public Affairs

Region 6 News Release: 14-1100-DAL
June 18, 2014

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US Department of Labor's OSHA cites Louisiana food processor for overexposing workers to dangerous levels of carbon dioxide, other hazards
Acadian Fine Foods LLC cited for 16 serious and repeat violations; fined \$121,660

CHURCH POINT, La. — Acadian Fine Foods LLC was cited by the U.S. Department of Labor's Occupational Safety and Health Administration for 16 safety and health violations, including 14 serious, one willful and one repeat violation, following a referral inspection that began in December 2013 at the Church Point processing plant. The food processor faces \$121,660 in proposed fines for failing to protect workers from overexposure to carbon dioxide, dangerous machines and other safety hazards.

"Acadian Fine Foods exposed employees to levels of carbon dioxide that were at least four times above the permissible exposure limit. This glaring neglect of worker health and safety will not be tolerated," said Dorinda Folse, OSHA's area director in Baton Rouge. "OSHA's safety and health standards must be followed to prevent worker injuries and fatalities. It is the employer's responsibility to find and fix these hazards."

Originally, OSHA's Baton Rouge Area Office conducted a complaint inspection in November 2013, which resulted in Acadian being cited with four serious violations for **electrical hazards** and unsafe forklift operation. That penalty, which the employer settled in May, was \$15,400. However, a health referral was made based on employees being exposed to unsafe levels of carbon dioxide, which to protect workers from overexposure to carbon dioxide, dangerous machines and other safety hazards.

The 14 serious violations, with a fine of \$72,380, include failing to guard moving machine parts; conduct annual inspections of **lockout/tagout** procedures, which protect workers who maintain and service machines from the machine's moving parts; properly identify respiratory hazards at the plant; include safety data sheets for carbon dioxide, sanitizer and boiler water treatment; and provide personal protective equipment. A serious violation occurs when there is substantial probability that death or serious physical harm could result from a hazard about which the employer knew or should have known.

With a penalty of \$38,500, one willful citation was issued for exposing workers to carbon dioxide levels deemed life threatening that were above the eight-hour time-weighted average of the permissible exposure limits. The employer failed to implement proper controls to reduce the carbon dioxide levels in the plant and provide workers with adequate respiratory protection. A willful violation is one committed with intentional, knowing or voluntary disregard for the law's requirements, or with plain indifference to worker safety and health.

Confined Spaces – DEADLY!!!!

- Confined Space vs Permit-Required Confined Space
 - Confined Space:
 - Not designed for continuous occupancy; Large enough to enter and work; *and* Limited entry/egress
 - Permit Required Confined Space (PRCS):
 - Confined space + additional hazards (atmospheric, mechanical, etc)
- Typical brewery confined spaces
 - Bright tanks, fermenters, mash/lauter tun
 - Grain silos, sump pits, others
- Control entry
 - Prohibit entry / reclassify space
 - Alternate entry procedures
 - Lockout / Tagout, atm monitoring, ventilation, etc
 - Signage! Training!!



Keg Safety

- Exploding keg(s)
 - Fatality in 2012 from using compressed air line to purge a plastic keg. Did not have air pressure regulator (60psi).
- Some brewers use “air guns” without pressure regulator or relief tip nozzle
 - If you have air guns, confirm upstream regulator set 30psi or less and that they have relief tip nozzle
- Periodically inspect the keg for signs of damage
 - Ommegang & Boulevard Brewing
 - Tracking codes on all kegs
 - Inspection/overhaul every certain number of turns



Avoid the Problem Altogether When Possible

Bright Tanks

- Problem:
 - Potential for exposure to high levels of CO₂ when placing stand-pipe in tanks
- Avoid the need for entry:
 - PRCS entry no longer needed by using an extension grabber to place and remove the stand-pipe



Lockout / Tagout (LOTO)

- When does LOTO apply?
 - LOTO applies whenever the employee performs service or maintenance on equipment/machinery that requires the employee to remove or bypass a guard or safety device or requires the employee to place any part of his/her body at the point of operation of the equipment/machinery
 - Ensure no hazardous energy exists on/in equipment being worked on (confined space entry, equip maint, etc)
- Written program, equipment-specific procedures, training, and annual audit/reviews are required
- Differentiate when it is cord-and-plug equipment
- Do not use E-Stop as your lockout mechanism
- Do not rely on equipment interlocks for LOTO
 - Bottling line...!!!!



Hazard Communication

- Usually #1 most commonly cited because it's 'low hanging fruit' for the compliance officer
- Make sure employees...
 - Know where the MSDSs are and have unfettered access to them
 - Understand how to read an MSDS
 - Can interpret the pictograms
 - Are aware of what hazardous chemicals are present (chemical inventory) trained on how to manage those chemicals/PPE, why they're hazardous, symptoms of exposure, reporting exposure, etc.
- Containers and labeling, including secondary containers
- Typical hazardous chemicals in a brewery
 - Caustics/corrosives, acids, flammables, paints, cleaning chemicals, etc
 - Don't forget about CO2
- Store all hazardous chemicals in proper storage cabinets or spill pallets
- Do not store incompatible chemicals in close proximity!

Best Way to Drive Safety... JSA

- Job Safety / Hazard Analysis (JSA or JHA)

(COMPANY NAME)

JOB HAZARD ANALYSIS (JHA) WORKSHEET

Job or Task Title: _____ Date: _____

Department/Location: _____

Employee(s) Observed: _____

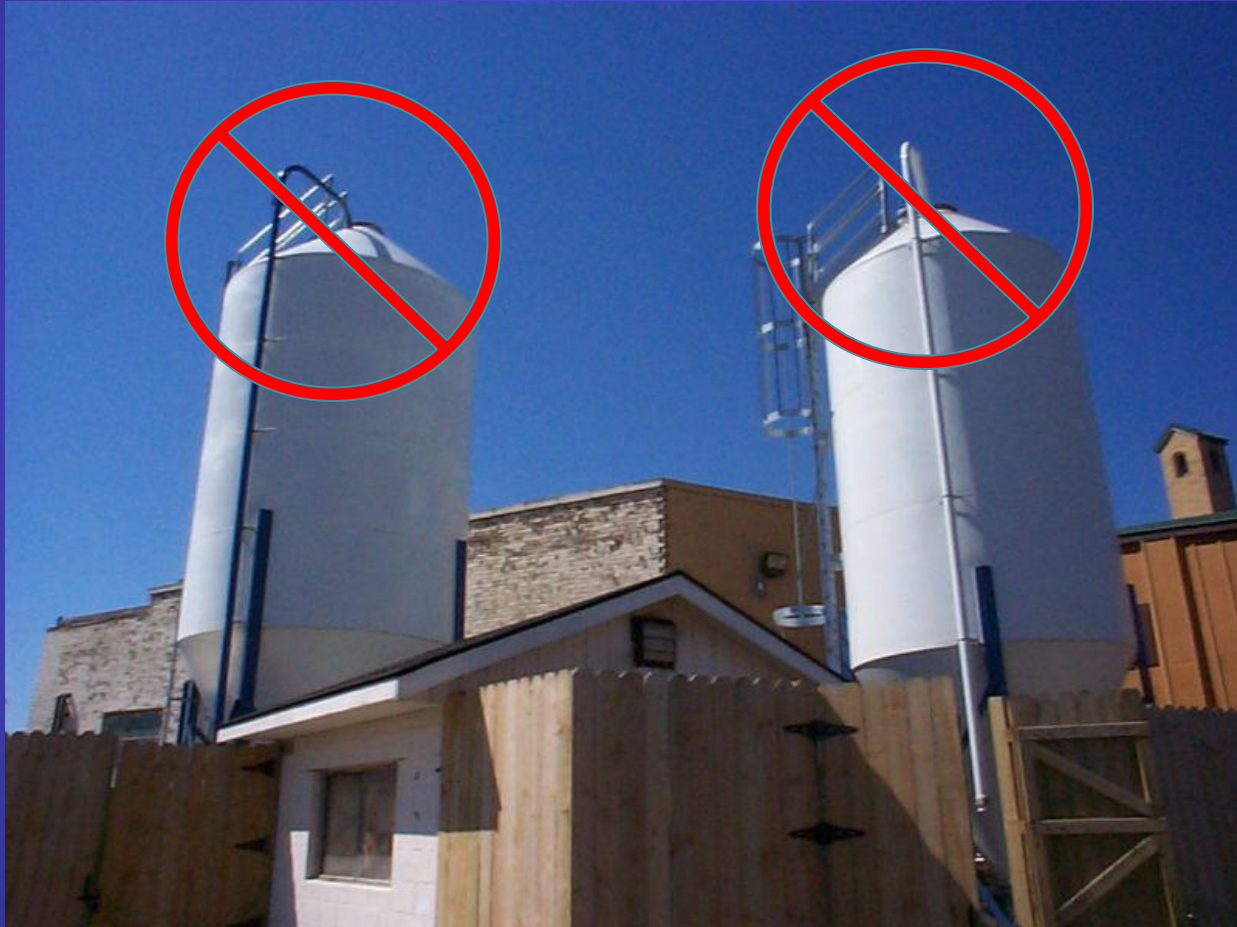
Special Training/Skills Needed: _____

JHA Completed By: _____

Job/Task Description (brief): _____

Basic Job Steps	Potential Injuries/Hazards	Required Safe Job Procedures and/or PPE

Do's & Don'ts



Do's & Don'ts



Do's & Don'ts



Do's & Don'ts



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Closing Thoughts Before Q&A

- Train...train...train your employees on safety
- Recordkeeping review (OSHA Logs)
- Ensure safety & health programs are up to date and reflect your real world operation scenarios
 - Include discipline measures in the program(s)
 - Avoid “off the shelf” safety programs to reduce OSHA risk
- Conduct 3rd party audits and risk assessments
 - Baseline / gap analysis
 - Implement corrective actions
 - Know the techniques to protect your interests
- Partner with experts that can provide attorney-client privilege at no cost

Contact Information

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Other Resources:

OSHA's I2P2 Webpage: <https://www.osha.gov/dsg/topics/safetyhealth/index.html>

OSHA's Enforcement Webpage:
<https://www.osha.gov/dep/index.html>

OSHA's Small Business Webpage: <https://www.osha.gov/dcsp/smallbusiness/index.html>