

**Advisory Committee For Construction  
Safety and Health  
July 1, 2020**

# **Construction Update**

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Director, Directorate of Construction  
Occupational Safety and Health Administration

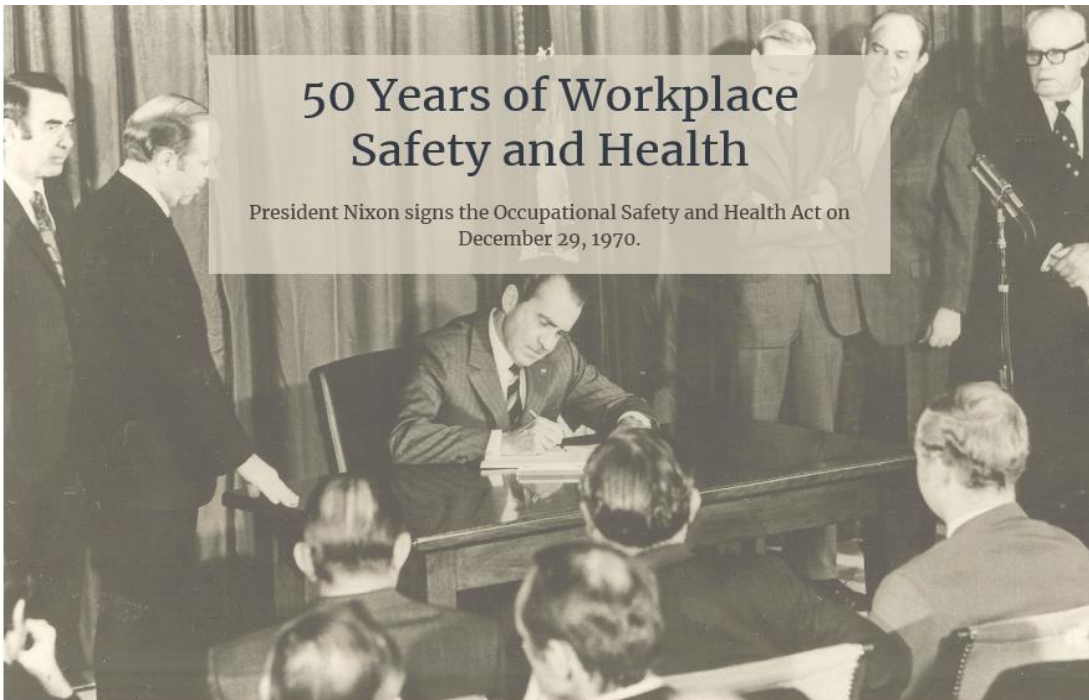


# Agenda

- OES incident investigation
- Focus Four / 2018 BLS Data
- Construction Inspection Stats
- Regulatory
- Crane Operator Qualification
- New A92 Standard
- Telecommunication Towers
- Opioids / Suicide in Construction
- Fall Stand Down
- Trenching



# OSHA at 50



- **50<sup>th</sup> anniversary of the OSH ACT**
- **Landmark legislation:**  
establishing OSHA and providing federal workplace safety and health protections.

# Directorate of Construction

- **OCS (Construction Services)**: Field enforcement assistance, Compliance Assistance, Interpretations, ACCSH
- **OCSG (Construction Standards and Guidance)**: Develop and promulgate Construction standards; Directives; Interpretations and other guidance products
- **OES (Engineering Services)**: Forensic engineering analysis, Structural and Geotechnical Assistance



# Catastrophe Incident Investigations



- Bridges
- Cranes
- Communication Towers
- Excavation and Trenching
- Formwork and Scaffolds
- Industrial Buildings (Steel, Concrete, Masonry)
- Mast Climbing Platforms
- Parking Garages
- Trusses (Steel and Timber)
- Demolitions

# December 2018: Investigation of the Collapse of a Lattice Boom Crawler Crane

- Construction of a new wastewater treatment facility
  - two employees on a scaffold
  - installing wooden roof trusses
- A lattice boom crawler crane hoisting wooden roof trusses.
- Crane boom hoist wire rope failed when lifting four half wooden roof trusses, resulting in the boom falling and striking two employees on scaffolding.
- One employee was killed, and the other was injured.





# Boom Hoist Line



# OSHA's Findings

- The cause of the incident was the *failure of the boom hoist wire rope due to fatigue*. Extensive number of wires of the exterior stands of the wire rope had fractured.
- The crane operator and the contractor's technicians *did not properly inspect the crane's boom hoist wire rope during the shift and monthly* inspections in accordance with the OSHA standard 26 CFR 1926.1413(a)(3)(ii).



# OSHA's Findings

- The contractor **failed to document its monthly inspections** of the crane and its wire ropes in accordance with OSHA standards 26 CFR 1926.1412(e)(3) and 1926.1413(b)(4)
- Metallurgical examination of the failed wire rope indicated that the extent of breaks in the wire rope due to ***fatigue failure was extensive and numerous***, and could have been easily noticed during proper shift inspection.

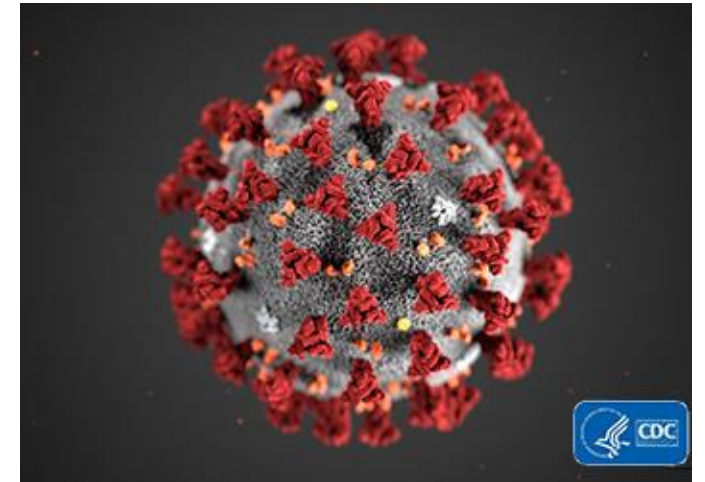
# OSHA's Findings

- The **contractor did not correct deficiencies** raised by the third party inspector during the annual inspection a few months before the incident
- The contractor was **using slings and hooks that were damaged** that should have been pulled from service



# Protecting workers from risk of exposure to COVID-19

- OSHA is coordinating closely with CDC, including NIOSH, and other federal agencies to monitor the ongoing pandemic.
- OSHA's message is clear:
  - Employers should have a plan for protecting workers and preventing further spread of disease, as well as maintaining the employer's day-to-day functions.



[www.osha.gov/coronavirus](https://www.osha.gov/coronavirus)

# Occupational exposure risks

- OSHA is closely coordinating with CDC, including NIOSH, and other agencies to monitor the ongoing pandemic.
- The risk of exposure in many workplaces likely reflects the risk to the general public in the community where the workplace is located.
- Risk increases when workers have frequent, close contact with the general public or other coworkers.



Photo: Turner Construction Company



# OSHA guidance

- OSHA has developed a variety of guidance materials for workers and employers on how to stay healthy during the pandemic.
- **OSHA.gov/coronavirus** includes information on implementing the hierarchy of controls when workers have specific exposure risks.



[www.osha.gov/coronavirus](https://www.osha.gov/coronavirus)

# Top 10 Violations in Construction



1. Fall Protection – General Requirements (1926.501)
2. Scaffolding (1926.451)
3. Ladders (1926.1053)
4. Fall Protection – Training (1926.503)
5. Eye and Face Protection (1926.102)
6. General Safety and Health Provisions (1926.20)
7. Head Protection (1926.100)
8. Specific Excavation Requirements (1926.651)
9. Aerial Lifts (1926.453)
10. Fall Protection Systems Criteria and Practices (1926.502)

# Top Ten Violations in Construction FY 2019

Standard	Total Violations	Serious Violations	Willful Violations	Repeat Violations
1926.501- <b>Fall Protection</b>	6,881	5,557	164	1,008
1926.451 - <b>Scaffolding</b>	3,169	2,885	14	158
1926.1053- <b>Ladders</b>	2,708	2,406	5	130
1926.503 - <b>Fall protection Training</b>	2,015	1,549	8	100
1926.102 - <b>Eye and Face Protection</b>	1,618	1,435	7	124
1926.20 - <b>General Safety and Health Provisions</b>	1,007	834	0	48
1926.100 - <b>Head Protection</b>	933	833	1	36
1926.651-652 - <b>Specific Excavation Requirements</b>	1,500	1,173	35	81
1926.453 - <b>Aerial Lifts</b>	783	719	3	27
1926.502 - <b>Fall Protection Systems Criteria and Practices</b>	758	653	4	24

SOURCE : OIS  
As of 1/14/20



# Construction Focus Four

The actual breakdown of the causes of fatalities on construction sites in 2018 is as follows (numbers are a percentage of the 1,008 total construction-related fatalities that occurred in 2018):

- Falls: 338 (**33.5%**);
- Struck by object: 112 (11.1%);
- Electrocutions: 86 (8.5%);
- Caught in/between: 55 (5.5%).





# Construction Fatal Fall Incidents

↓ 14%

## Fatal Fall Incidents in Construction From one level to another (323)

<u>Type of Construction</u>	<u>Number</u>	<u>Percent</u>
Roofing	77	23%
Residential Building	67	20%
Plumbing and HVAC	24	7%
Nonresidential Building	20	6%
Painting and Wall Covering	17	5%
Heavy and Civil Engineering	16	5%
Electrical	15	5%
Source: BLS 2018 CFOI Data		

# Construction Fatal Struck By Incidents

## Struck By Incidents in Construction (112)

	<u>Number</u>	<u>Percent</u>
Struck by falling object or equipment--other than powered vehicle (66)		
• Struck by object falling from vehicle or machinery--other than vehicle part	29	26%
Struck by powered vehicle--nontransport (26)		
• Struck by falling part of powered vehicle still attached	7	6%
• Struck by swinging part of powered vehicle	6	5%
• Struck or run over by rolling powered vehicle	5	4%

Source: BLS 2018 CFOI Data

# Construction Fatal Electrocution Incidents

## Electrocution Incidents in Construction (86)

		<u>Number</u>	<u>Percent</u>
Direct Exposure to electricity (49)			
• Greater than 220 volts		28	33%
• 220 volts or less		12	14%
Indirect exposure to electricity (37)			
• Greater than 220 volts		33	38%
• 220 volts or less		4	5%

Source: BLS 2018 CFOI Data

# Construction Fatal Caught in / Between Incidents

## Caught in/Between Incidents in Construction (55)

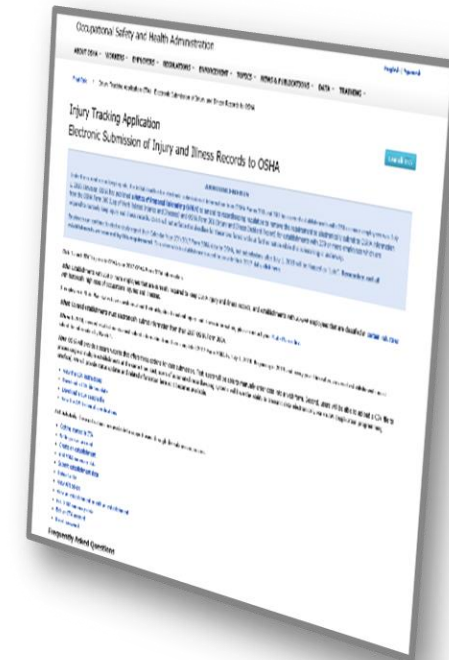
		<u>Number</u>	<u>Percent</u>
Struck, caught, or crushed in collapsing structure, equipment, or material (35)			
• Struck, caught, or crushed in other collapsing structure or equipment		19	35%
• Excavation or trenching cave-in		14	25%
Caught in or compressed by equipment or objects (20)			
• Caught in running equipment or machinery		11	20%

Source: BLS 2018 CFOI Data



# Regulatory Activities

- **Tech Corrections** – Issued in February
- **Railroad Cranes** - Final Rule Clearance
- **Crane Amendments** - NPRM Clearance
- **Communication Towers** - NPRM
- **Welding in Confined Spaces** – NPRM
- **PPE Fit in Construction** – NPRM



# Crane Operator Qualification

- Update FAQs (Agency Clearance)
- Update Small Entity Compliance Guide (Agency Clearance)
- Directive on Enforcing Operator Qualification (Agency Clearance)



# Directives

- New and updated Crane Directive for Operator Certification
- New and updated Excavation Directive
- Small Unmanned Aerial System (Drone) Directive



# New A92 Consensus Standards





# A92 Incorporation by Reference

- Letter of Interpretation: Hayden, 2001
  - Under OSHA's de minimis policy, where OSHA has adopted an earlier consensus standard, employers who are in compliance with the updated version **will not be cited for a violation of the old version as long as the new one is at least equally protective.**
  - .....the only way the OSHA standard can be changed to adopt the new version is through **rulemaking**.....Even though ANSI A92.2 has been revised, the OSHA aerial lift standard continues to require only compliance with the 1969 standard.
  - Subpart L, contains a non-mandatory appendix that lists the A92-1990 and 1993 consensus standards that are considered to provide employee protection equivalent to ANSI A92.2-1969.

# Telecommunication Tower Fatalities

- Total of 8 fatalities in 2019.
- 2 fatalities in 2020 to date.
- January 10, 2019 in Caputa, SD.
  - A 23-year-old employee was climbing a 190' self-supporting tower to perform work. The climb took place at night, with limited visibility and inadequate lighting. Company had no safety plan for hazards encountered during night work.
  - Employee was at 180' level and was in the process of descending the tower when he fell. Inadequate anchorage: oversized carabiner was hooked over a step bolt, allowing carabiner to slip off the end of the step bolt.
  - Inadequate lighting, failure to provide fall protection, failure to ensure its use.



# Telecommunication Tower Standard Development

- Closely reviewing existing consensus standards.
- Full list of potential topics for consideration can be found in SBAR panel documents (<https://www.osha.gov/doc/comtowersbrefa.html>) Includes fall protection, safe work practices, hoisting, rigging, and structural requirements.
- OSHA will continue to conduct research and reach out to stakeholders as the process continues.

# Health Issues In Construction

- **Opioids in Construction:**

- The construction industry has one of the highest injury rates when compared to other industries and opioids have commonly been prescribed to construction workers to treat the pain caused by these occupational injuries.
- Overdose deaths that occurred on the job increased by over 30% between 2015 and 2016.
- OSHA supports NIOSH, and other stakeholders in sharing ideas

# Suicide among Construction Workers

- Suicide Rates by Major Occupational Group — 17 States, 2012 and 2015
  - From 2000 to 2016, the U.S. suicide rate among working aged (16–64 years) adults increased 34% from 12.9 per 100,000 population to 17.3.
  - 2012 and 2015, **largest percentage of male suicides (15%–16% of decedents)** occurred among **Construction** and Extraction group
    - **Highest male suicide rate** (43.6 [2012] & 53.2 [2015] per 100,000).
- 102 workplace suicides in the private construction industry 2013-2017
  - 13 Construction managers
  - 21 First-line supervisors
  - 46 Construction trades workers
  - 40 Self-employed
  - 62 Wage and salary workers
  - 36 Building construction
  - 5 Heavy and civil engineering construction
  - 55 Specialty trade contractors



# Suicide Prevention In Construction

## Get help now.

If you're having trouble coping with work-related stress, talk with someone who can help.

- Call 1-800-273-8255
- Para español 1-888-628-9454
- Online chat [suicidepreventionlifeline.org/chat](https://suicidepreventionlifeline.org/chat)



# Cooperative Programs

- **On-Site Consultation Program**
  - Free safety and health advice to help small businesses identify hazards and comply with OSHA regulations
- **Voluntary Protection Program**
- **Alliances**
  - OSHA-ITA Alliance for 16 years
  - Support for OSHA Initiatives (such as Safe + Sound campaign)

SAVE THE DATE



RECOGNIZE YOUR SAFETY SUCCESSES

# National Safety Stand-Down

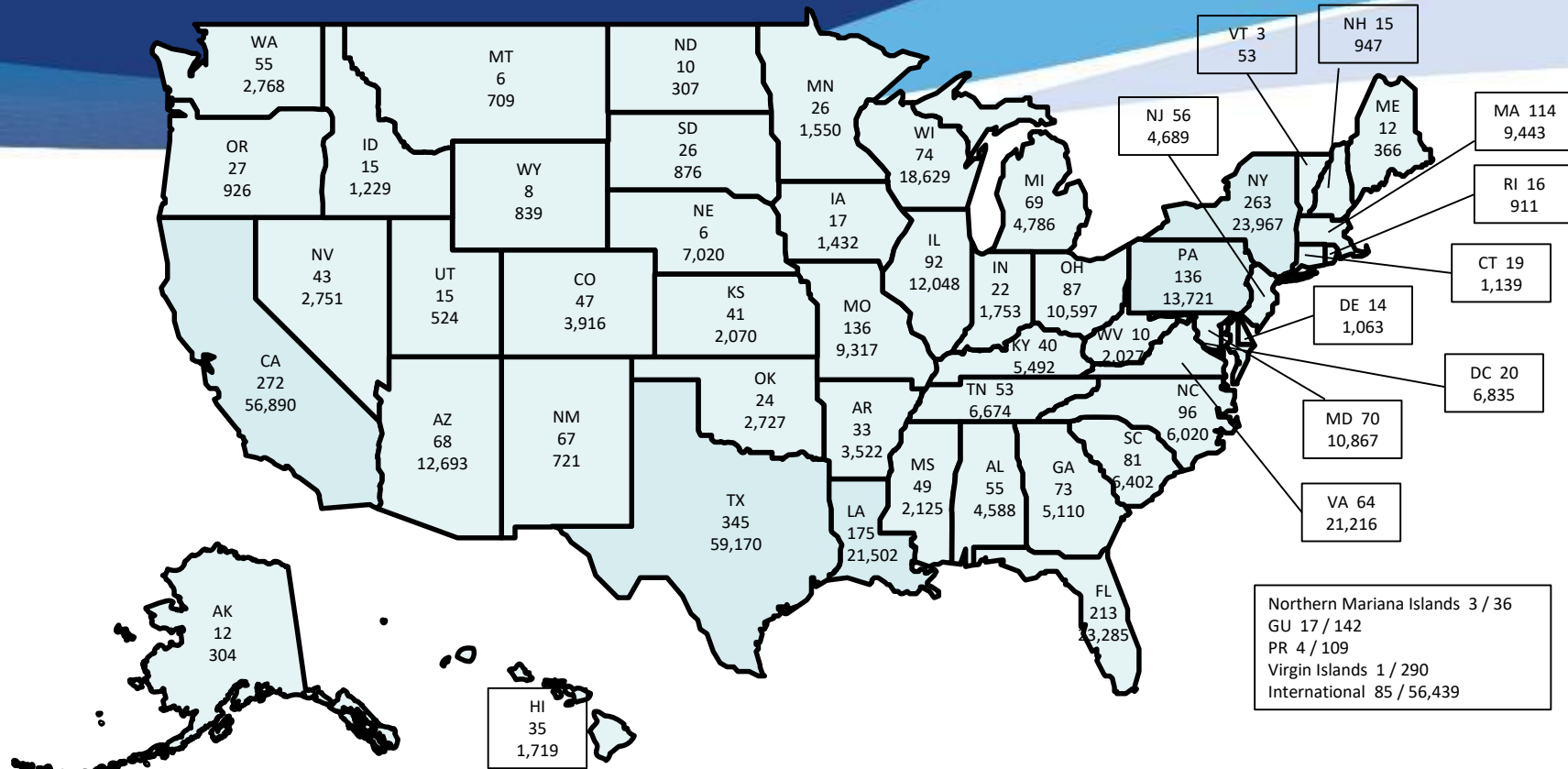
To Prevent Falls in Construction

SEPTEMBER 14 – 18, 2020



- Last year's National Fall Stand-Down, held May 4-8, 2019, was a huge success with thousands of companies – large and small – participating across the U.S. and internationally.
  - Approximately 4,000 certificates issued reaching nearly 1 million workers

# Fall Stand Down Participation





# Examples: Fall Stand-Down Events






# OSHA's Trenching Initiative



# Excavation Fatalities

- 2012 through 2014 average:  fatalities
- 2015: 25 fatalities
- 2016: 37 fatalities
- 2017: 24 fatalities
- 2018: 17 fatalities

Source: Bureau of Labor Statistics (BLS)

# Where are trenching incidents happening?

Trenching/Excavation Incidents by End Use Type of Construction				
Type of Construction	Number	Percent		
single family or duplex dwelling	29	24%		
pipeline	19	16%		
highway street road	16	13%		
commercial building	10	8%		
other heavy construction	10	8%		
sewer/water treatment plant	9	8%		
other building	8	7%		
multi-family dwelling	7	6%		
bridge	4	3%		
powerline transmission	4	3%		
excavation landfill	2	2%		
manufacturing plant	1	1%		
power plant	1	1%		
	120	100%		
Note: Out of 156 total incidents, for which 36 end use unspecified.				
Source: OSHA OIS Accident Investigation Report, FY 2013 - FY 2017				




# Agency Priority Goal



- **Worker Safety:** Reduce Trenching and Excavation Hazards
- Goal Leader: Loren Sweatt, Deputy Assistant Secretary for Occupational Safety and Health
- **Deputy Goal Leader:** Scott Ketcham, Director, Directorate of Construction
- **Goal Statement:** By September 30, 2021, increase trenching and excavation hazards abated by 12% compared to FY2017 through inspections and compliance assistance at workplaces covered by the Occupational Safety and Health Administration.

# APG FY 2019 Report

	Goal	Total
FY 2020 - 21	2619	In Progress
FY 2019 (Final)	 2572	2,710
FY 2018 (Final)		2324

As of November 11, 2019  
Source: OIS



# Top Violations in Excavation Work: FY 2019

<u>STANDARD</u>	<u>Conditions Cited</u>
<b>1926.652(a)(1)</b> - <i>Protection of employees in excavations.</i>	797
<b>1926.651(c)(2)</b> - <i>Means of egress from trench excavations.</i>	380
<b>1926.651(j)(2)</b> - <i>Protection of employees from loose rock or soil</i>	310
<b>1926.651(k)(1)</b> - Daily inspections of excavations	277
<b>1926.651(k)(2)</b> - Where the competent person finds evidence of a situation that could result in a possible cave-in	100
<b>1926.651(h)(1)</b> - <i>Protection from hazards associated with water accumulation.</i>	49

SOURCE : OIS  
As of 9/30/19

# Criminal Liability

- **Atlantic Drain Service Company**

- Owner sentenced to 2 years for manslaughter by MA jury
- For 2 employees killed in a 14 foot deep excavation without any protective system in place
- Employer was cited for 18 Willful and Serious violations of Subpart P (excavations)

- **ContractOne**

- Colorado jury indicted the owner for the death of an employee in an unprotected trench. OSHA issued 1 willful citation.

# Trenching Safety Stand-Down



June 15-19, 2020



Approximately 50,000 participants in 2019

# Preventing Trenching Incidents

- DOL's Strategic Plan identifies trenching hazards as an agency priority.
- OSHA's goal is to increase the number of corrected trenching hazards through enforcement and consultation.



Excavations  
in Construction

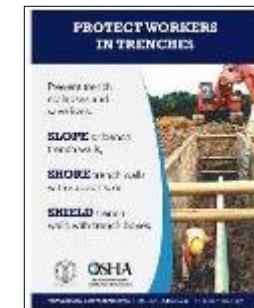
[English](#)  
[Spanish](#)



5 Things You  
Should Know  
To [Stay Safe](#)  
in a Trench



sticker



poster



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# Questions?



[www.osha.gov](http://www.osha.gov)

**DOC: 202-693-2020**

