

## **FY08 2<sup>nd</sup> Quarter Construction Contractor Safety Seminar**

**Mountain View Club, 2:00 – 4:00 PM**

**January 22, 2008 Meeting Minutes**

**Speakers:** Introduction, Agenda & Preliminary Lessons Learned: Greg Kirsch, ES&H Program Manager for FMOC, Dept. 4827, Office Phone: 845-9497, e-mail: [Gckirsc@sandia.gov](mailto:Gckirsc@sandia.gov)

Lessons Learned - Solder Splashes into Plumbing Subcontractors Eye During Pipe Installation Activity: Greg Kirsch

Lessons Learned - 4-inch Poly Gas Line Impacted during Tech Area II Fence Removal Project: Rob Maranville, ES&H Specialist, Dept. 4827, Office Phone: 845-1335, Mobile: 239-1865, e-mail: [remaran@sandia.gov](mailto:remaran@sandia.gov) and Contractor's Perspective

Lessons Learned - Electrical Subcontractor Performs Work in Bldg. 963 without Required Fall Protection: Rob Maranville and Contractor's Perspective

Lessons Learned - Removal of Beryllium Contaminated Ductwork without PPE: Greg Kirsch

Safety Observations Summary and Injuries: Greg Kirsch

Lessons Learned: Greg Kirsch

- Construction Contract Insulator Receives Shock from Exposed 120 Volt Conductor
- Exposed Energized #12 120 volt Conductors short to conduit when contacted by ceiling tile

BBS Trends & Analysis (Oct – Dec 07): William Tierney, BBS Steering Committee, Office Phone: 845-0633, Pager: 530-1343, e-mail: [wjtiern@sandia.gov](mailto:wjtiern@sandia.gov)

Local Exhaust Ventilation Units: Fred Shelly, Industrial Hygiene, Dept. 4127, Office Phone: 284-6320, Mobile: 803-8062, e-mail: [fshelly@sandia.gov](mailto:fshelly@sandia.gov)

Fall Protection/Fatalities: Pamela Sayers, Construction Safety, Dept. 4122, Office Phone: 284-4606, pager: 530-7126, e-mail: [psayers@sandia.gov](mailto:psayers@sandia.gov)

Safety Stars: John Norwalk, Construction Acceptance Manager, Dept. 4827, Office Phone: 844-2529, Mobile: 235-6547, e-mail: [jknorwa@sandia.gov](mailto:jknorwa@sandia.gov)

### **Summary**

There were 68 attendees and 21 companies represented. The sign-in sheets are included at the end of the PowerPoint presentation for more detailed information.

### **Greg Kirsch – Introduction**

Greg welcomed everyone to the Quarterly Construction Safety Seminar and did a short presentation on preliminary lessons learned from a recent event on 2-part epoxy painting task. We all need to ensure painting operations are reviewed by Industrial Hygiene prior to work. He also noted that the 01065 Spec has been updated and there are some changes on Hold Points. Another item he mentioned is to ensure SNL Engineers review anchor points for fall protection prior to work. "It's the Law" posters were handed out to all contractors. The poster is attached.

### **Lessons Learned Contractor Perspective**

There were five construction occurrences and four recordable injuries in the 1<sup>st</sup> Quarter of FY08. Greg Kirsch and Rob Maranville presented each event and the respective contractors gave their perspective and lessons learned. See the Power Point slides for detailed information.

- Injury - Solder Splashes into Plumbing Subcontractors Eye During Pipe Installation Activity
- 4-inch Poly Gas Line Impacted during Tech Area II Fence Removal Project
- Electrical Subcontractor Performs Work in Bldg. 963 without Required Fall Protection
- Removal of Beryllium Contaminated Ductwork without PPE
- Construction Contract Insulator Receives Shock from Exposed 120 Volt Conductor
- Exposed Energized #12 120 volt Conductors short to conduit when contacted by ceiling tile

### **Greg Kirsch – Safety Observations Summary and Injury Data**

Graphs were provided showing observations by OSHA 1926 Subpart and ES&H 01065 Specification categories, discipline trends, construction deficiencies and injuries for the period October - December 2007.

### **William Tierney – BBS October - December 2007 Data Review**

William presented the BBS Data summary for October – December 2007. There were a total of 237 observations during this period.

### **Fred Shelly - Local Exhaust Ventilation Units**

Fred presented a summary of how to decide on the proper local exhaust ventilation units. He included a list of recommended LEV units with the cost and website information.

### **Pamela Sayers – Fall Protection/Fatalities**

Pamela presented fatality data for 2003 & 2004 she covered the history and lessons learned from each of the nine events.

### **Closing**

Please contact Greg if you have any topics or comments for future safety seminars.

Please mark your calendars and plan to attend the next Quarterly Safety Seminars in 2008:

**Location:** Mountain View Club

**Time:** 2:00 – 4:00 PM

**Date:** April 8, 2008

July 8, 2008

October 21, 2008

Meeting minutes and the presentation will be sent via email, and it is SNL's expectation that the information will be shared with employees and subcontractors. Please be sure to encourage attendance by your subcontractors. Advance notice is provided for these seminars to allow ample time to schedule attendance at these meetings, and reminders are sent out via the *Construction News Sense* and emails. The target audience is safety officers, superintendents, and foremen.

# You Have a Right to a Safe and Healthful Workplace

## ***IT'S THE LAW!***

- ✔ You have the right to notify your employer or the local Department of Energy (DOE) office about workplace hazards, without reprisal. You may ask that your name not be used.
- ✔ You have the right to participate in the activities referenced in 10 CFR 851 "Worker Safety and Health Program," on official time.
- ✔ You have the right to access copies of DOE worker protection publications; the worker safety and health program for your workplace; and the standards, controls, and procedures that apply to your workplace.
- ✔ You have the right to have access to some accident and illness recordkeeping logs and the information in records of any workplace illness or injury that you experienced.
- ✔ You have the right to observe monitoring or measuring of hazardous agents, to receive the results of your own monitoring, and be notified when monitoring results indicate an overexposure.
- ✔ You have the right to have a representative accompany the DOE's Director for enforcement or the Director's authorized personnel during the inspection of your workplace.
- ✔ You have the right to request and receive results of inspections and accident investigations.
- ✔ You have the right to decline to perform an assigned task because of your reasonable belief that, under the circumstances, the task poses an imminent risk of death or serious physical harm to you, coupled with your reasonable belief that there is insufficient time to seek effective redress through the normal hazard reporting and abatement procedures.
- ✔ Your employer must post this notice in your workplace.



Title 10 CFR 851 requires DOE contractors to provide their workers with a safe and healthful workplace. To obtain more information about those requirements and your rights; seek advice or assistance; or report an emergency contact your supervisor, your local DOE office, or the DOE Office of Health, Safety and Security (<http://www.hss.energy.gov>). Additional inquiries or concerns may be addressed to the Employee Concerns Manager at the local DOE office at \_\_\_\_\_ (city, state, zip code).





# ***QUARTERLY CONSTRUCTION SAFETY SEMINAR***

## **SNL FACILITIES**

**January 22, 2008**

Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company,  
for the United States Department of Energy's National Nuclear Security Administration  
under contract DE-AC04-94AL85000.

# Agenda

- 2:00 PM Introduction/Preliminary Lessons Learned
- 2:05 PM Lessons Learned - Solder Splashes into Plumbing Subcontractors Eye During Pipe Installation Activity: Greg Kirsch
- 2:10 PM Lessons Learned - 4-inch Poly Gas Line Impacted during Tech Area II Fence Removal Project: Rob Maranville and Contractor's Perspective
- 2:20 PM Lessons Learned - Electrical Subcontractor Performs Work in Bldg. 963 without Required Fall Protection: Rob Maranville and Contractor's Perspective
- 2:30 PM Lessons Learned - Removal of Beryllium Contaminated Ductwork without PPE: Greg Kirsch
- 2:40PM Safety Observations Summary and Injuries: Greg Kirsch
- 2:50 PM 10 Minute Break
- 3:00 PM Lessons Learned: Greg Kirsch
- Construction Contract Insulator Receives Shock from Exposed 120 Volt Conductor
  - Exposed Energized #12 120 volt Conductors short to conduit when contacted by ceiling tile
- 3:10 PM BBS Trends & Analysis (Oct - Dec): William Tierney
- 3:20 PM Local Exhaust Ventilation Units: Fred Shelly
- 3:30 PM Fall Protection: Pamela Sayers
- 3:45 PM Safety Stars: John Norwalk
- 3:55 PM Closing: Greg Kirsch

# What's Wrong with This Picture???



# What's Wrong with This Picture???





# **Lessons Learned**

## **Solder Splashes into Plumbing Subcontractors Eye during Pipe Installation Activity**

**Contractor's Perspective**





## Description of Event

- A foreign object splashed into the left eye of a mechanical subcontractor during a soldering task. The plumber was soldering a copper fitting in a congested location in a mechanical room and utilized safety glasses during the activity. The plumber immediately rinsed out his eye and went to a medical facility for evaluation.
- The treating physician could not find any material or scarring on the plumber's left eye at the time of the medical examination. The plumber received prescription eye drops as a precautionary measure.



## Discussion of Activities

- Due to the plumber's close proximity to the work task (soldering) and the tilt (25 degree angle) of the plumber's head, it was determined that additional hazard controls should have been identified and implemented for this task. Examples: use of goggles or heat shield blankets, which the contractor identified were helpful in reducing splash during soldering and brazing operations. The safety glasses that were used by the plumber met the ANSI Z87.1 requirements. After an investigation was conducted, it was determined that the safety glasses were the appropriate selection for eye protection for soldering if a splash hazard was not present.



# Analysis

- Job scoping did not identify special circumstances and/or conditions: Due to the plumber's close proximity to the work activity (soldering) and the tilt (25 degree angle) of the plumber's head, it was determined that a more thorough job scoping of site conditions would have identified that additional hazard controls were necessary to provide adequate protection to the worker. Examples: use of goggles or heat shield blankets, which the contractor identified were helpful in reducing splash during soldering and brazing operations.



# **Lessons Learned**

## **4-inch Poly Gas Line Impacted during Tech Area II Fence Removal Project**

### **Contractor's Perspective**



# Unexpected Discovery of Hazardous Energy Event

- A Prime Construction Demolition Contractor impacted a 4-inch polyethylene gas line with 19 pounds of pressure (medium pressure system) while removing fence posts with a CAT 330 BL Trackhoe.
- The Operator immediately shut down the trackhoe, moved away from the area and notified the Prime Construction Demolition Contractor's Foreman by radio



# Event

- The gas line had been spotted and marked with yellow paint and "whisker markers" as part of the excavation permit process. The polyethylene gas line was 2 1/2 feet from the surface.
- The concrete poured to anchor each fence post, was approximately 18 inches across and 2 1/2 - 3 feet deep. The operator had removed 30 fence posts prior to the incident.



# Event

- On September 7, at 8:00 a.m., (morning of incident) the foreman and trackhoe operator walked the 500 feet of fence line scheduled to be removed that day (northwest section of Area II perimeter fencing).
- There were overhead power lines crossing the fence line at the same location where the gas line crossed. During the pre-job walk-down the foreman and operator focused on the overhead lines and did not notice the paint and "whisker markers" on the ground identifying the gas line.



# Event

- The foreman had the excavation permit at the time of the pre-job walk-down. The permit clearly identified the gas line location, but all required signatures had not been obtained.
- The permit process was not given the required rigor for the operation



# Lessons Learned (Corrective Actions)

- Prime Construction Demolition Contractor will update their Contract-Specific Safety Plan to include requirements that all below ground marked utilities are to be clearly marked in a more noticeable manner, perhaps with a vertical marker that can be seen from the equipment cab
- Retraining in the following items have been completed:
  - All involved personnel are to verify that a copy of the complete signed and approved excavation permit is on-site



# Lessons Learned (Corrective Actions)

- The process by which excavations may be accomplished, including paperwork requirements and work task procedures
- Daily tailgate safety meetings will include a walk-down of the proposed work area which includes noting where all utility lines are located, both overhead and below ground
- Procedures for uncovering marked below ground utility lines shall be clearly understood before start of excavation work
- No excavation work is to proceed unless the competent person/spotter is onsite



# **Lessons Learned**

## **Electrical Subcontractor Performs Work - Fall Protection Infraction**

### **Contractor's Perspective**



# Event

- Two man crew working a T&M contract installing electrical apparatus
- Journeyman and Apprentice crew
- Periodic direct supervision by Project Manager
- Employee accessed a cable tray inside the building to stand on



# Causal Factors

- Employee was exposed to fall hazards above 6' feet
- Fall protection remedies were limited to fall arrest systems
- Anchor point options were very limited
- Access from an extension ladder wasn't feasible
- PM had issued a fall protection kit the previous day to address the issue
- Employee fall arrest training was updated the previous summer



# Lessons Learned

- A culture of Zero Accidents is more important than compliance training
- Pre-planning of difficult fall protection anchor points is key to successful follow through, need to use SNL Engineers
- Availability of second tier support for difficult situations must be clear and flowed down to all workers
- Weekend operations still follow the same rules and guidelines as the 9 to 5



# **Lessons Learned**

## **Removal of Beryllium Contaminated Ductwork without PPE**

### **Overview**



# Lessons Learned Event

- At approximately 6:45 a.m. on October 31, 2007, a two-person crew working for a third-tiered Sheetmetal Subcontractor began removing overhead ductwork in the highbay of Building 984. The ductwork had been identified as beryllium-contaminated by the SNL Industrial Hygienist. This was communicated to the Prime Contractor through the Jobsite Hazard Evaluation (JSHE) included in the contract documents.



# Lessons Learned Event

- This was the Sheetmetal Subcontractor's first day on the project, and the Prime Contractor's Site Superintendent arrived at 7:15 a.m. to perform a pre-task meeting with the Sheetmetal Subcontractor. The pre-task meeting was intended to communicate the beryllium hazard and required controls to the Sheetmetal Subcontractor.
- Approximately 30 minutes of work was conducted prior to stopping.



# Lessons Learned Event

- After reviewing the event it was determined that the failure to follow procedures was significant and an investigation was initiated.
- Notifications were made and Subject Matter Experts were called in to address the potential hazards and path forward.



# Lessons Learned

- Four samples were taken, and results were returned the following afternoon on November 2, 2007. All four swipe samples showed beryllium levels less than the DOE release limits of 0.2ug per 100cm<sup>2</sup> and one of the 4 samples detected beryllium less than 0.02ug, which is the laboratory reportable limit.

# Lessons Learned

- Better communication between work groups and each company would have ensured that:
  1. the potential beryllium hazard had been fully evaluated and controls tailored to the work activities
  2. workers would have participated in a pre-task meeting discussing hazards and controls
  3. work would have been performed in accordance with the task specific controls developed for the removal of the duct work.



# SNL Lessons Learned

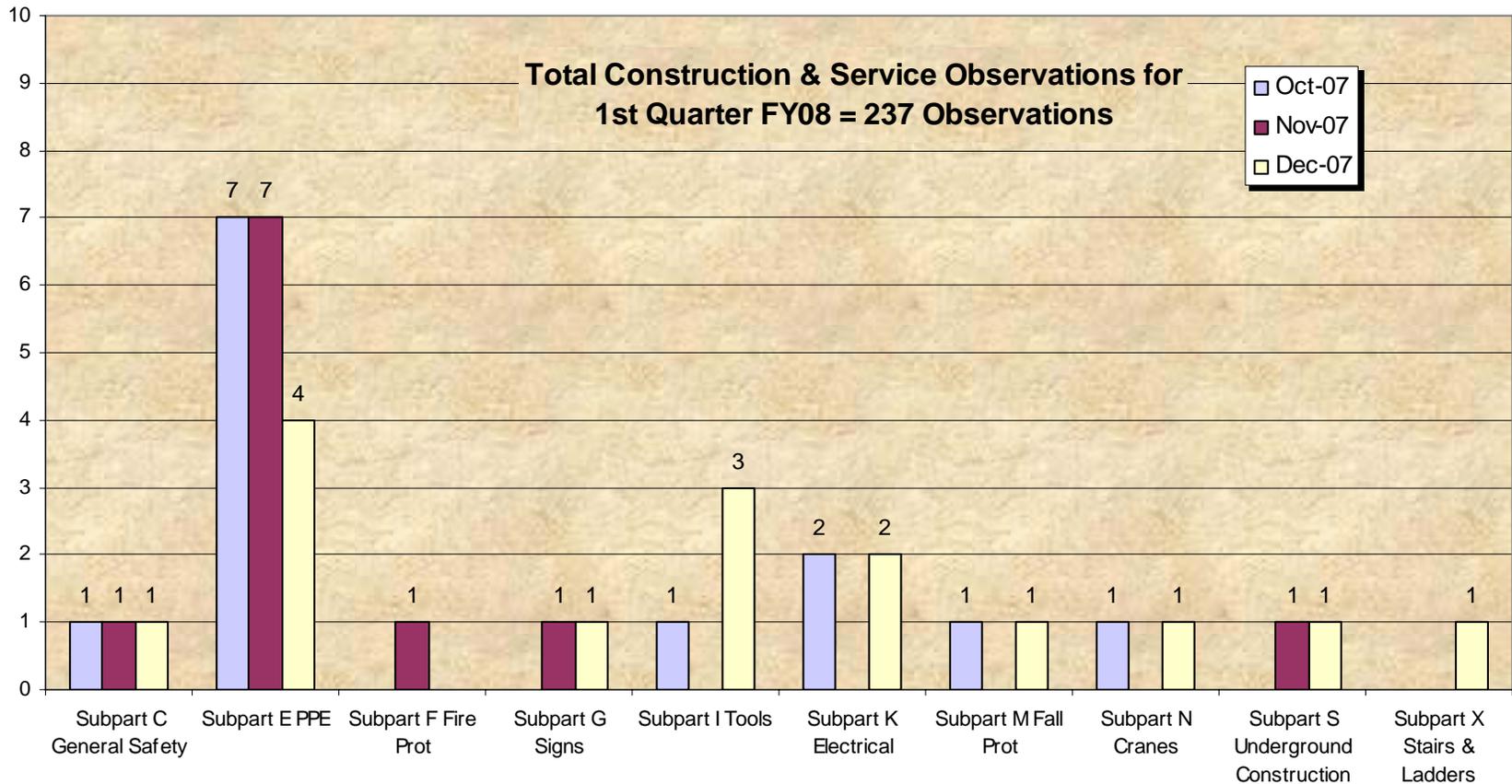
- Continue to improve the JSHE process including the required Personal Protective Equipment Selection.
- Develop new FMOC Hold Point AP - documenting process to identify hold points in the construction activities to ensure hazard controls are tailored for the task and site conditions prior to work activities being completed.



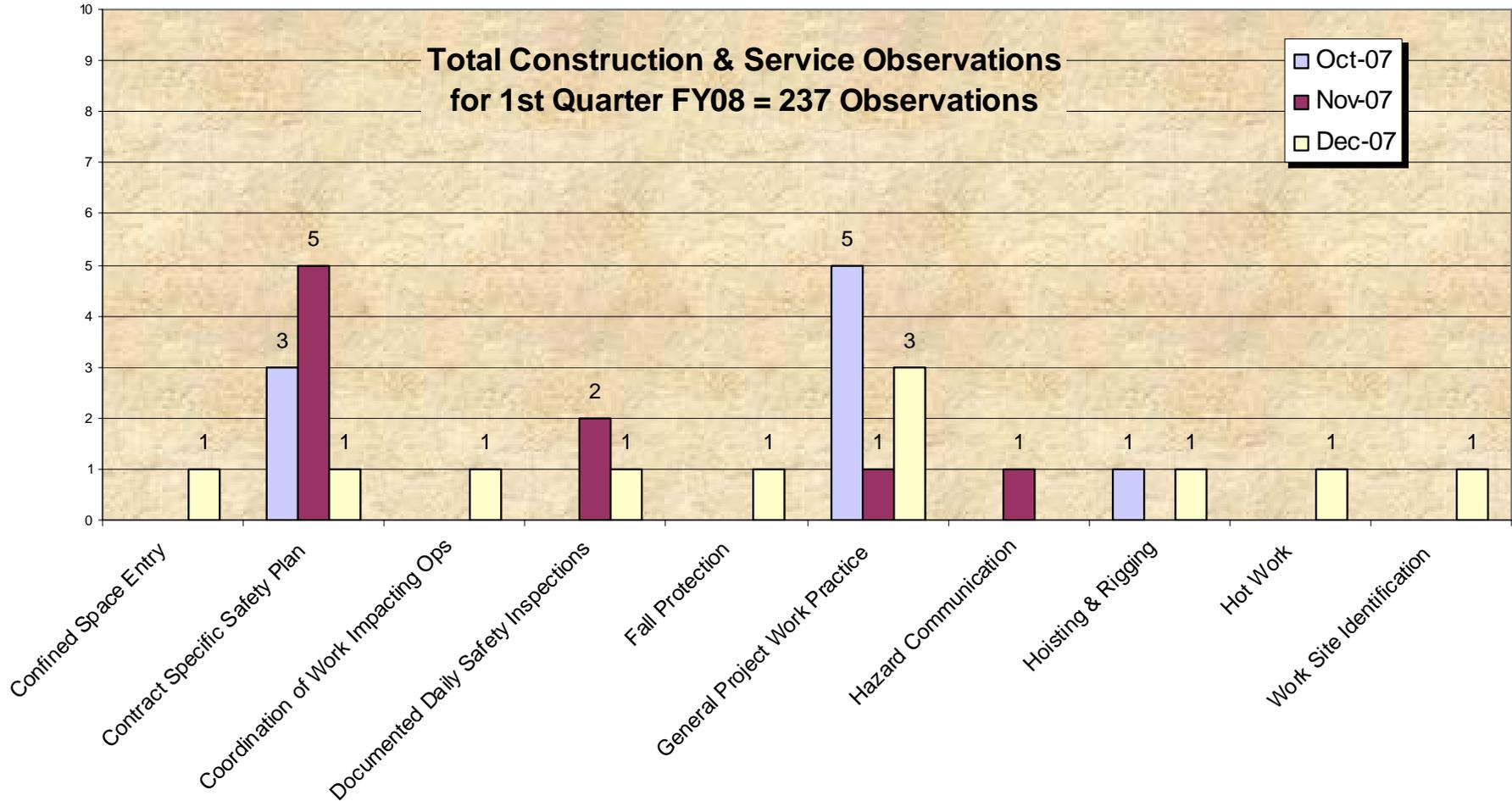
# Safety Observations Summary

**Greg Kirsch**  
ES&H Program Manager

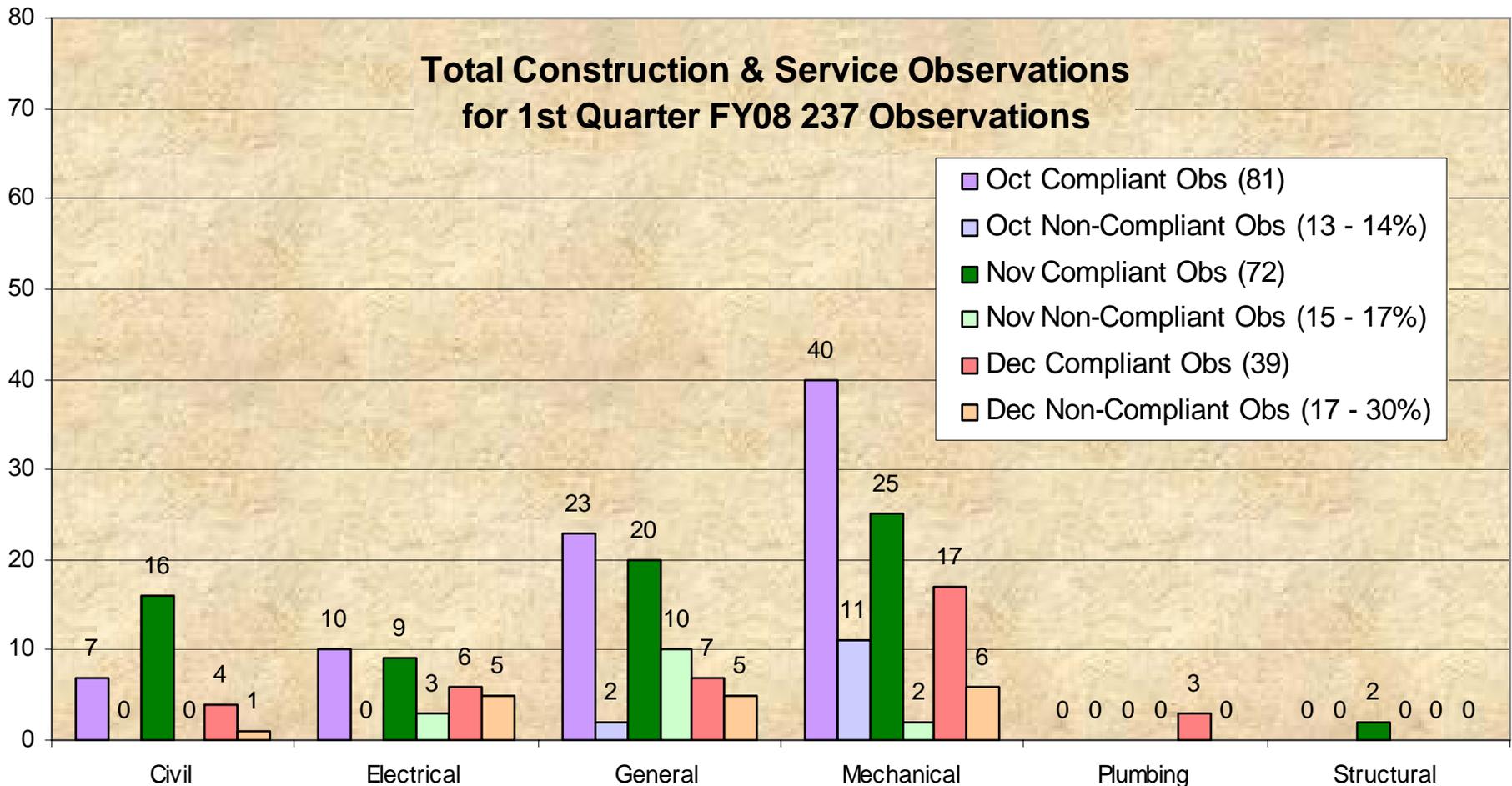
# Non-compliant Observations OSHA 1926 for Oct - Dec 2007



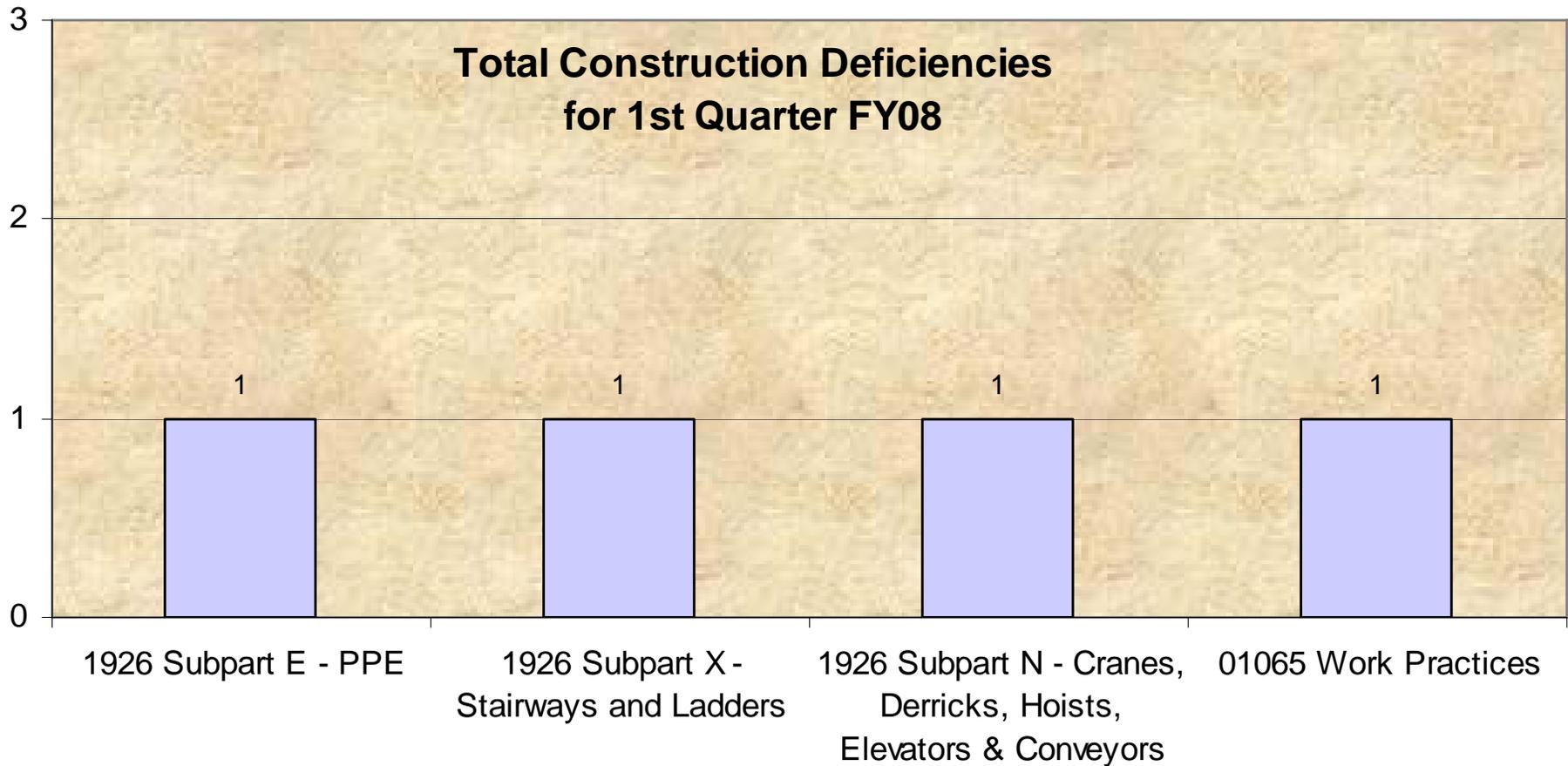
# Non-compliant Observations 01065 Spec for Oct - Dec 2007



# Compliant vs. Non-compliant Observations by Discipline Oct - Dec 2007

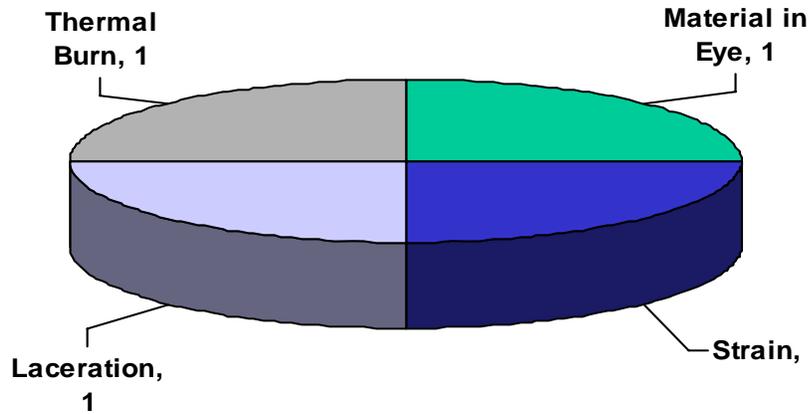


# Construction Deficiencies

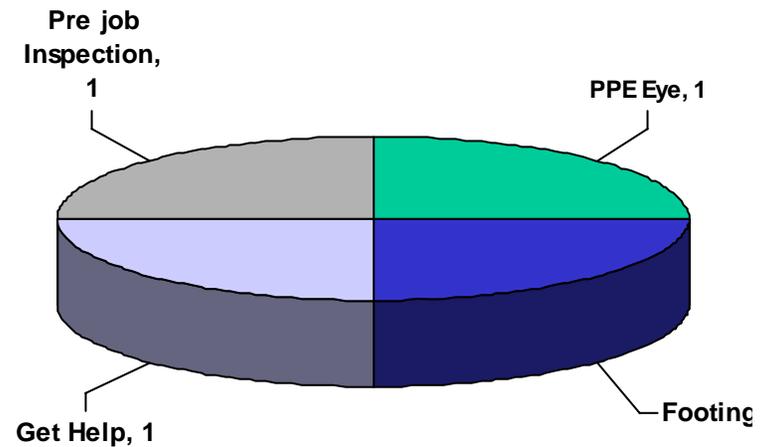


# Recordable Injuries Type and Behavior

Recordable Injuries Q1 FY08  
Type of Injury  
Construction Contractor



Recordable Injuries Q1 FY08  
Type of Behavior  
Construction Contractor





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# 10 Minute Break

# What's Wrong with This Picture???



# What's Wrong with This Picture???





# **Lessons Learned**

## **Energized Conductors at Buildings 802 and 856**

**Greg Kirsch**



# Scope

- Both occurrences (802 & 856) contained energized conductors that were discovered in the ceiling area.
- Both were classified as the unexpected discovery of a Hazardous energy (120 volts)



# 802 Event

- At approximately 12:40 a.m., on October 16, 2007, an Insulator working above the ceiling in Bldg. 802/Room 1139D was insulating a 1-inch copper hot water heating pipe when the Insulator's wrist brushed against an exposed energized 120-volt conductor, receiving a shock.



## 802 Event (continued)

- The conductor was protruding from a 1/2-inch flex connector in an electrical j-box that had been inappropriately left in place when a light fixture was removed in 1991. It appears that the person who removed the light fixture in 1991 cut the conductors outside of the j-box.



# 856 Event

- On October 18th, 2007, a Construction Electrician removed a ceiling tile in the hall outside Room 111B of Bldg. 856. The ceiling tile contacted exposed energized #12 120-volt conductors (there were no wire nuts installed on the conductors), causing the conductors to contact the metal conduit, resulting in an arc. The conductors were coming out of a 4-square electrical j-box (j-box “A”) without a cover that had three 1/2-inch conduits entering the box.



## 856 Event (continued)

- Building 856 was constructed in 1987. The conduits, conductors and power pole were most likely installed during the original installation of the systems furniture. The systems furniture was most likely installed and energized by the supplier, who remains unknown at this time.
- There was no injury, shock or impact to the environment or line operations as a result of this incident.



# Lessons Learned for Contractors

- Inspect work areas thoroughly prior to commencement of work.
- Report any nonconforming hazards while in work areas.
- Don't assume that work area is free from recognized hazards.



# BBS Behavior- 1st Qtr FY 2008 Data Review



Sandia National Laboratories

William Tierney

# 1st Qtr Data Summary Overview Chart

Dates From: 10/1/2007 To: 12/31/2007  
SOS: Construction & Service  
Observer Workgroup: Construction & Service

Observations  
849





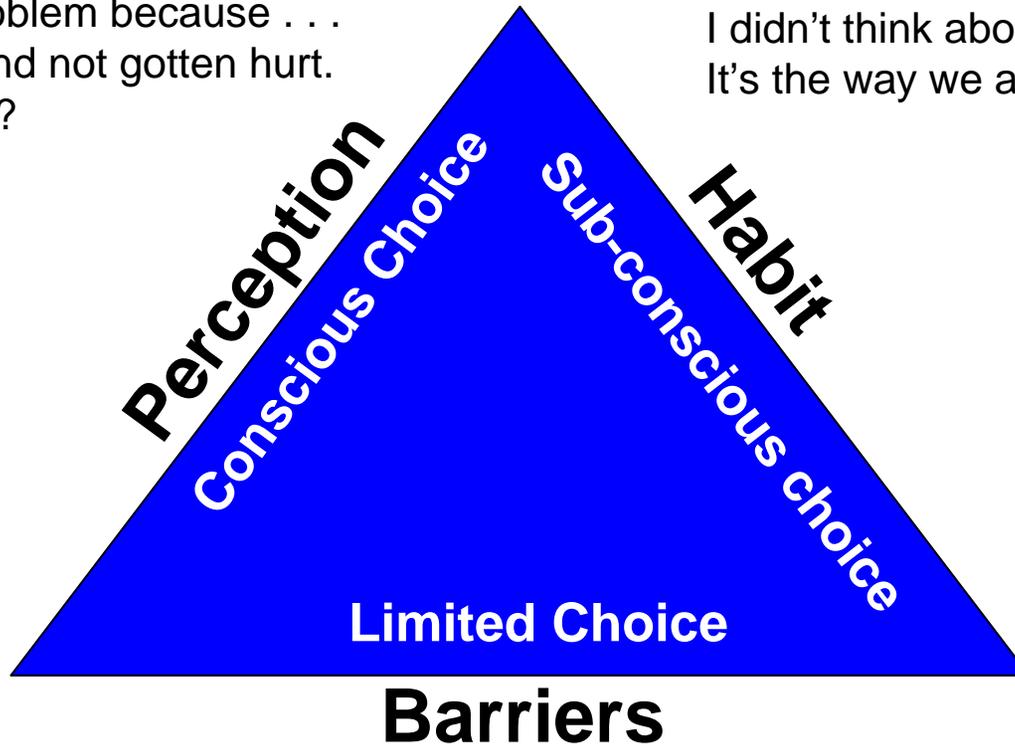
# 1st Qtr Data Summary

- October-December
- Total of 849 Observations
- New Behaviors
  - Alignment
  - Get Help
  - Housekeeping
  - PPE Fall/Anchor Point
- Overall % Safe= 99% (99% last qtr)
- Lowest % Safe
  - Housekeeping-95% (New Behavior)
  - PPE Fall/Anchor Point-97% (New Behavior)
  - Get Help-98% (New Behavior)

# Data Categorization

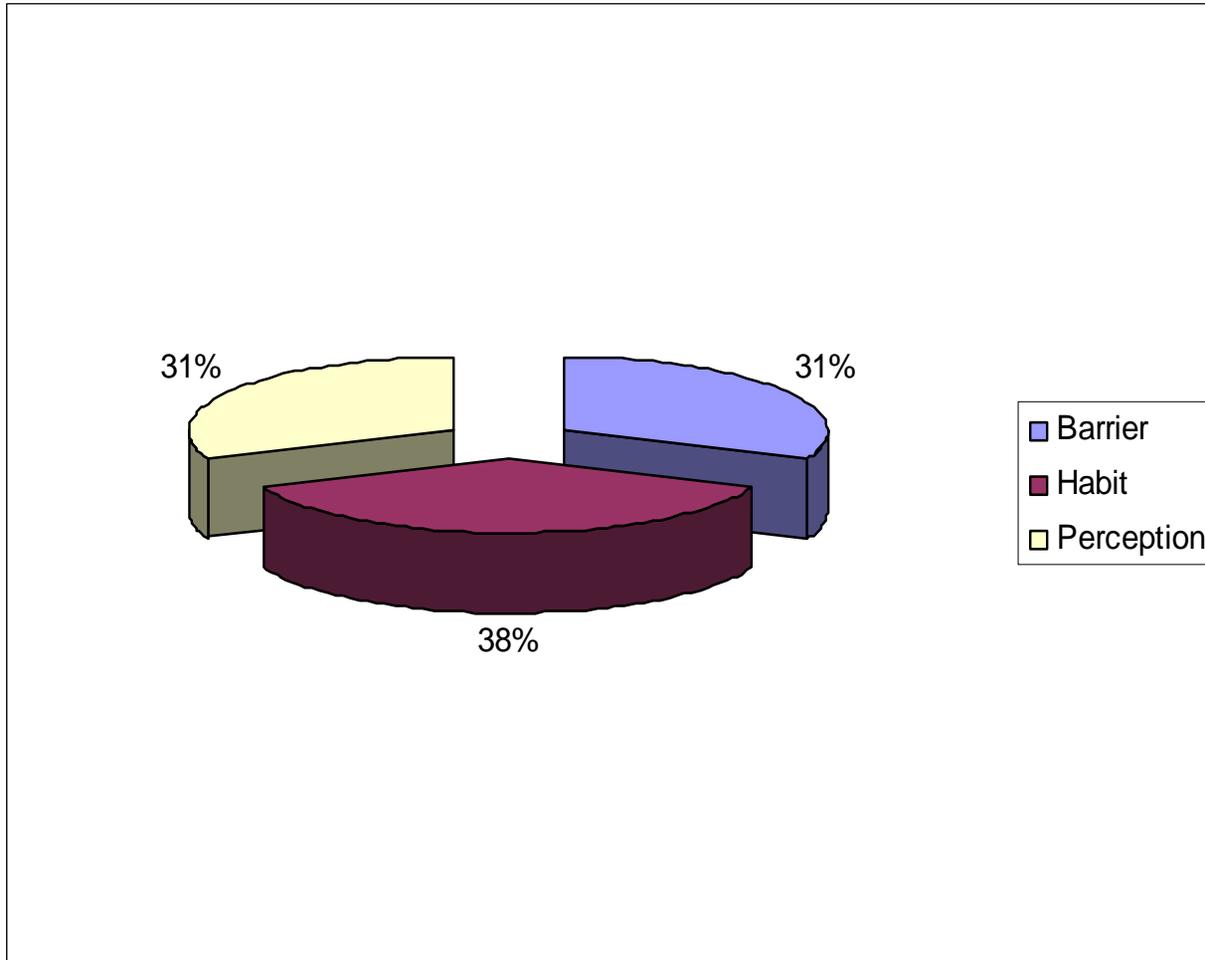
In my opinion . . .  
In my experience  
I don't think it's a problem because . . .  
I've done it before and not gotten hurt.  
What's wrong with it?

That's the way I always do it!  
I don't know.  
I didn't think about it.  
It's the way we always do it around here



I can't do it any other way because . . .  
It would be difficult to do it that way because . . .  
If I do it that way, (this would happen).

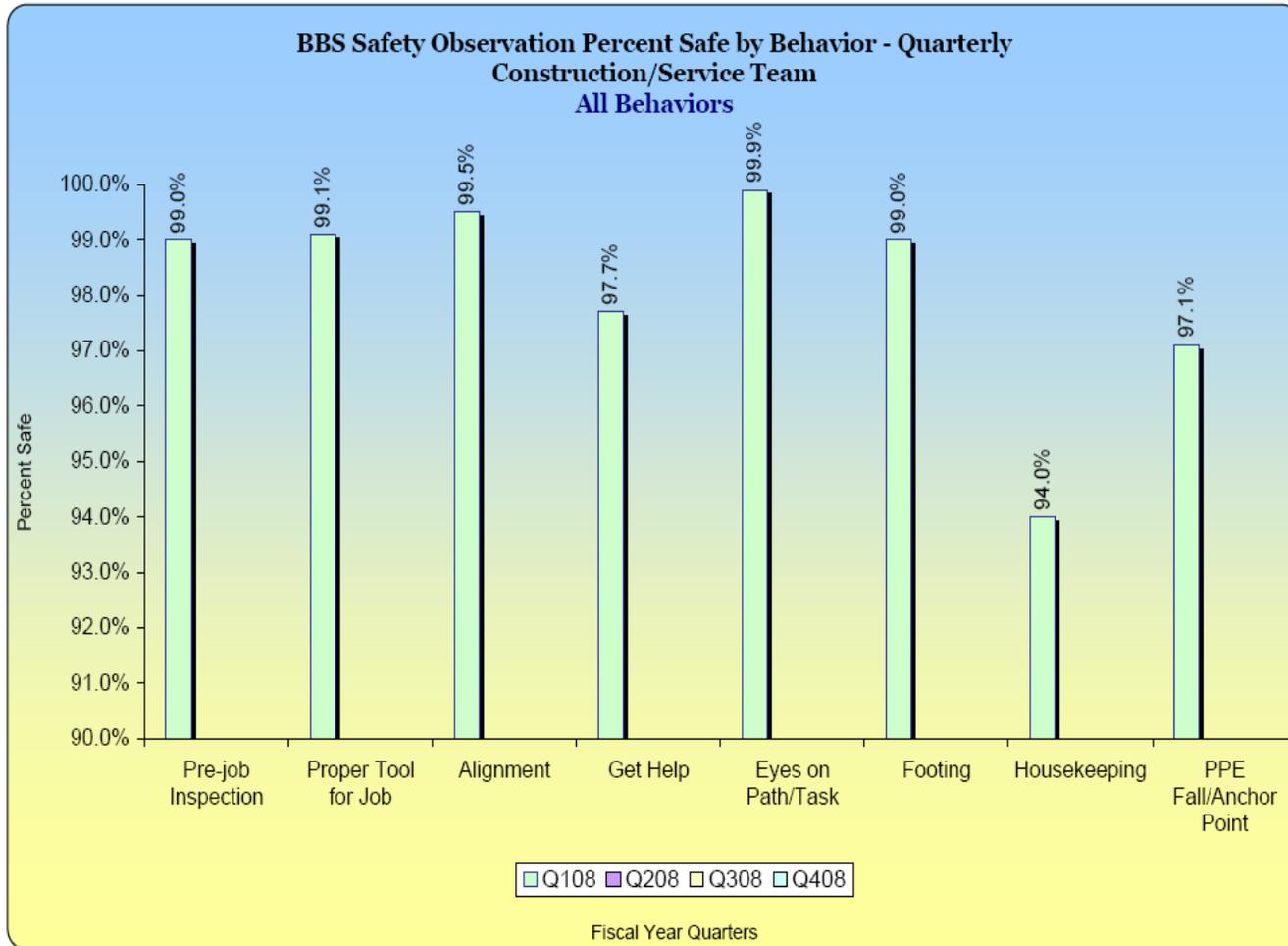
# Data Categorization: October-December



# Data Analysis

- Habit was largest category
  - Largest number of concerns was Get Help
    - “Why”- Not used to getting help
- Perception was second category
  - Highest number of concerns PJI and Housekeeping
    - “Why”-Did not think PJI was needed
    - “Why”-Did not think housekeeping was issue
- Barriers was second category
  - Highest number of concerns Housekeeping
    - “Why”-No time to clean
    - “Why”-Small space

# BBS Data-LTD-New Behaviors





# BBS Program Updates

- Contractor Pilot Program
  - 2nd Qtly Data Presentation this month
  - Working to develop contractual requirements for new Partnership contracts
  - Pilot program completes in April 2008



# Local Exhaust Ventilation Units

**Fred Shelly**  
**Industrial Hygienist**





# Purpose of Local Exhaust Ventilation (LEV)

- Move contaminants away from breathing zone using ventilation
  - Contaminants removed and transported out of building
  - Contaminants moved to a canister and captured by HEPA filters



# Deciding on the Proper Unit

- Need a bigger air mover to move air outside building and smaller unit to move air locally to a HEPA canister.
- Determine if building exhaust duct is available to aid in removing contaminants from the building
- HEPA canisters (99.97% efficient) capture fume (particulate) and not gases (ozone)
- Carbon bed may be needed to remove odors.

## Deciding on the Proper Unit (cont.)

- Mobile unit or stationary/mounted unit
- Mobile unit should be light weight and fitted with castors
- Shop vacuums (Shop vacs) should not be used as a local exhaust ventilation unit
  - Do not normally use HEPA filtration
  - Flammability issues with the unit (no spark arrestor)
  - May not be adequately sized or come with a capture hood/nozzle
- Working high on a lift or in tight locations where a HEPA canister will not fit may require longer hose and bigger unit



## Deciding on the Proper Unit (cont.)

- Unit should operate at low noise levels.
- Filter change out indicator or preventive maintenance program to routinely inspect/change filters.



# Evaluating the LEV While in Use

- Inspect hose for cracks or kinks
- Ensure hose is not being run over
- The hose positioned the proper distance from the source
- Visually evaluate the smoke/fume to ensure it is efficiently being captured by the LEV unit.
- Recommended LEV units (attached)

# Recommended LEV Units

Portable/Wall Mounted Particulate Filtering Welding/Brazing Hoods				
Manufacturer and Hood Name	Picture	Ordering Information	Website	Approximate Cost
Lincoln Electric <u>Miniflex</u>		Valley Welders Supply 2801 Princeton NE Albuquerque, NM 87107 (505) 884-1450	<a href="http://www.mylincolnelectric.com/Catalog/equipmentdatasheet.asp?p=16086">http://www.mylincolnelectric.com/Catalog/equipmentdatasheet.asp?p=16086</a>	\$1400
Lincoln Electric <u>Mobiflex 200-M</u>		Valley Welders Supply 2801 Princeton NE Albuquerque, NM 87107 (505) 884-1450	<a href="http://www.mylincolnelectric.com/Catalog/equipmentdatasheet.asp?p=601">http://www.mylincolnelectric.com/Catalog/equipmentdatasheet.asp?p=601</a>	\$3200
Lincoln Electric <u>Mobiflex 400-MS</u>		Valley Welders Supply 2801 Princeton NE Albuquerque, NM 87107 (505) 884-1450	<a href="http://www.mylincolnelectric.com/Catalog/equipmentdatasheet.asp?p=602">http://www.mylincolnelectric.com/Catalog/equipmentdatasheet.asp?p=602</a>	\$5300

# Recommended LEV Units

Portable/Wall Mounted Particulate Filtering Welding/Brazing Hoods				
Manufacturer and Hood Name	Picture	Ordering Information	Website	Approximate Cost
Lincoln Electric (Wall Mounted) 200-M		Valley Welders Supply 2801 Princeton NE Albuquerque, NM 87107 (505) 884-1450	<a href="http://www.mylincolnelectric.com/Catalog/equipmentdatasheet.asp?p=603">http://www.mylincolnelectric.com/Catalog/equipmentdatasheet.asp?p=603</a>	\$2000
Lincoln Electric (Wall Mounted) 400-MS		Valley Welders Supply 2801 Princeton NE Albuquerque, NM 87107 (505) 884-1450	<a href="http://www.mylincolnelectric.com/Catalog/equipmentdatasheet.asp?p=604">http://www.mylincolnelectric.com/Catalog/equipmentdatasheet.asp?p=604</a>	\$3200
Kemper Mechanical Filter (Mobile)		1-800-756-5367	<a href="http://www.weldingsmoke.com/mobile-filter-units.html">http://www.weldingsmoke.com/mobile-filter-units.html</a>	\$3300-\$4200

# Recommended LEV Units

Portable/Wall Mounted Particulate Filtering Welding/Brazing Hoods				
Manufacturer and Hood Name	Picture	Ordering Information	Website	Approximate Cost
Kemper Mechanical Filter (wall-mounted)		1-800-756-5367	<a href="http://www.weldingsmoke.com/mechanical-filter-units.html">http://www.weldingsmoke.com/mechanical-filter-units.html</a>	\$4000-\$5100
Kemper Cartridge Filter (Mobile)		1-800-756-5367	<a href="http://www.weldingsmoke.com/cartridge-filter-units.html">http://www.weldingsmoke.com/cartridge-filter-units.html</a>	\$5800-\$6000
Kemper Cartridge Filter (Wall-Mounted)		1-800-756-5367	<a href="http://www.weldingsmoke.com/cartridge-wall-mounted.html">http://www.weldingsmoke.com/cartridge-wall-mounted.html</a>	\$5800-\$7000

# Recommended LEV Units

Portable/Wall Mounted Particulate Filtering Welding/Brazing Hoods				
Manufacturer and Hood Name	Picture	Ordering Information	Website	Approximate Cost
Kemper FilterMaster		1-800-756-5367	<a href="http://www.weldingsmoke.com/filtermaster.html">http://www.weldingsmoke.com/filtermaster.html</a>	\$3600-\$3800
Kemper FilterMaster XL		1-800-756-5367	<a href="http://www.weldingsmoke.com/filtermasterXL.html">http://www.weldingsmoke.com/filtermasterXL.html</a>	\$4800-\$5000
Kemper MiniWeldmaster		1-800-756-5367	<a href="http://www.weldingsmoke.com/mini-weldmaster.html">http://www.weldingsmoke.com/mini-weldmaster.html</a>	\$2000

# Recommended LEV Units

Portable/Wall Mounted Particulate Filtering Welding/Brazing Hoods				
Manufacturer and Hood Name	Picture	Ordering Information	Website	Approximate Cost
SAS 300 Series		1-800-799-4609 Ext. 118	<a href="http://www.sentryair.com/specs/Welding-Fume-Extractor-Arm-300-WFE.htm">http://www.sentryair.com/specs/Welding-Fume-Extractor-Arm-300-WFE.htm</a>	\$2300

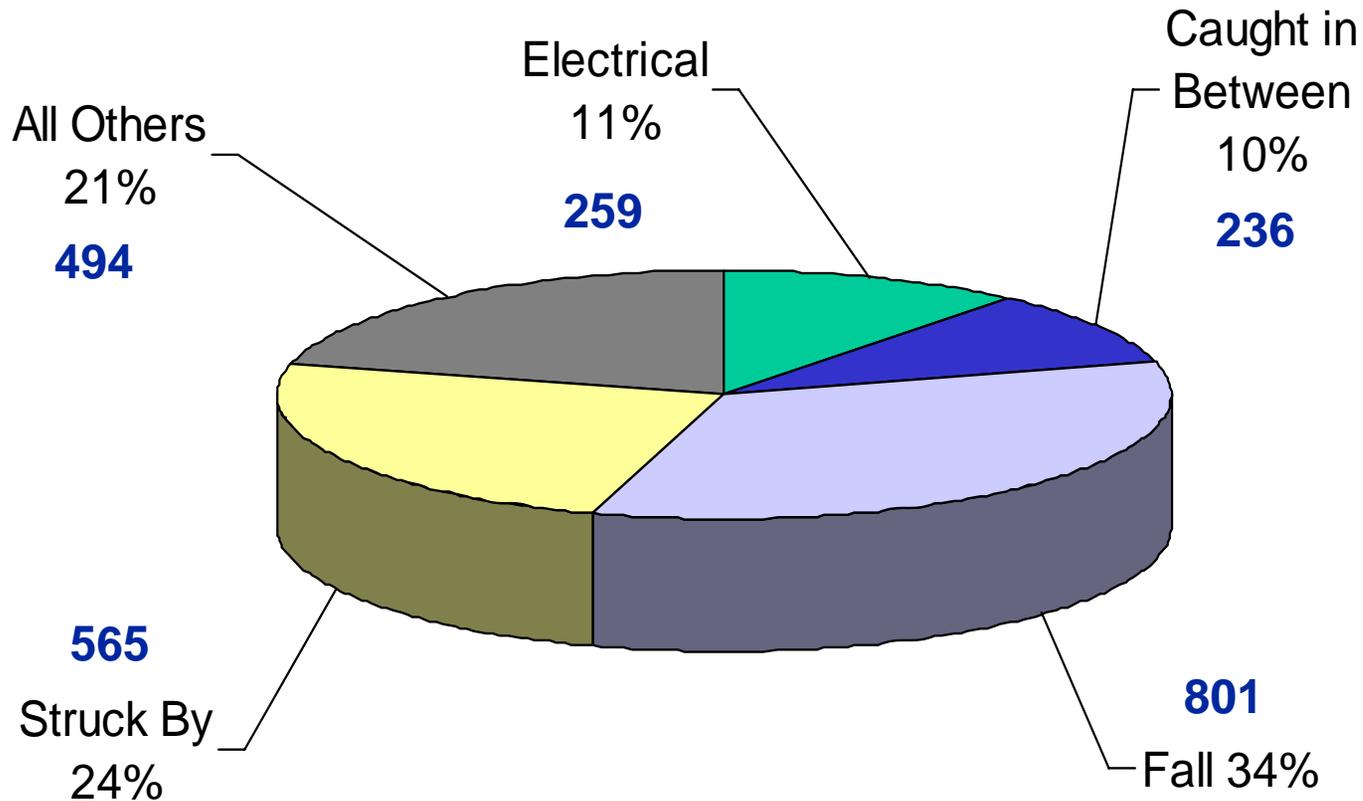


# Fall Protection

Pamela Sayers

# History

## Fatality Data 2003 & 2004 2,355 Total Reported Fatalities



# History

## Fatality & Statistical Analysis

- 85% of all citations & 90% of \$ applied as fines are related to the OSHA Fatal 4 Hazards\*
- 79% of all fatalities are related to the OSHA Fatal 4\*



**\*Fall Protection, Struck-By, Electrical, Caught-In-Between**

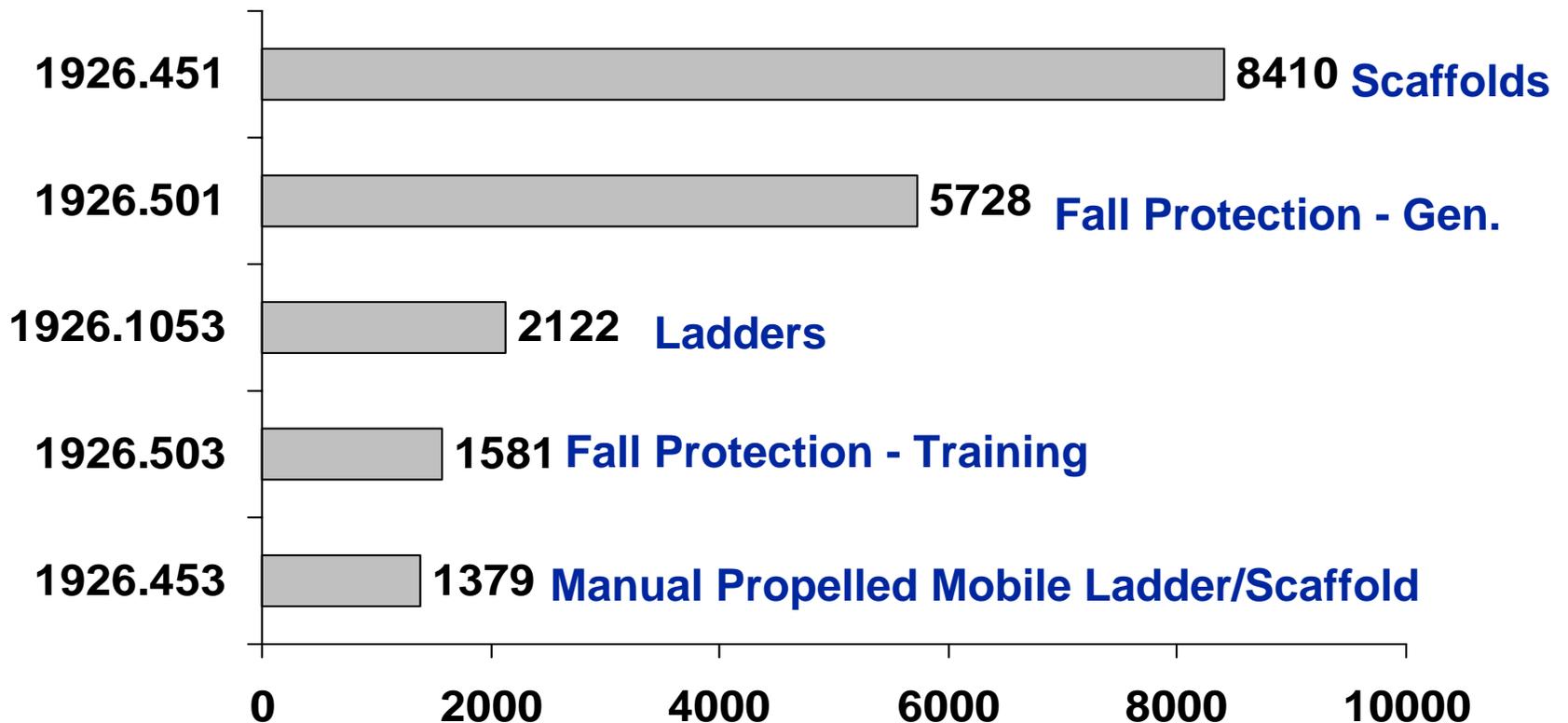
# History

## OSHA Citations (FY 2005)

Subpart	Citations	Total \$ Value	Description
<b>1926.451</b>	<b>8,410</b>	<b>\$7,682,185</b>	<b>Scaffolding</b>
<b>1926.501</b>	<b>5,728</b>	<b>\$7,176,729</b>	<b>Fall Protection Scope/Applications/Definitions</b>
<b>1926.1053</b>	<b>2,122</b>	<b>\$964,811</b>	<b>Ladders</b>
1926.651	1,794	\$2,104,067	Excavations, General Requirements
<b>1926.503</b>	<b>1,581</b>	<b>\$823,501</b>	<b>Fall Protection Training Requirements</b>
1926.20	1,560	\$868,881	Construction, General Safety & Health Provisions
1926.100	1,519	\$792,414	Head Protection
<b>1926.453</b>	<b>1,379</b>	<b>\$1,285,758</b>	<b>Manually Propelled Mobile Ladder Stands &amp; Scaffolds</b>
1926.404	1,313	\$644,886	Electrical, Wiring Design & Protection
1926.652	1,264	\$3,117,087	Excavations, Requirements for Protective Systems
1926.405	1,157	\$344,814	Electrical Wiring Methods, Components & Equipment, General Use

# History

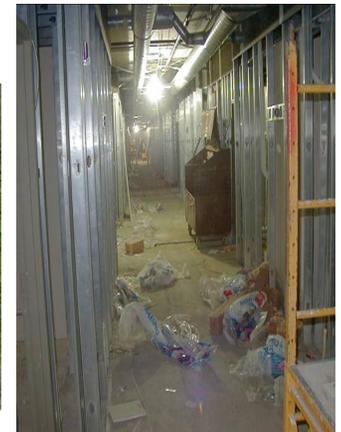
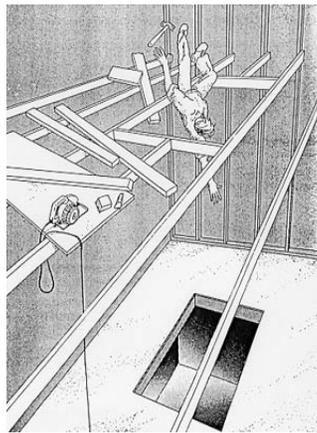
## OSHA Fall Protection Citations (FY 2005)



# History

## Primary Causes of Fall-Related Fatalities

- Unprotected sides, edges & holes
- Improper constructed walking/working surfaces
- Improper use of access equipment
- Failure to properly use personal fall arrest system (PFAS)
- Slips & Trips (Housekeeping)



# Lessons Learned



## OPERATING EXPERIENCE SUMMARY

U.S. Department of Energy  
Office of Health, Safety and Security  
OE Summary 2007-06  
September 14, 2007

### Inside This Issue

- *Damaged Powered Air Purifying Respirator Hoses*.....1
- *Safe Use and Installation of Fall Protection Anchors*...3
- *NRC Identifies Recurring Operability Issues with Emergency Diesel Generators*.....5



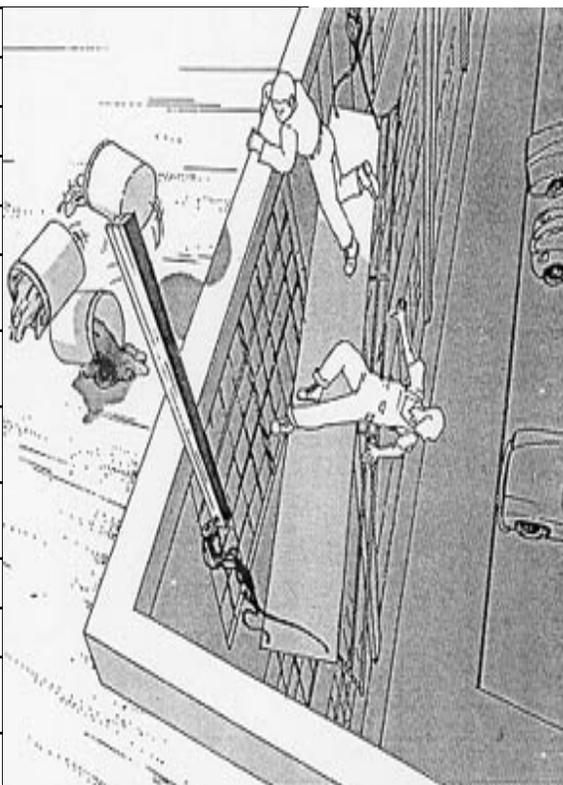
# Lessons Learned

Accident Type:	Fall from Different Level	
Weather:	Inside Building	
Type of Company:	Demolition Contractor	
Size of Work Crew:	2	
Union or Non-union:	Union	
Worksite Inspection?:	Yes	
Designated Competent Person on Site?:	No	
Employer Safety and Health Program?:	Yes	
Training and Education for Employees?:	No	
Craft of Deceased Employee(s):	Laborer	
Age; Sex	62; Male	
Experience at this Type of Work	2 months	
Time on Project	2 days	

**A laborer engaged in the removal of an existing stairway fell through the stairway floor opening & fell 32'.**

# Lessons Learned

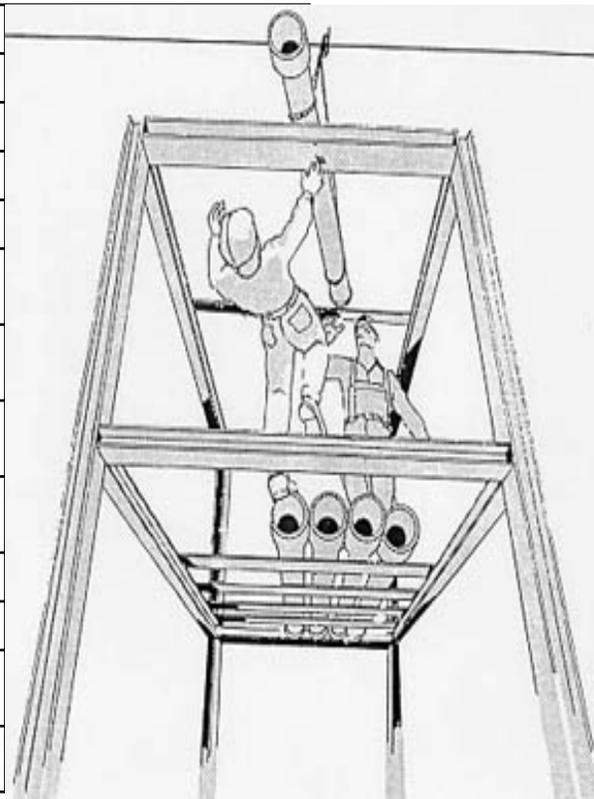
Accident Type:	Fall, Different Level
Weather Conditions:	Clear, Warm
Type of Operation:	Painting Contractor
Size of Work Crew:	2
Collective Bargaining	No
Competent Safety Monitor on Site:	No
Safety and Health Program in Effect:	No
Was the Worksite Inspected Regularly:	No
Training and Education Provided:	Inadequate
Employee Job Title:	Painter
Age; Sex:	29; Male
Experience at this Type of Work:	Unknown
Time on Project:	1 month



**Two employees were painting the exterior of a 3 story building when 1 of the 2 outriggers on the 2-point suspension scaffold failed. One painter safely climbed back onto the roof while the other fell 35'. The outriggers were LTA counterweighted with 3 5-gallon buckets containing sand & were not secured to a structurally sound portion of the building. Neither worker was using a PFAS.**

# Lessons Learned

Accident Type:	Fall from Elevation
Weather Conditions:	Clear
Type of Operation:	Plumbing Contractor
Size of Work Crew:	30
Collective Bargaining	Yes
Competent Safety Monitor on Site:	Yes
Safety and Health Program in Effect:	Yes
Was the Worksite Inspected Regularly:	Yes
Training and Education Provided:	No
Employee Job Title:	Plumber
Age; Sex:	37; Male
Experience at this Type of Work:	3 Weeks
Time on Project:	2 Hours



**Employees were working on structural steel, hoisting pipes from ground level to higher levels for storage. While guiding a pipe to be stored on the floor above, 1 worker walked backwards off the end of a stored pipe. The worker fell 12' to a concrete deck.**

# Lessons Learned

Accident Type:	Fall through Scaffolding
Weather Conditions:	Clear
Type of Operation:	Masonry Contractor
Size of Work Crew:	8
Collective Bargaining	Yes
Competent Safety Monitor on Site:	No
Safety and Health Program in Effect:	Yes
Was the Worksite Inspected Regularly:	No
Training and Education Provided:	Yes
Employee Job Title:	Bricklayer
Age; Sex:	52; Male
Experience at this Type of Work:	25 Years
Time on Project:	4 Weeks



**A crew laying bricks on the upper floor of a 3 story bldg built a 6ft platform spanning a gap between 2 scaffolds. The platform was correctly constructed of 2 - 2" x 12" planks with standard guardrails; however, 1 of the planks was not scaffold grade lumber & also had extensive dry rot in the center. When a worker stepped on the plank it disintegrated & fell 30'.**

# Lessons Learned

Accident Type:	Fall from Scaffold	
Weather Conditions:	Cold	
Type of Operation:	General Contractor	
Size of Work Crew:	3	
Collective Bargaining	Yes	
Competent Safety Monitor on Site:	Yes	
Safety and Health Program in Effect:	No	
Was the Worksite Inspected Regularly:	Yes	
Training and Education Provided:	No	
Employee Job Title:	Laborer	
Age; Sex:	60; Male	
Experience at this Type of Work:	30 Years	
Time on Project:	5 Months	

**A laborer was working on the 3rd level of a tubular welded frame scaffold which was covered with ice & snow. Planking on the scaffold was LTA, there was no guardrail or access ladder for the various scaffold levels. The worker slipped & fell head first 20' to the pavement below.**

# Lessons Learned

Accident Type:	Fall from Elevation
Weather Conditions:	Clear
Type of Operation:	Pouring Concrete
Size of Work Crew:	13
Collective Bargaining	Yes
Competent Safety Monitor on Site:	Yes
Safety and Health Program in Effect:	Yes
Was the Worksite Inspected Regularly:	Yes
Training and Education Provided:	No*
Employee Job Title:	Laborer
Age; Sex:	65; Male
Experience at this Type of Work:	21 Years
Time on Project:	2 Months



**A construction crew was preparing to pour concrete into forms. A laborer climbed up a ladder on 1 side of the forms & stepped over the form to stand on an unguarded scaffold on the opposite side. The laborer was carrying 2 hand trowels & a brush to be used by other workers after the concrete was poured. The worker fell, striking their head on a concrete slab below.**

**Because the worker had previously worked for the employer on several different occasions & had been performing this type of work over the last 21yrs, the employer felt no training was necessary for this worker & none was provided.**

# Lessons Learned

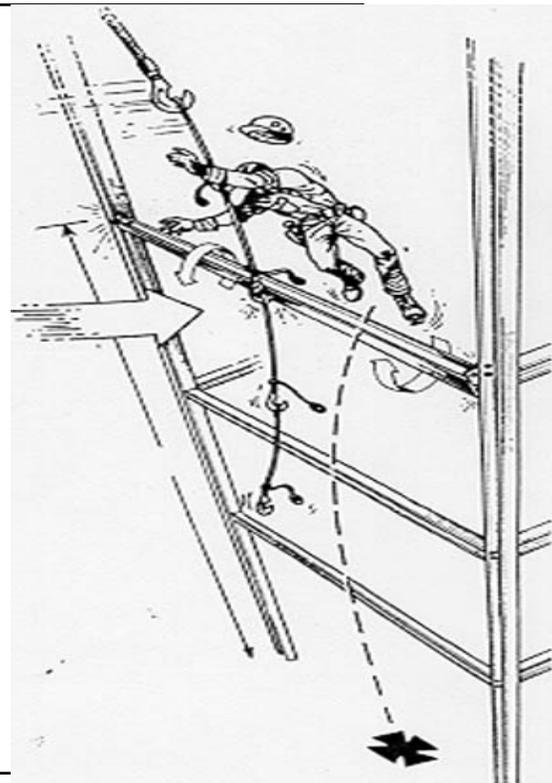
Accident Type:	Fall from Roof
Weather Conditions:	Clear
Type of Operation:	Construction Roofing
Size of Work Crew:	4
Collective Bargaining	Yes
Competent Safety Monitor on Site:	No
Safety and Health Program in Effect:	No
Was the Worksite Inspected Regularly:	No
Training and Education Provided:	No
Employee Job Title:	Roofer
Age; Sex:	21; Male
Experience at this Type of Work:	6 months
Time on Project:	3 weeks



A roofer, handling a piece of fiberboard, backed up & tripped over a 7½" parapet. The roofer fell 50'.

# Lessons Learned

Accident Type:	Fall
Weather Conditions:	Clear/Windy
Type of Operation:	Structural Steel
Size of Work Crew:	23
Competent Safety Monitor on Site:	Yes
Safety and Health Program in Effect:	Yes
Was the Worksite Inspected Regularly:	Yes
Training and Education Provided:	Yes
Employee Job Title:	Iron Worker
Age; Sex:	37; Male
Experience at this Type of Work:	10 Years
Time on Project:	4 Days



**2 connectors were erecting lightweight steel "I" beams on the 3rd floor of a 12-story building, 54' above the ground. 1 worker removed a choker sling from a beam & then attempted to place the sling onto a lower empty hook on a series of stringers. While the crawler tower crane was booming away from the steel, the wind moved the load line & stringer into the beam the worker was standing on. The beam moved while the worker was trying to disengage the hook & fell.**

# Lessons Learned

Accident Type:	Fall (Thrown from)
Weather Conditions:	Unknown
Type of Operation:	Cleaning, Replacing and Caulking Brick
Size of Work Crew:	6
Competent Safety Monitor on Site:	No
Safety and Health Program in Effect:	Yes
Was the Worksite Inspected Regularly:	No
Training and Education Provided:	Yes
Employee Job Title:	Laborer
Age; Sex:	45; Male
Experience at this Type of Work:	Unknown
Time on Project:	3 Weeks



**Employee was operating an extendable boom aerial platform. The worker was thrown from the basket while moving the machine. The boom was fully extended & the machine ran over some bricks, causing the boom to flex or spring, throwing the worker from the basket. The fall was 37' to a concrete surface. The worker sustained fatal head & chest injuries.**



# Safety Stars

**John Norwalk, Manager**  
Construction and Inspection

# Safety Stars

## Oct - Dec 2007



NAME	COMPANY
Mike Connelly	Del Rio Enterprises
Jamie Anderson	Enterprise Electric
Santos Griego	Enterprise Electric
Dave Justus	Enterprise Electric
Delbert Martinez	Enterprise Electric
Joey Solis	Enterprise Electric
Richard Traczyk	Enterprise Electric
Mike Williamson	Enterprise Electric
Richard Zubia	Enterprise Electric
Don Meaders	JB Henderson
Ray Wolf	Rupert Plumbing
Dane Sexton	Rupert Plumbing



# Closing Announcements

# Construction Safety Seminar Schedule

**Location: Mountain View Club**

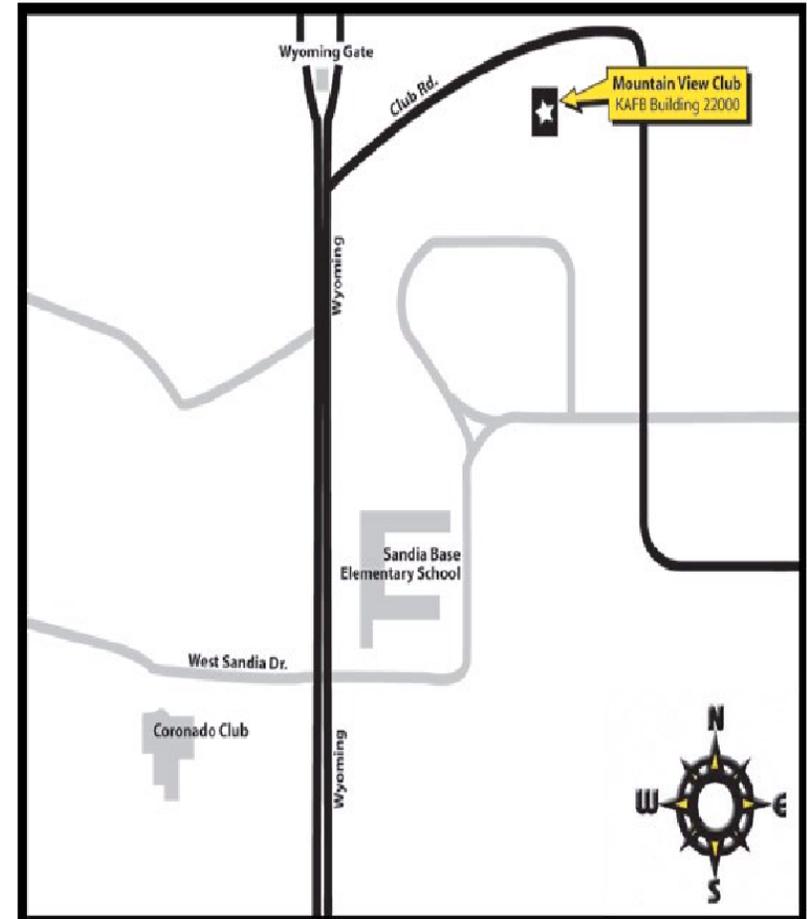
**Time: 2:00 – 4:00 PM**

**Next Seminars:**

**April 8, 2008**

**July 8, 2008**

**October 21, 2008**



# Contractors Quarterly Safety Seminar

## Sign-In Sheet

PRINT CLEARLY

	Company	Name	Position (Safety Officer, Foreman, etc.)	Office Phone	Cell Phone	Email Address
1.	COMPA/SNL	ROGER BELL	SCO	284-2098	331-6785	rodbell@sandia.gov
2.	SNL	ROD JUSTUS	SCO	845-1313	366-3140	RTJUSTU@SANDIA.GOV
3.	DIAJN	Dave Hendrix	Coast Observer	844-1773	235-9674	dchenir@sandia.gov
4.	DEL RIO ENT	RICHARD CONNELLY	FIELD SUPV.	341-9035	254-8213	
5.	B&D Industries	MATT Baker	Risk MGMT	299-4464	980-1459	matth@b-d-electric.com
6.	JAMES GA US ELECTRICAL	JAMES GARCIA	PM	260-1000	401-6000	jamesg@uselectricalcorp.com
7.	US ELECTRICAL CORP.	LARRY ECKHARDT	PM	260-1000	331-8337	larrye@uselectricalcorp.com
8.	Enterprise Elec Serv Inc	Delbert Martinez	SW	275-9369	None	None
9.	SNL / The plus group	David Thomsen	ESMT	845-0835	-	djthoms@sandia.gov
10.	Enterprise Elec Serv Inc	Michael William	App SW	205-9389		
11.	ENTERPRISE Elect.	DAVID JUSTUS	J.W.	275-9369		
12.	Enterprise Elec	RICHARD ZUBIA	JW,	228-9369		
13.	NATIONAL HEATING & VENT	CESAR URRARTE	P.M.	242-5828	362-3783	CEC@nationalheat.com
14.	SNL	Jeff Quintanz	Dir	845-0544		jffquint@sandia.gov
15.	SNL	MIKE QUINLAN	Mgr.	844-6042	235-9644	
16.	SNL	JOHN NORWALK	MGR	849-2629		johnorwalk@sandia.gov
17.	SUMMIT	Richard Passwater	Supv	842-8113	228-3689	
18.	SNL	TROY ROGERS	INSPEC	235-9672		trogers@sandia.gov
19.	SNL	BRYANT REEVES	INSPECTOR	284-2976		BREEVES@SANDIA.GOV
20.	SNL	JAMES GONCALVES	Inspection	250-0493	284-0295	
21.	SNL	Anthony M. Bawa	Man	844-3553		ambaca@sandia.com
22.	SNL	Linda Sell	Admin	844-8552		lcsell@sandia.gov
23.						
24.						
25.						

# Contractors Quarterly Safety Seminar Sign-In Sheet

PRINT CLEARLY

	Company	Name	Position (Safety Officer, Foreman, etc.)	Office Phone	Cell Phone	Email Address
1.	SNL	William Terry	SOL	845-0000		wterry@snl.com
2.	SNL	ERNEST VINSANT	Environmental	284-2507	284-2507	evinsan@sandia.gov
3.	SNL	Fred Shelly	IH	284-6320		fshelly@sandia.gov
4.	J.B. Henderson	Kerry Soileau	Safety Manager	282-8955	975-2753	ksoileau@jbhenderson.com
5.	J.B. HENDERSON	JOHN J. ORTEGA	SAFETY REP	975-2329	975-2329	jortega@jbhenderson.com
6.	J.B. Henderson	Don Meaders	Foreman	975-5855	975-5855	wendbatcher@earthlink.net
7.	SAMCON/Safety Solutions	JAMES UGILL	Safety Rep	341-8000	991-3565	james@safety-solutions.com
8.	ALPHA Construction Services	John Martinez	Safety officer	610-4163	530-4121	ALPHA.Roof.com
9.	ENTERPRISE ELECTRICAL	ANTONIO BONCALES	SAFETY	275-9369	319-4411	antonio@entel.com
10.	Summit Const. Co.	RAYMOND MOYA	Safety	842-8113	980-4405	raym@summitconst.com
11.	SDV Construction Inc.	Marvin D. Duncan	Project Engineer	243-1266	903-0164	marvin@sdvconstruction.com
12.	BRYCON Construction	Vic Olesen	Safety	893-6163	250-1764	volesen65@msn.com
13.	ECI	Scott Gifford	Safety Foreman	268-9930	489-7716	sgifford.eci@concast.net
14.	RUPERT PLUMBING CO INC	RICHARD RUPERT	Owner	247-8138	828-0234	RICHARD@RUPERTPH.COM
15.	SNL/ASAP	Carlos Giron	CO	284-3332	238-9917	CGIRON@SANDIA.GOV
16.	SNL	Sammy Lopez	COA	844-2264	350-5481	SLOPEZ@SANDIA.GOV
17.	SNL	Rick DeLaRosa	inspections	284-3700	239-6591	rdelaro@snl.com
18.	DOE-SSO	Wayne Walker	FR	845-4240		wwalker@doeal.gov
19.	Andrew Zettler SNL	Andrew Zettler	Safety Eng	284-8808		azettl@sandia.gov
20.	Rupert Plumbing & Heating	Chris A. Augster	SO/PM	247-8138-12	321-0497	Chris@rupertph.com
21.	Rupert P&H	DANE SEXTON	JPF	247-8138	363-8565	N/A
22.	RUPERT P&H	RAY L. WOLF III	PIPEFITTER FOREMAN	247-9158-15	35-4278	N/A
23.	RUPERT P&H	CARLOS LUCERO	SUPERVISOR	247-8138	341-0762	CARLOS@RUPERTPH.COM
24.	DBE Dards	Kenny Eschey	P.M.	299-4464	971-3073	keschey@electronic-sana.com
25.	Ra Orion/Sandia	Pamela Sayers	Safety	284-4606		psayers@sandia.gov

# Contractors Quarterly Safety Seminar Sign-In Sheet

PRINT CLEARLY

	Company	Name	Position (Safety Officer, Foreman, etc.)	Office Phone	Cell Phone	Email Address
1.	SNL	Robert Maranillo	ESH	815-1335	739-1805	remaran@sandlog.com
2.	SNL/4827	Bruce Bryant	ESH	844-2986	238-0850	bbryant@sandlog.com
3.	SNL/04824	Nick Durano	PM	844-9361	238-0650	ndurano@sandia.gov
4.	Coronado	Greg Ortiz	PM/Foreman	877-2921	975-5415	
5.	Cross Connection IN	Phillip Ramirez	SO/superintendent	344-4834	507-2345	
6.	Tom Garcia					
7.	Enterprise Electric	Tom Garcia	PM	275-9369x17	319-6763	tgarcia@entelcomm.com
8.	Del Rio Enterprises, Inc.	Jim Morrow	TM	341-9055	228-7074	jmorrow@drei-nm.com
9.	" " " "	NEIL LUNDY	PM	" "	977-5898	nlundy@drei-nm.com
10.	" " " "	Emilie Lopez		" "	239-7116	
11.	DEL RIO ENT.	MIKE CANNELLY		341-9055	2350956	
12.	WOODWARD METAL CO	JAMES WOODWARD	SAFETY OFFICER	237-1122	610-6812	jwoodward@woodwardmetal.com
13.	Woodward Metal Co	Michelle Rinera	PM	237-1122	385-6740	
14.	TEF Construction	Emily Miller	Safety	292-343	219-0435	TEFconst@aol.com
15.	Business Environments	Mike Daniel	ops/ISO	830-7872	401-0444	mdaniel@businessenvironments.com
16.	EESI	JOEY SOLIS	PM	275-9369	804-3842	JSOLIS@EETELCOMM.COM
17.	Summit	Tito Vigil	Sup	842-8113	489-6992	tito.v@summit-const.com
18.	SNL/4826	Patsy Rowland	PM	844-5315		pkrowla@sandia.gov
19.	SNL/4826	KAREN PRINKE	PM	284-9717		koprinke@sandia.gov
20.	Compa/4826	Carol Bicher	PM	284-1748		cbicher@sandia.gov
21.	TRIANGLE PAVING	ANTHONY TAGLIALEGANI	SO / super	247-2970	250-0488	TRIPAVE@aol.com
22.						
23.						
24.						
25.						