FY08 1st Quarter Construction Contractor Safety Seminar

Mountain View Club, 2:00 – 4:00 PM

October 16, 2007 Meeting Minutes

Speakers: Introduction, Agenda & Preliminary Lessons Learned: Greg Kirsch, ES&H Program Manager for FMOC, Dept. 4841, Office Phone: 845-9497, Mobile 280-1920, e-mail: Gckirsc@sandia.gov

Lessons Learned - Contractor Trips 110 Volt 20 Amp Breaker during Dowcraft Wall Panel Removal, Greg Kirsch and Contractor Perspective

Lessons Learned - Anchor Points Utilized for Fall Protection Re-Roofing Project were Installed Incorrectly, Greg Kirsch and Contractor Perspective

Lessons Learned - Construction Electrical Apprentice Cuts Energized Conductor Prior to Performing LOTO and Zero Voltage Verification Testing, Greg Kirsch and Contractor Perspective

SNL Lockout Tagout Requirements: Rob Maranville, ES&H Specialist, Dept. 4841, Office Phone: 845-1335, Mobile 239-1865, e-mail: remaran@sandia.gov

Lesson Learned Contractor Perspective - Pro-Press Tool Break, Greg Kirsch and Contractor Perspective

Safety Observations Summary and Injuries: Greg Kirsch

Failure to Follow Hazardous Energy Control Procedures by Contractor, Greg Kirsch and Contractor Perspective

FMOC Expectations for Supervisory Methods on FMOC Construction Projects: Greg Kirsch

BBS Trends & Analysis (Jun - Aug): William Tierney, BBS Steering Committee, Office Phone: 845-0633, Pager: 530-1343, e-mail: wjtiern@sandia.gov

Summary

There were 42 attendees and 16 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 two recent occurrences. He also noted an opportunity for improvement during the demolition of some insulated copper piping, a contractor accidentally cut into a ½" conduit.

- Fall Protection – An electrical contractor failed to utilize a fall protection system at a height greater than 6 feet.
- Unexpected discovery of hazardous energy – A demolition contractor contacted a gas line while removing fence posts with heavy equipment.

Lessons Learned Contractor Perspective

There were four construction occurrences and one injury in the 4th Quarter of FY07. Greg Kirsch presented each event and the respective contractors gave their perspective and lessons learned. See the Power Point slides for detailed information.

- Contractor Trips 120 Volt 20 Amp Breaker during Dowcraft Wall Panel Removal
- Anchor Points Utilized for Fall Protection Re-Roofing Project were Installed Incorrectly
- Construction Electrical Apprentice Cuts Energized Conductor Prior to Performing LOTO and Zero Voltage Verification Testing
- Failure to Follow Hazardous Energy Control Procedures by Contractor at ZR Project
- Injury - Pro-Press Tool Break

Rob Maranville - SNL Lockout Tagout Requirements

A review of Lockout/Tagout (LO/TO) requirements at Sandia was presented. Topics discussed were OSHA and NFPA regulations governing LO/TO at SNL. A brief review of proper steps for performing LOTO was presented, as well as NFPA70E zero energy verification requirements, OSHA written LO/TO requirements and exceptions, OSHA group LO/TO procedures, and NFPA70E Complex LO/TO requirements and procedures.

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 July – September 2007.

Greg Kirsch – FMOC Expectations for Supervisory Methods on FMOC Construction Projects

Greg presented a summary of requirements of supervision in the 01065 Specification, and the DOE 10CFR851. Tools were also provided to improve supervisory methods for construction and service contractors.

William Tierney – BBS June – August 2007 Data Review

William presented the BBS Data summary for June – August 2007. There were a total of 953 observations during this period.

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: **January 22, 2008**
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.

QUARTERLY CONSTRUCTION SAFETY SEMINAR

SNL FACILITIES

October 16, 2007

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.

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Agenda

2:00 PM	Introduction
2:05 PM	Preliminary Lessons Learned: Greg Kirsch
2:10 PM	Lessons Learned Contractor Perspective:
	Contractor Trips 110 Volt 20 Amp Breaker during Dowcraft Wall Panel Removal
	Anchor Points Utilized for Fall Protection Re-Roofing Project were Installed Incorrectly
2:20 PM	Lesson Learned Contractor Perspective - Construction Electrical Apprentice Cuts Energized Conductor Prior to Performing LOTO and Zero Voltage Verification Testing
2:30 PM	SNL Lockout Tagout Requirements: Rob Maranville
2:40 PM	Lesson Learned Contractor Perspective - Pro-Press Tool Break
2:50 PM	Safety Observations Summary and Injuries: Greg Kirsch
3:00 PM	10 Minute Break
3:10 PM	Lessons Learned Contractor Perspective– Failure to Follow Hazardous Energy Control Procedures by Contractor
3:25 PM	FMOC Expectations for Supervisory Methods on FMOC Construction Projects: Greg Kirsch
3:35 PM	BBS Trends & Analysis (Jun - Aug): William Tierney
4:00 PM	Closing: Greg Kirsch

Preliminary Lessons Learned

Greg Kirsch
ES&H Program Manager

Occurrence Descriptions

- Fall Protection – An electrical contractor failed to utilize a fall protection system at a height greater than 6 feet.

- Unexpected discovery of hazardous energy – A demolition contractor contacted a gas line while removing fence posts with heavy equipment.

Opportunity For Improvement

- During the demolition of some insulated copper piping, a contractor accidentally cut into a ½” conduit that contained three #12 conductors.
  - The contractor had cut the last piece at the end of the day.
  - The worker did not adequately investigate the new location to be cut.
  - The ½” conduit was not visible behind the large insulation.

Lessons Learned
Tripped Electrical Breaker and
Fall Protection Anchor Point Failure

Presented by:
Scott Gifford, Safety Officer

Events

- Tripped Electrical Breaker
- Fall Protection Anchor Point Failure

Purpose

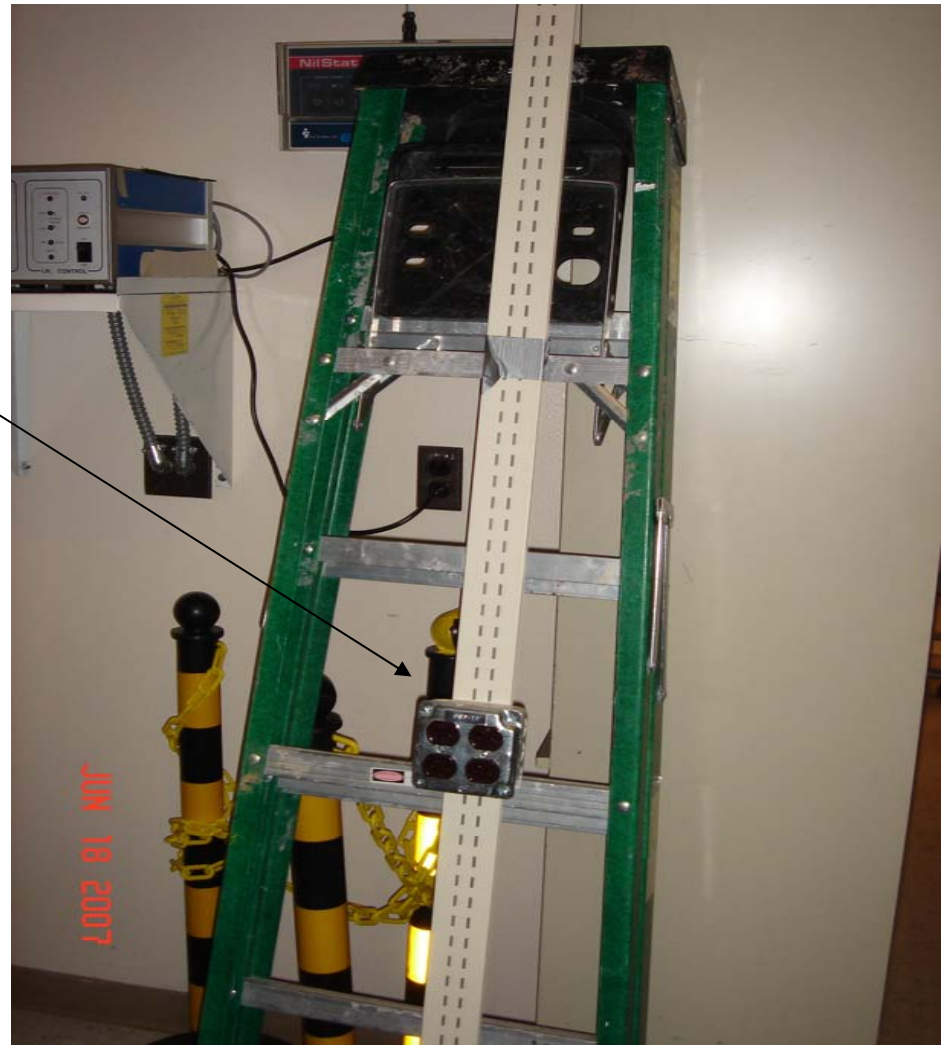
- To share our experience with others.
- Prevent similar situations.
- Protect workers through awareness.

Lessons Learned
Tripped Breaker

- June 2007, a crew was working in the basement of a building removing Dowcraft panels for a remodel project. The task consisted of relocating 2 doors which required swapping wall panels to make the new configuration work.
- The electrical subcontractor was not on site that day as they were caught-up with their demolition activities.
- When the crew encountered a surface mounted receptacle located on the channel cap strip adjacent to a panel that needed to be removed, they presumed that the receptacle was de-energized.
- This is where they should have stopped and evaluated the situation.

Lessons Learned

Channel with receptacle



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Lessons Learned

- The crew proceeded to remove the cap strip which held the receptacle and noticed the conductors were not in the conduit.
- They made the decision to continue with removing the panel. It was during this process that a corner of the panel snagged the wire and pulled on it.
- This caused the circuit to short and trip the breaker at the panel.
- No one received a shock.

Lessons Learned

- Work was immediately stopped and SNL was notified.
- The area was barricaded with caution tape and the electricians were called to make repair.

Corrective Actions

- We reviewed the lesson learned from this incident with the workers stressing the following:
  - Reminding workers of the company's safety plan requirement to stop work when unexpected conditions are encountered or new hazards are identified;
  - Workers or the foreman should have notified the electrical subcontractor to remove the conductors so that the wall panels could be removed and relocated in a safe manner;
  - Workers have the right and responsibility to stop and evaluate all work which appears to be hazardous. There will not be any negative consequences for stopping work even if the activity is determined to be safe.

Fall Protection – Anchor Failure

- Subpart M – Fall protection 1926.502
- June 2007, two Prime Construction contractors worked together under separate contracts to install a new roof on a building. Each company had clearly defined roles and responsibilities, with one Prime Contractor to provide a fall protection system (anchors) for all the workers on the roof.
- Due to a communication breakdown, one of the systems failed as the installation was incomplete.
- Fortunately, no one was injured.

Lessons Learned

- The type of system involved consists of a metal plate and a “D” ring which is secured to a solid surface using all-thread (threaded rod) set in an epoxy adhesive. The metal plate is then secured with fasteners.
- The task was carried out to the point of being complete except for the installation of the fasteners (metal nuts) as the correct size was not on site and not available.
- An order for the fasteners was made but the assembly was left incomplete.
- This took place on a Friday.

Lessons Learned

- The lead foreman left for vacation the following Monday without telling his supervisor that the work had not been completed.
- The lead foreman did leave instruction with the carpenter in the field to finish the task.
- Unknowingly, the supervisor re-assigned that carpenter to a new task.
- When that worker moved to the new project, he thought the other workers were aware of the situation and would finish the task.

Lessons Learned

- The next Saturday morning, the roofers came onto the jobsite and had moved into the area of the incomplete assembly.
- When they hooked onto the D-ring with their safety lanyard, the missing fasteners went unnoticed.
- The D-ring pulled on the metal plate causing it to slip over the unfastened all-thread and fall off.
- We met with the Project Superintendents to ensure a clear understanding of roles and responsibilities with regard to tracking work activities

BBS Behaviors
Re-Roof Anchor Points

- Pre-Job Inspection
  - Review anchor point prior to starting work
- Task Coordination Among Workers
  - Whenever work is performed by another contractor, there should be transfer process
- Tool/Equipment in Good Condition
  - Always verify that equipment is ready for use

Electrical Apprentice Cuts Energized Conductor

Contractor's Perspective

Electrical Apprentice Cuts Energized Conductor

- While preparing VAV J-boxes in a building, an electrical apprentice cut the electrical supply conductors to a VAV box, thinking (assuming) that it was being fed from the same circuit that fed the previous box that he had prepared and checked.

Electrical Apprentice Cuts Energized Conductor

- While preparing for upgrading the VAVs, it was determined that there were several circuits being fed from several different distribution panels. It stands to reason that there is a likelihood that the same colored conductors, from two different sources, in two different rooms can be utilized to power two VAV boxes in a single room. One circuit can be de-energized and the other can be energized, or of course both could be de-energized, as well as energized.
- Under any circumstance, the rule to “NEVER ASSUME,” still applies.

Electrical Apprentice Cuts Energized Conductor

- We experienced a communication breakdown between the journeyman and the apprentice. It was the first day on the jobsite for the apprentice. When he arrived he was not fully aware of the potential for different power sources. When the journeyman presented this information, it may not have been fully understood by the apprentice.
- In addition, once the incident occurred, the journeyman did not communicate the incident up the field chain of command in a timely fashion. This was due primarily to the fact that he did not realize that the incident was significant enough to be ‘reportable’.

Electrical Apprentice Cuts Energized Conductor

- Our PPE policy for testing for zero voltage at 120V in a J-Box after LOTO has been performed requires:
  - Safety Glasses
  - Voltage Rated Gloves
  - Long Sleeved 100% Cotton Shirt
- Breaking the plane at a panel after LOTO has been performed requires:
  - 15 Calorie Suit (minimum)
  - Full hood
  - Voltage rated gloves.

Corrective Measures Taken

- We conducted our own Job Box Meeting, where the Journeyman and the Apprentice involved were counseled on improving their work performance and procedures. The rest of the field crew were also counseled as to safety and procedural awareness.
- We have made it ‘policy’ to provide workers with a proximity tester. Following a LOTO procedure, and a test for ‘zero voltage’ we will use the Proximity Tester to ‘indicate the presence of a voltage’ as we go from box to box. If a voltage is indicated, we will determine the source, perform another LOTO, and again test for zero voltage.

Corrective Measures Taken

- In addition, we held a company-wide Safety Meeting that included every tradesman and staff member. This meeting had 100% participation and included a Question & Answer period at the end. We have resolved the issue of what is, and is not reportable with all of our personnel. When in doubt, report it. We have taken additional measures to reduce, if not eliminate, the reluctance to report an incident due to the fear of reprisal, both on a personal level as well as a corporate level.
- We have found as a consequence of this incident that it is difficult to coach our people without approaching the 'reprisal' arena yet be forceful enough to not 'trivialize' the situation. We will continue to work on getting it 'just right'.

Lock Out / Tag Out Review (LOTO)

Robert Maranville, ES&H Specialist

LOTO at Sandia

- 2 LOTO Occurrences in 2007
  - Construction Mechanical Craftsperson using individual control on pressured air system.
  - Construction Electrical Apprentice Cuts Energized Conductors
- No injuries as a result of these incidents

LOTO at Sandia

- The 2 LOTO incidents were compared to LOTO occurrences associated with construction in 2005 and 2006.
- There was 1 LOTO incident in 2005 and 2 in 2006. Two of the 3 incidents were electrical LOTO incidents where the worker thought the electrical circuit had been de-energized but failed to ensure through required verification methods - testing.

LOTO Regulations

- OSHA 29CFR1910.147, 1926.417- The Control of Hazardous Energy.
- NFPA 70E - Article 120 – Establishing an Electrically Safe Work Condition.
- SNL 01065 Specification -Environment, Safety, and Health for Construction and Service Contracts.

LOTO Regulations

- OSHA 29CFR1910.147- The Control of Hazardous Energy
  - This standard covers the servicing and maintenance of machines and equipment in which the **unexpected** energization or start up of the machines or equipment, or release of stored energy could cause injury to employees. This standard establishes minimum performance requirements for the control of such hazardous energy.

Control of Hazardous Energy

- "Energy control program." The employer shall establish a program consisting of energy control procedures, employee training and periodic inspections to ensure that before any employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, startup or release of stored energy could occur and cause injury, the machine or equipment shall be isolated from the energy source and rendered inoperative.

LOTO Regulations NFPA 70E

- For Electrical Work – NFPA 70E – Article 120
  - Requires that an electrically safe work condition shall be achieved and verified following requirements found 120.1 and 120.2.

LOTO Procedure

1. Prepare for shutdown.
2. Shut down the machine or equipment.
3. Disconnect the energy isolating device(s).
4. Apply the lockout or tag out device(s).
5. Render all stored and/or residual energy safe.
6. Verify the isolation and de-energization of the machine or equipment prior to starting work.

NFPA 70E Electrical Verification

- Determine energy sources – Drawings, diagrams, ID tags etc.
- Properly interrupt the load current, then open the disconnecting device(s) for each source.
- If possible visually verify
  - Blades of disconnecting devices are fully open
  - Draw-out type circuit breakers are fully withdrawn
- Apply LOTO devices

NFPA 70E Verification

- Use an adequately rated voltage detector to test each phase conductor or circuit part.
- Test each conductor or circuit part
  - Phase-to-Phase
  - Phase-to-Ground
- Before and after each test, check voltage detector for proper operation.

OSHA Procedure Requirements

- OSHA requires written procedures to be developed, documented and utilized for the control of potentially hazardous energy when employees are engaged in the activities covered by this section unless the following conditions can be met.
  - Note: Written procedures must be reviewed annually and authorized workers must have an annual review of their LOTO roles and responsibilities.

OSHA Written Procedure Exceptions

1. The machine or equipment has no potential for stored or residual energy or re-accumulation of stored energy after shut down.
2. The machine or equipment has a single energy source which can be readily identified and isolated.
3. The isolation and locking out of that energy source will completely de-energize and deactivate the machine or equipment.
4. The machine or equipment is isolated from that energy source and locked out during work activity.

OSHA Written Procedure Exceptions

5. A single lockout device will achieve a locked-out condition.
6. The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance.
7. The work activity does not create hazards for other employees.
8. The employer, in utilizing this exception, has had no accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.

NFPA 70E Written Procedure Requirements

- NFPA states that a written procedure shall be written for what is identified as complex LOTO. Complex LOTO is defined as when one or more of the following exists.
  - Multiple Energy Sources
  - Multiple Crews
  - Multiple Crafts
  - Multiple Location
  - Multiple Employers
  - Different Disconnecting Means
  - Particular Sequence
  - Continues for more than one work period (shift change)

NFPA 70 E Written Procedure Requirements

- NFPA 70 E Procedure should identify:
  - Person in charge (PIC)
  - PIC is responsible for safe execution of plan
  - Plan shall address all concerns of possibly exposed employees
  - Written plan of execution
  - Means for accounting for all persons who might be exposed to hazards during the course of the LOTO

OSHA Group LOTO

- OSHA – 1910.147 (f)(3) Group lockout or tagout
  - When servicing and/or maintenance is performed by a crew, craft, department or other group, they shall utilize a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lockout or tagout device.
  - Primary responsibility is vested in an authorized employee for a set number of employees working under the protection of a group lockout or tagout device.

OSHA Group LOTO

- Provision for the authorized employee to ascertain the exposure status of individual group members with regard to the lockout or tagout of the machine or equipment
- When more than one crew, craft, department, etc. is involved, assignment of overall job-associated lockout or tagout control responsibility to an authorized employee designated to coordinate affected work forces and ensures continuity of protection
- Specific procedures shall be utilized during shift or personnel changes to ensure the continuity of lockout or tagout protection

LOTO - Individual Control

- NFPA 70 E identifies individual control as an acceptable means of LOTO, but OSHA does not. **Therefore, individual control is not allowed for LOTO at SNL.**
- Example: An electrical disconnect is used to de-energize a pump. The disconnect must be locked and tagged out of service even if the authorized worker is standing right next to the disconnect and therefore has “control” while performing work on the pump.

LOTO – Cord and Plug

- OSHA does allow work on cord and plug connected electric equipment for which exposure to the hazards of unexpected energization or start up of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.

LOTO Questions

1. Can individual control be used at SNL?
2. Is a written procedure required if multiple employers are involved in the work activity?
3. What is group lockout tagout?
   a) When more than one authorized worker applies a lockout/tagout device.
   b) When a single person applies LOTO for a group of workers.

LOTO Questions

4. Is a written procedure required when the equipment has multiple sources?
5. Is a LOTO lock and tag required when working on cord and plug connected equipment?
6. Does NFPA 70E identify hazardous energy control requirements for steam lines?

Your Questions?

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ProPress Tool Break

Contractor's Perspective and Actions

The Incident

- While working at Sandia, an employee was working on the installation of some piping with the aid of a ProPress machine. While using this device, the collets broke while the device was under pressure, hitting the individual on the leg.


RIDGID
Pro Press

Post Incident Actions

- The employee was monitored, and treated with first aid.
- The broken device was barred from use pending investigation and recovery plan.
- The pieces of the device were gathered, photographed, and sent to the manufacturer for analysis.
- The manufacturer worked with our employees to gain needed information.

Post Incident Actions (cont.)

- The collets were found to have metallurgy issues, which were addressed by the manufacturer.
- A recall was issued on the range of collets suspected of being defective. A retrofitted guard was designed, implemented, and made available to all users.
- We re-trained all users on this product and its new parts, then allowed use of this product to continue.

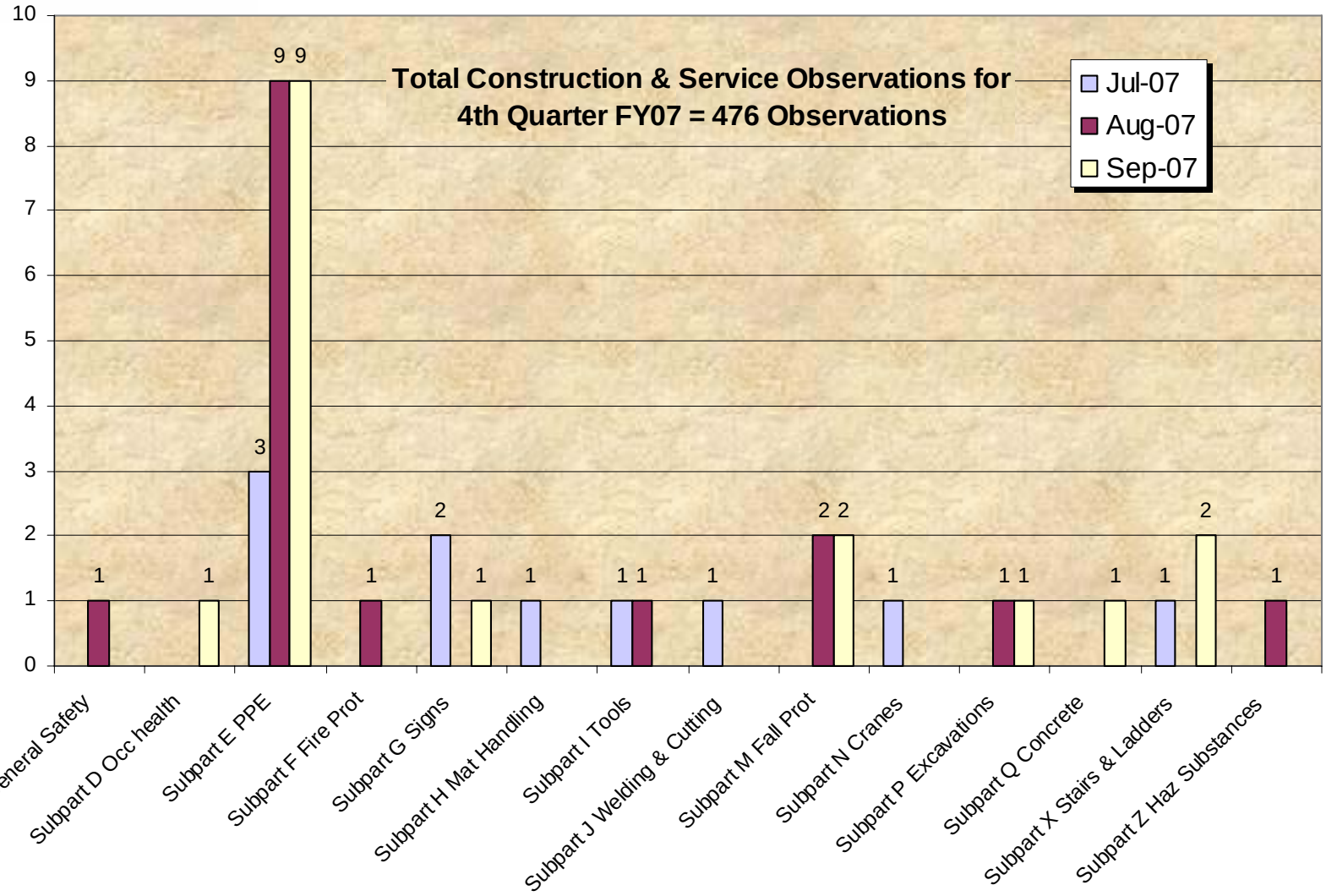
Corrective Action

- Manufacturer's Recommendations:
  - Follow RIDGID Strap Retrofit of ProPress XL/R2 Press Rings
  - If you have any questions, please contact Ridge Tool Technical Services at (800) 519-3456 or TechServices@ridgid.com.

Safety Observations Summary

Greg Kirsch
ES&H Program Manager

Non-compliant Observations
OSHA 1926 for Jul - Sep 2007



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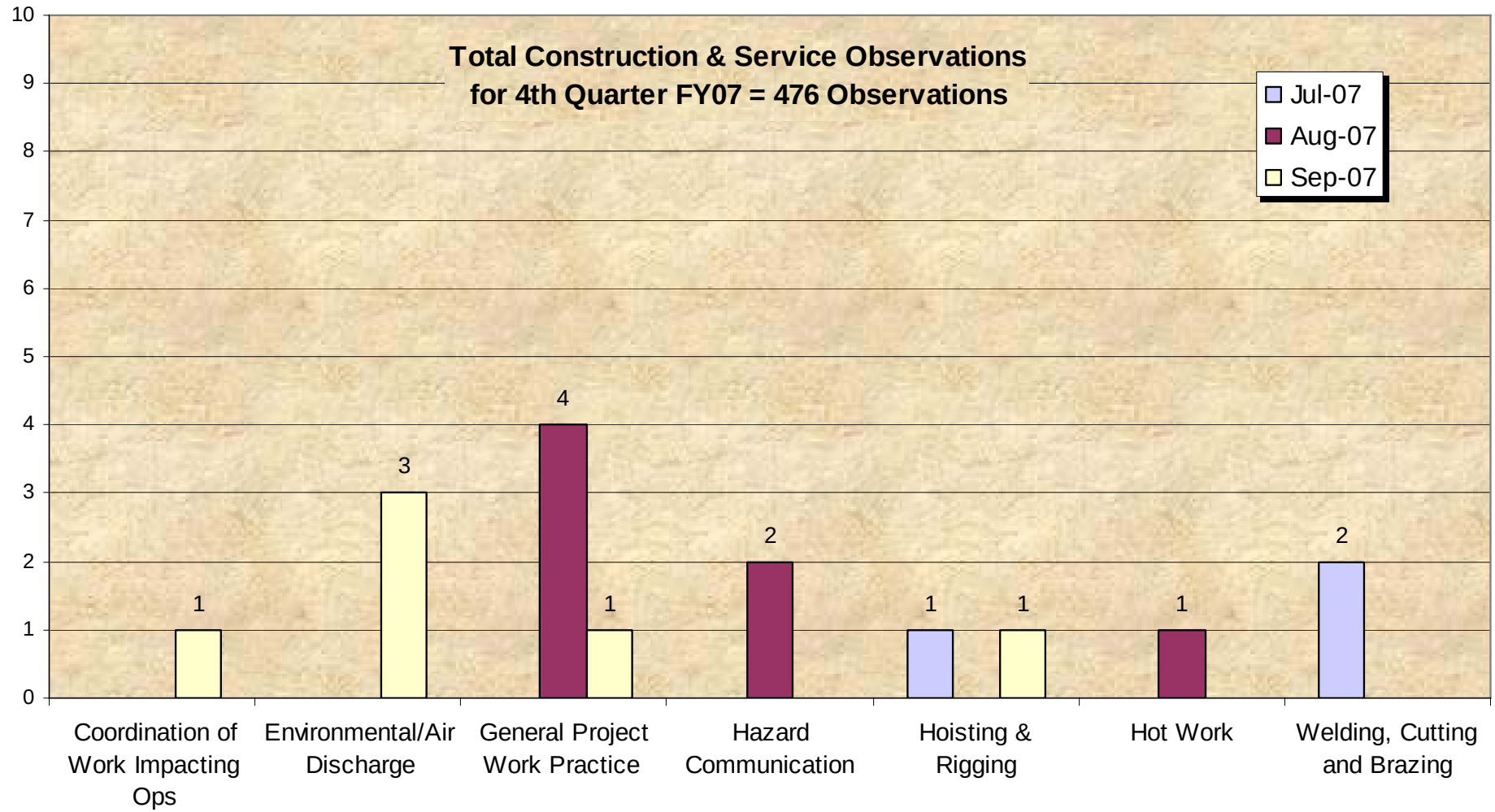
Non-compliant Observations
01065 Spec for Jul - Sep 2007



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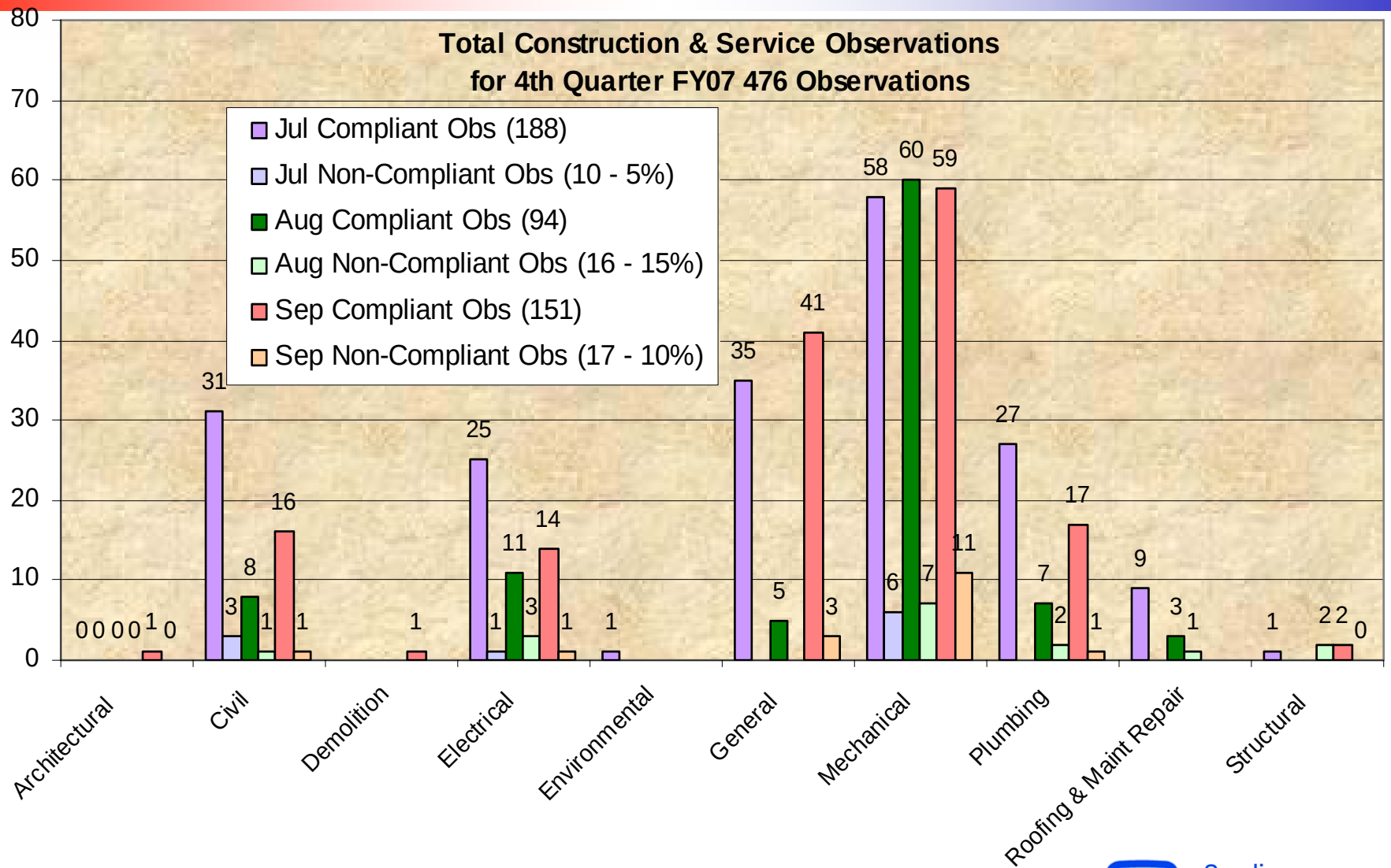
Compliant vs. Non-compliant Observations by Discipline Jul - Sep 2007



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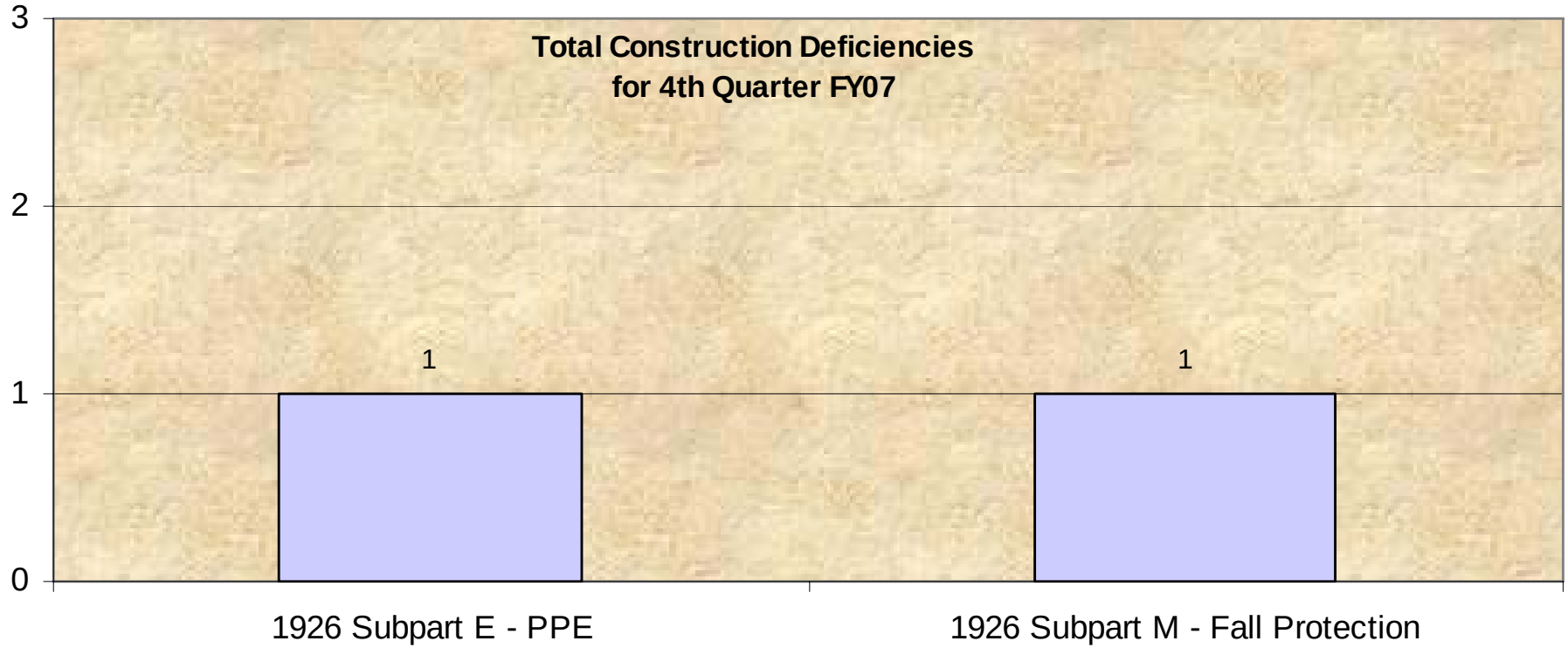
Construction Deficiencies



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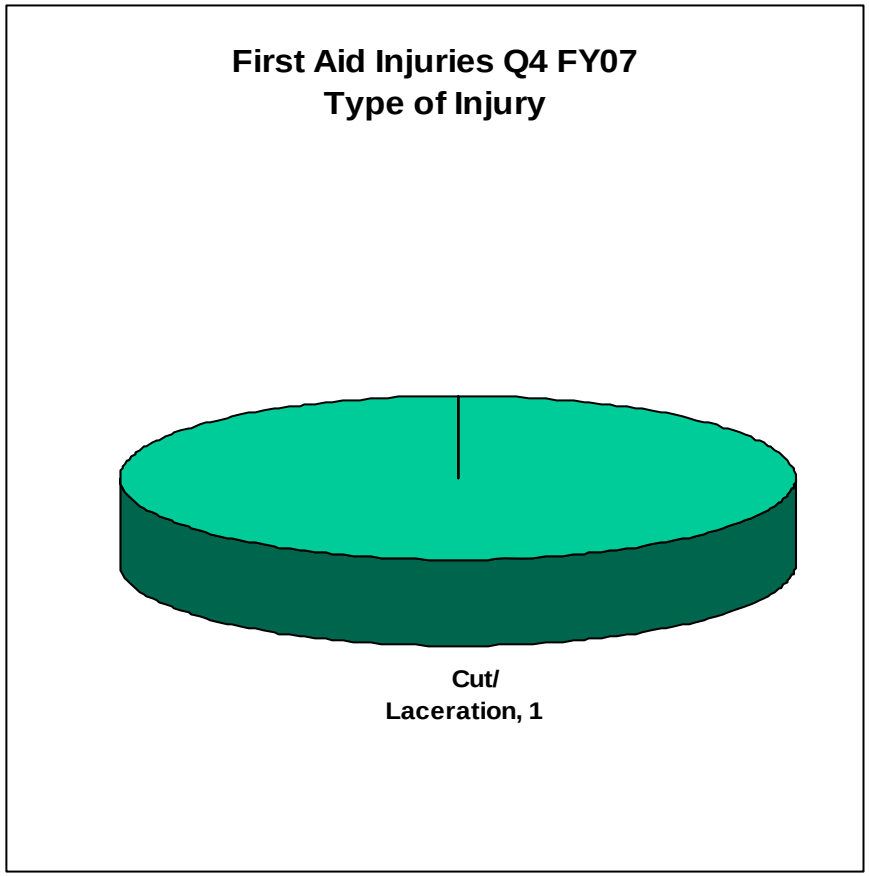
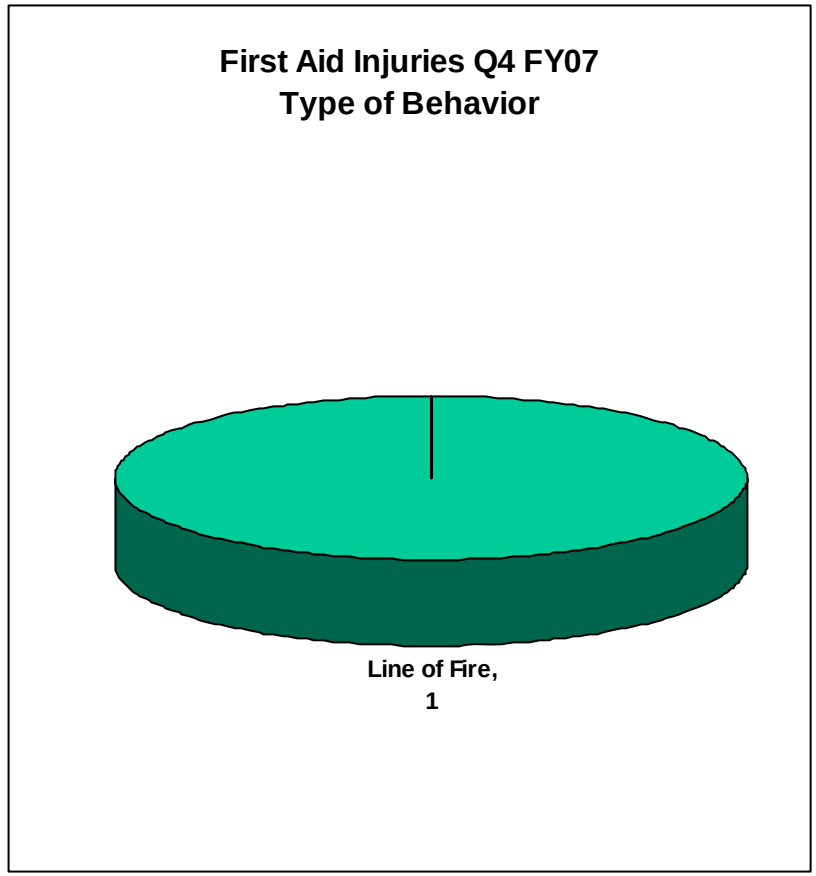
First Aid Injuries
Type and Behavior





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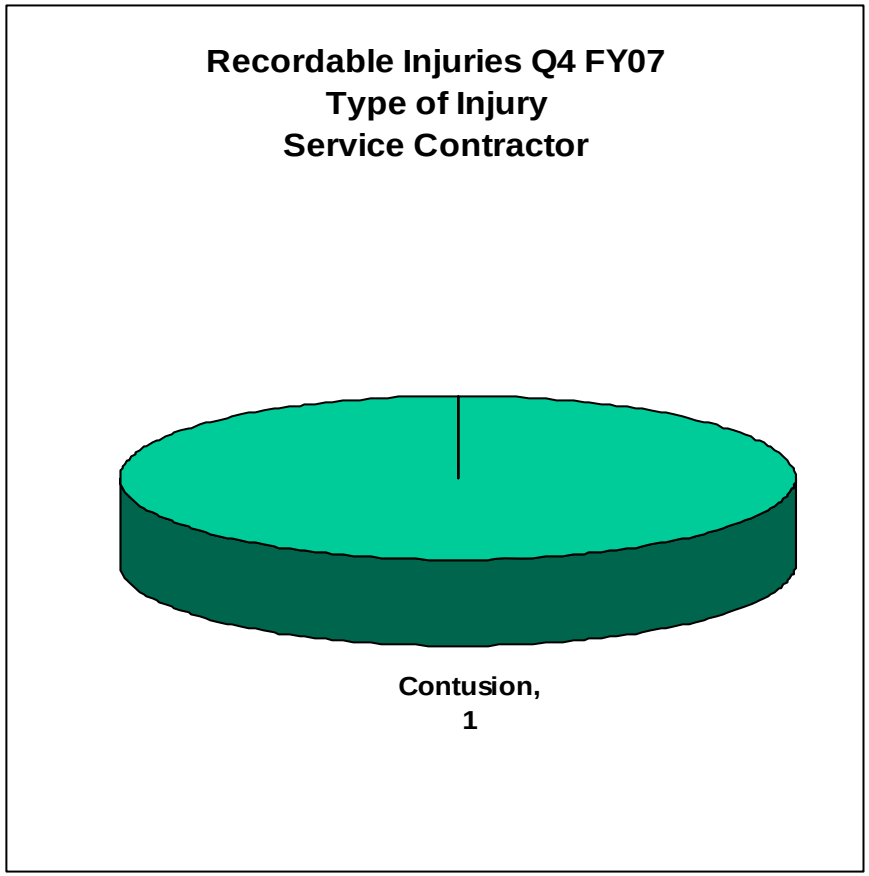
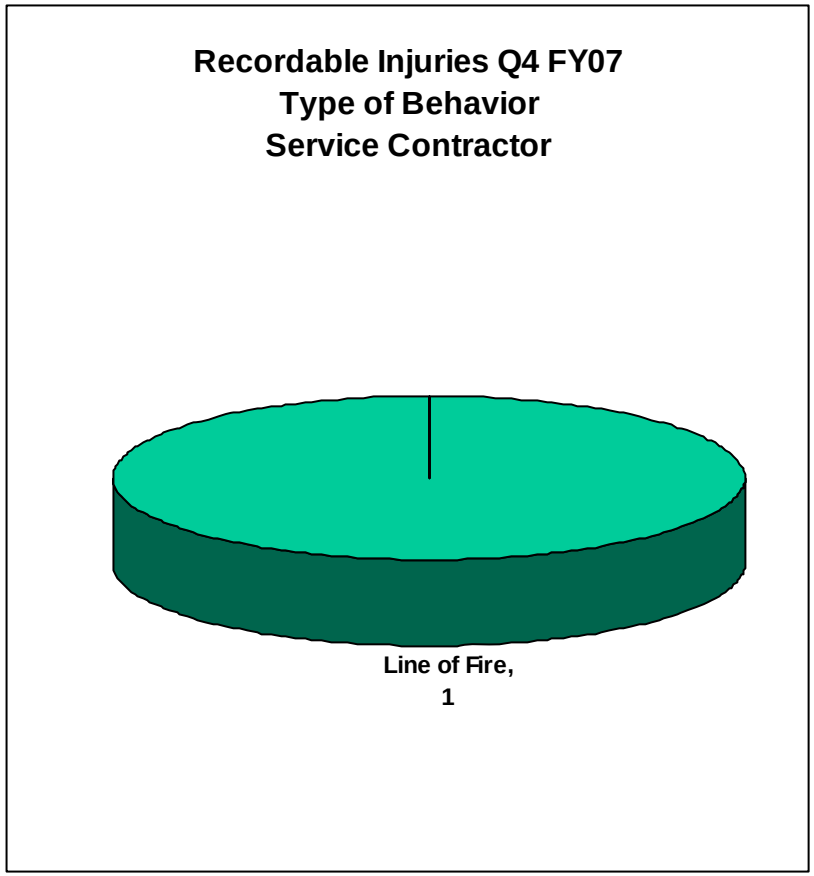
Recordable Injuries
Type and Behavior





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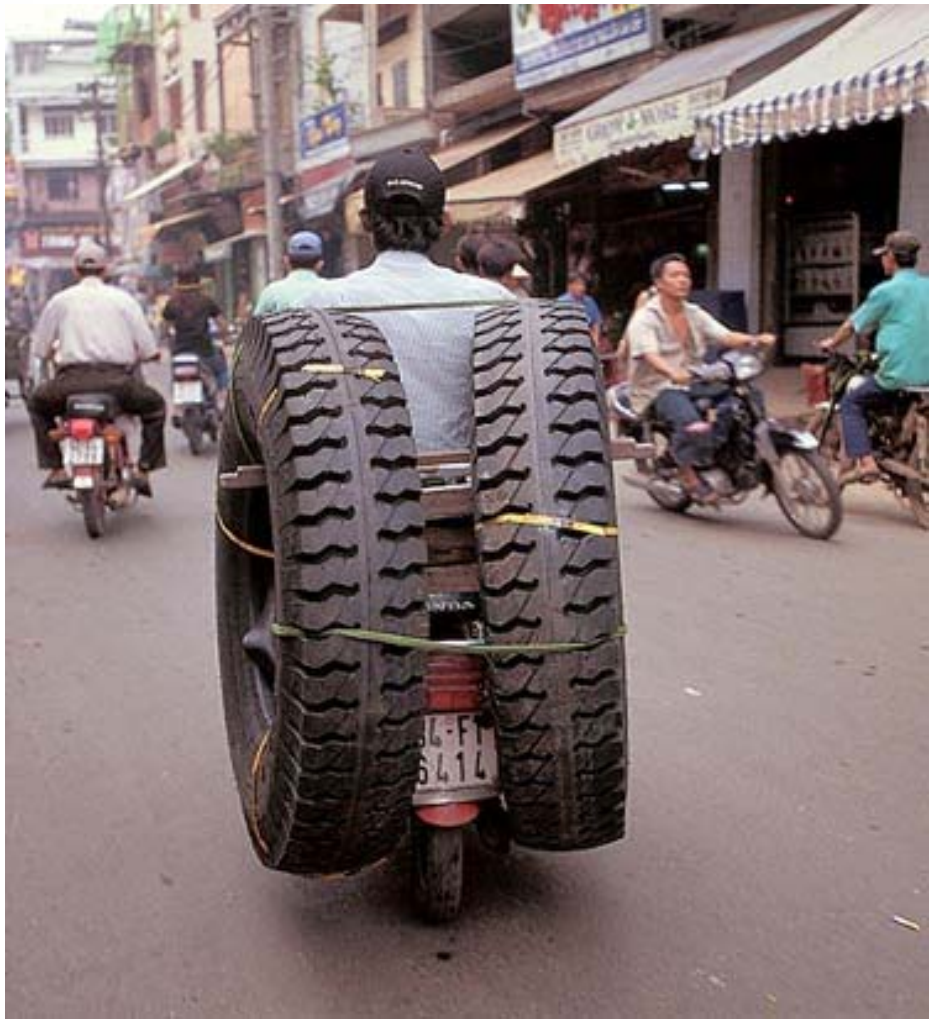
10 Minute Break



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Lessons Learned – Failure to Follow Hazardous Energy Control Procedures by Contractor

Contractor's Perspective

Event

- On 5/29/07, a mechanical construction contractor failed to follow hazardous energy control procedures during installation of four 3/4“ x 3/4“ x 1/2" copper tees to a 3/4“ copper compressed airline system in a building. The compressed air system was initially shut down (depressurized) on 7/22/06 by building operations personnel in preparation for the project, and was re-pressurized on 5/24/07 by building operations personnel to work on and test controls.

Event

- The construction mechanical craftsperson was present when the copper compressed airline system was pressurized by building operations personnel on 5/24/07. Prior to installation of the four tees, the mechanical craftsperson performing the work activity verified that the main ball valve on the compressed airline system was off (Line of Sight) and verified that the system was depressurized by operating a valve on the line.

Event

- It was determined that the potential force that could have been generated by the 3/4" line at 120 psi was approximately 53 lbs of force. It was agreed that this constituted sufficient force to be considered hazardous energy and was identified in the Prime Mechanical Contractor's Safety Plan as hazardous energy.

Lessons Learned
Purpose of LOTO

- Any time there is a value (pressure, vacuum, & voltage) on a **hazardous** system that impacts the worker there must be a LOTO.
- Individual control is not an acceptable means of LOTO.

Lessons Learned
Bad Assumptions

- Assumed that system had no value (pressure), and therefore, it was safe to work on.
- Assumed that isolation valve was in sight, and therefore, did not need LOTO.
- Assumed that someone else had ensured the system was in a safe condition to work on.

Corrective Action

- Stop work.
- Investigate the event.
- Re-train all workers on LOTO.
- Develop clearer procedures on the roles and responsibility for LOTO of systems.

Construction Superintendent Methods

Greg C. Kirsch

Why are we Reviewing "Superintendent" Responsibilities?

Supervisory Methods was identified as a recurring cause for three recent occurrences:

- No LOTO on Pressurized Air System: Supervisory Methods Less Than Adequate (LTA); Tasks and individual accountability not made clear to worker
- Roofing Anchor Points: Supervisory Methods LTA; Progress/status of task not adequately tracked
- Roofing Anchor Points: Supervisory Methods LTA; Direct supervisory involvement in task interfered with overview role
- Apprentice cuts Energized Conductors: Supervisory Methods LTA; Assignment did not consider worker's need to use higher-order skills

Superintendent Responsibilities

ES&H Standard Specification 01065

- Prime Contractor Superintendent or Delegate: Shall directly superintend the work at all times during performance of this contract (excluding periods of work inactivity), and until the work is completed and accepted.
  1. Superintendent or Delegate shall be knowledgeable of the project's hazards and have full authority to act on behalf of the construction contractor.
  2. Superintendent or Delegate shall perform frequent and regular inspections of the construction worksite to identify and correct any instances of noncompliance with the CSSP.

Superintendent Responsibilities

3. Workers of all tiers shall be instructed to report hazards not previously identified or evaluated to the Superintendent or Delegate. If immediate corrective action is not possible or the hazard falls outside of project scope, Superintendent or Delegate shall perform the following:
    a. Immediately notify affected workers.
    b. Post appropriate warning signs.
    c. Implement necessary interim control measures.
    d. Notify the Construction Observer of the action taken.

10 CFR 851 Worker Safety & Health Program

- DOE expects its contractors to have the proper management and supervisory systems in place to assure that all activities at covered workplaces, regardless of who performs them, are carried out in compliance with all the worker safety and health requirements. Therefore, contractors are normally held responsible for the acts of their employees and subcontractor employees in the conduct of activities at covered workplaces. Accordingly, this policy should not be constructed to excuse personnel errors.

10 CFR 851

- Workers must be instructed to report to the construction contractor's designated representative, hazards not previously identified or evaluated. If immediate corrective action is not possible or the hazard falls outside of project scope, the construction contractor must immediately notify affected workers, post appropriate warning signs, implement needed interim control measures, and notify the construction manager of the action taken. The contractor or the designated representative must stop work in the affected area until appropriate protective measures are established.

Practical Actions/Methods

Supervisory Methods

- Tasks and individual accountability made clear to workers
- Progress/status of task adequately tracked
- Appropriate level of in-task supervision determined prior to task
- Direct supervisory involvement in task interfered with overview role
- Emphasis on schedule balanced with emphasis on methods/doing a good job
- Job performance and self-checking standards properly communicated

Practical Actions/Methods

- Consideration of concurrent tasks assigned to worker
- Frequent job or task “shuffling” is assessed for risk
- Assignment did consider worker’s need to use higher-order skills
- Assignment do consider worker’s previous tasks
- Assignment do consider worker’s ingrained work patterns
- Contact with personnel frequent enough to detect work habit/attitude changes
- Provide feedback on positive performance

Management Surveillance

- Issue identified during Facilities Management Surveillance of Superintendent Responsibilities:
  - Workers possessed a language gap for the term Superintendent. Sandia and NNSA have a specific definition for a Superintendent and it does not match the definition used by the construction contractors.

BBS Behavior-
4th Quarter Data Review

Sandia National Laboratories
William Tierney

Sandia National Laboratories

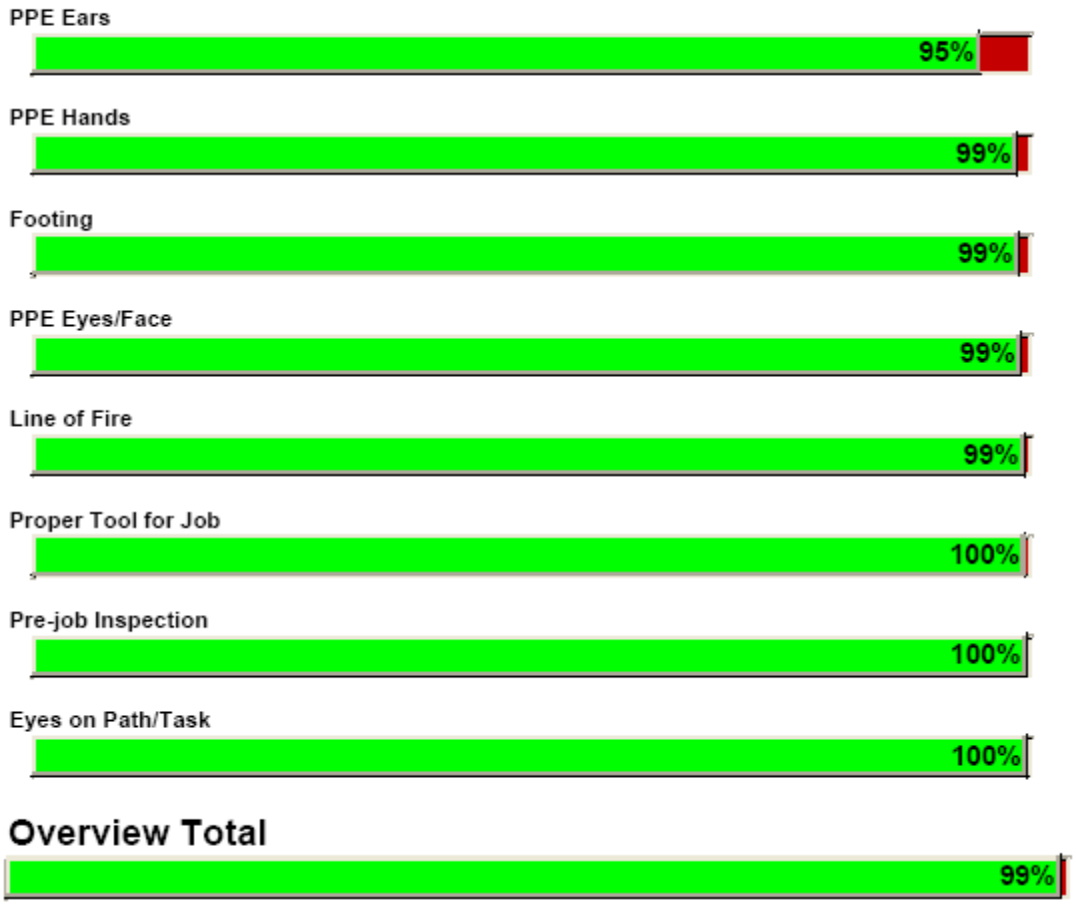
4th Qtr Data Summary

Division 10000

Overview Chart

Dates From: 6/1/2007 To: 8/30/2007
SOS: Construction & Service
Observer Workgroup: Construction & Service

Observations
953



Sandia National Laboratories

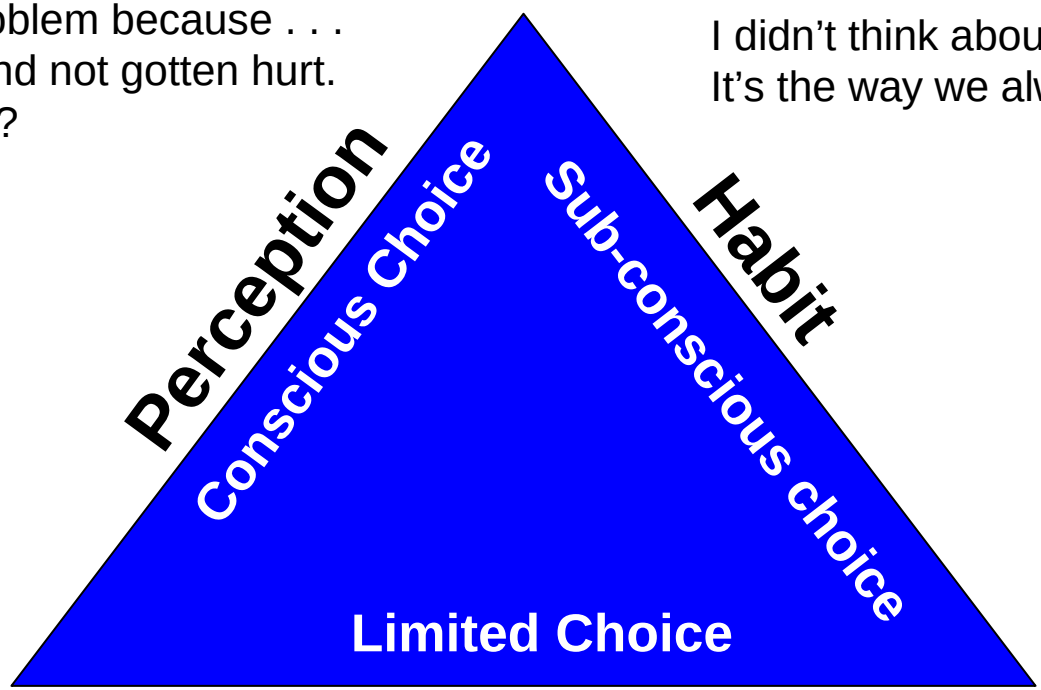
4th Qtr Data Summary

- June 2007-August 2007
- Total of 953 Observations
- Overall % Safe= 99% (98% last qtr)
- Lowest % Safe- One at 95%
  - PPE Ears (Repeat-97% last Qtr)
- Remainder at 99% and 100% safe
- Good Job

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?

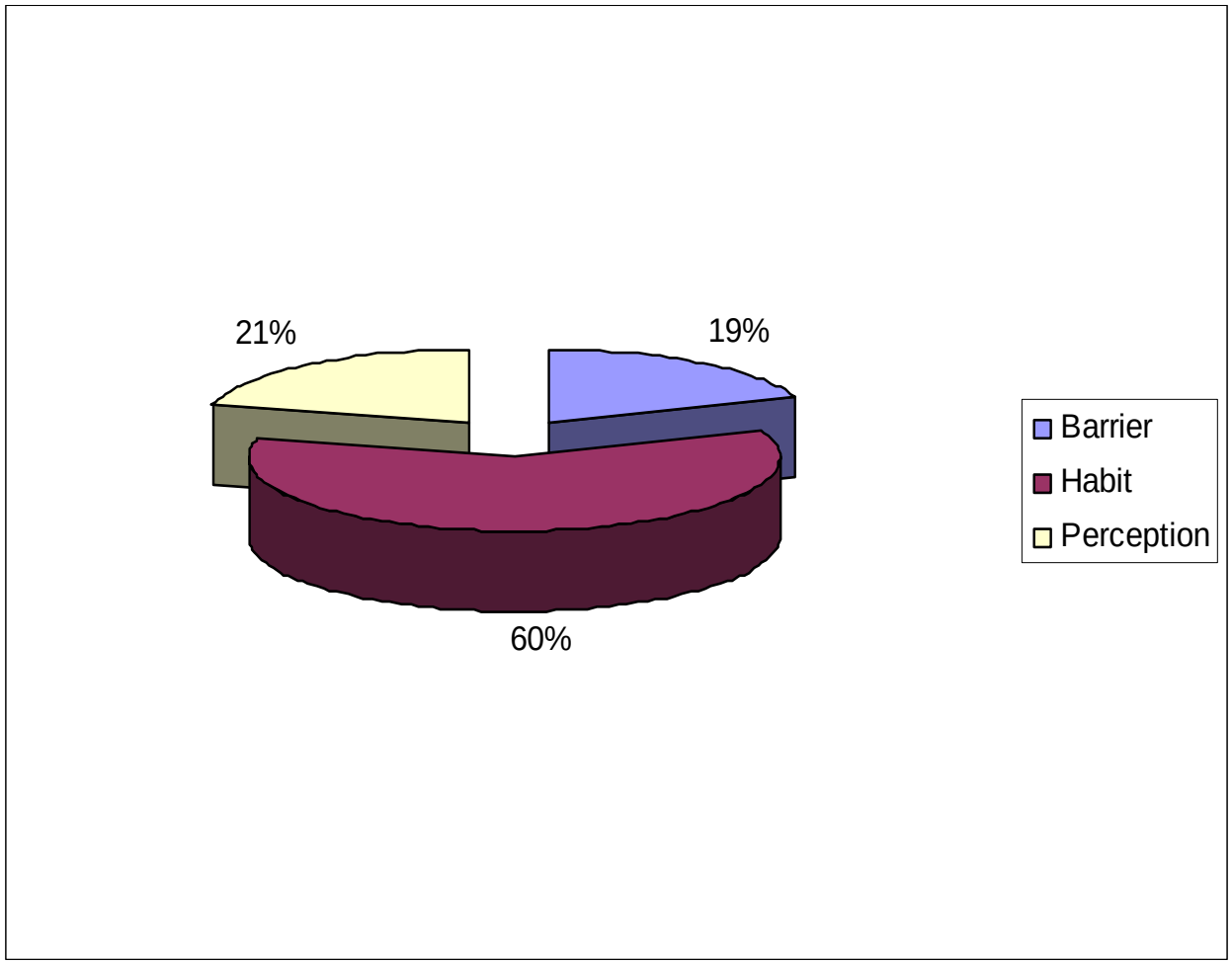
That's the way I always do it!
I don't know.
I didn't think about it.
It's the way we always do it around here



Barriers

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: June-August

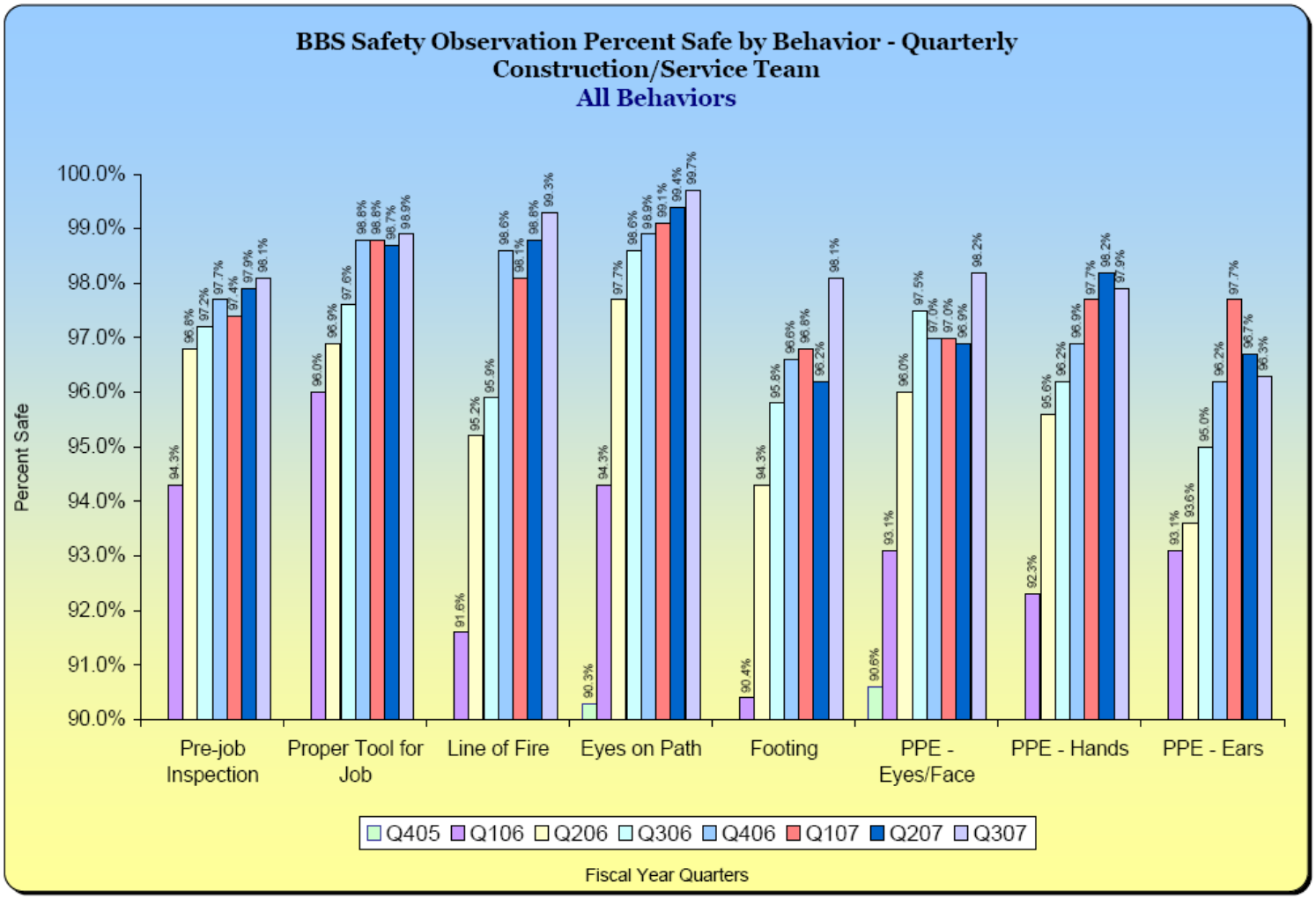


Sandia National Laboratories

Data Analysis

- Habit was largest category
  - Large number of concerns for PPE Eyes/Face and Hands
    - Forgot/Left somewhere
  - PPE Lanyards and email reminder
- Perception was second category
  - Highest number of concerns Pre-Job Inspection (PJI) and Proper Tools
  - Need to educate workers on proper methods/techniques
- Barriers was second category
  - Highest number of concerns PJI and Proper Tools
    - Company does not require PJI
    - Tool not provided
  - Easiest to correct, eliminate barrier once determine what it is

BBS Data-LTD



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BBS Program Updates

- SNL Program Changes
  - Update Behaviors
    - Alignment
    - Get Help
    - Housekeeping
    - PPE Fall/Anchor Point
  - Coaching program
  - October 2007
- Contractor Pilot Program
  - US Electric, Summit: Using ProAct program
  - B&D and MVI: Developed own BBS program
  - First Quarterly Data Presentation this month

Closing Announcements

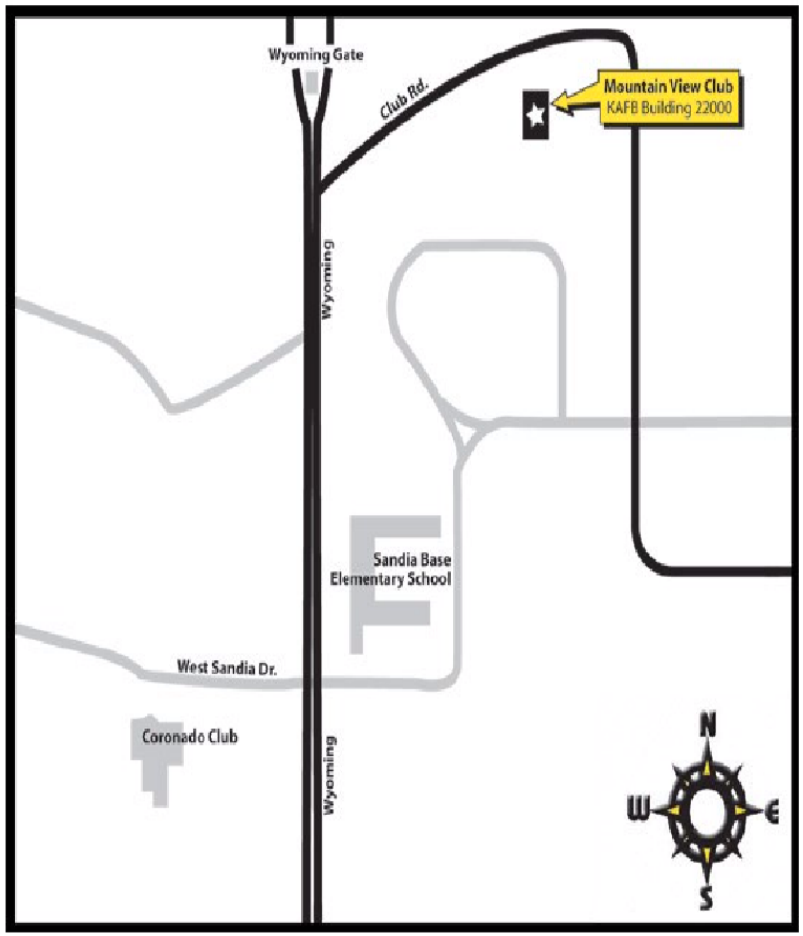
Construction Safety Seminar Schedule

Location: Mountain View Club

Time: 2:00 – 4:00 PM

Next Seminar Dates:

- January 22, 2008
- April 8, 2008
- July 8, 2008
- October 21, 2008



Sandia National Laboratories

Mountain View Club | October 16, 2007 | 2:00 – 4:00 PM

Contractors Quarterly Safety Seminar

Sign-In Sheet

PRINT CLEARLY

	Company	Name	Position (Safety Officer, Foreman, etc.)	Office Phone	Cell Phone	Email Address
1.	EESI	Joey Solis	PM	275-9369x19	804-3842	JSOLIS@ENTELCOMM.COM
2.	EESI	Toby Garcia	P.M.	275-9369x17	319-6763	tgarcia@entelcomm.com
3.	ALPHA Construction	John Martinez	Safety Officer	610-4163		
4.	DEL RIO ENT	Richard Connelly	FIELD SUPR	341-9055	259-8213	
5.	Del Rio ENT	Emilio Tepley		341-9055	239-7116	
6.	Summit	Jto Vail		842-8113	489-6992	jtou@Summitconstr.com
7.	U.S. ELECTRICAL	JAMES GARCIA		260-1000	401-6000	jamesg@uselectricalcorp.com
8.	Summit	MARK THOMAS		842-8113	263-0851	MARK @ Summitconstr.com
9.	Del Rio Enterprises	Brandico Garcia		341-9055		Bgarcia@drei-nm.com
10.	" " "	NEIL LUNDY		" "	977-5898	nlundy@drei-nm.com
11.	DEL RIO ENT. INC.	KEVIN GARCIA	PRESIDENT	341-9055	250-2900	KGARCIA@DREI-NM.COM
12.	ENTERPRISE ELECT.	ANTONIO GONZALES	SAFETY	275-9369	319-4411	ajgonzalesiii@entelcom.com
13.	SANDIA	TROY ROGERS	ELEC INSPEC	235-9672	284-1779	trogers@sandia.gov
14.	Consolidated Service Systems	Anthony Francia	Field Supervisor	247 1475	259 8074	Antonefr@aol.com
15.	Consolidated Service Systems	Robert Sanchez	MGR for Finds	247-1475	363-8036	" "
16.	SNL	JOHN NORDYKE	MGR	894-2099		jknorwo@sandia.gov
17.	AUL	HERMINIO CHAVEZ	SAFETY REP	242-4848	975-1001	herminio@eayi.inc.NET
18.	SNL	William Tierney	PM	845-0693	-	wjtierne@sandia.gov
19.	SNL	Linda Sells	Admin	844-8552		lesells@sandia.gov
20.	SNL	Greg Kirsch	ES&H	845-9447	845-9447	gckirsc@Sandia.gov
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Mountain View Club | October 16, 2007 | 2:00 – 4:00 PM

Contractors Quarterly Safety Seminar
Sign-In Sheet

PRINT CLEARLY

	Company	Name	Position (Safety Officer, Foreman, etc.)	Office Phone	Cell Phone	Email Address
1.	JB Henderson Const. Co	Steven P. Hale	Project Engineer	975-1690	975-1690	shale@jbhenderson.com
2.	JB HENDERSON CONST. CO	JOHN J. ORTEGA	SAFETY REP	292-8455	975-2329	jortega@jbhenderson.com
3.	YEAROUT MECHANICAL INC	DAVID CLARK	SAFETY COORD	314 8234	9912156	DAVIDC@YEAROUT.COM
4.	CONSOLIDATED SERVICE SYSTEMS	AMY NAGY	MANAGER	247-1475		CONSOLIDATEDSERVICE SYSTEMS@CONCAST.NET
5.	BRYCON Corp	PETER M. CALDERON	Project Mgr	892-6163	264-8780	PCALDERON@BRYCON.com
6.	SNL	JAN COUTO	PROJ MGR	844-0556		jcouto@Sandia.gov
7.	SNL	ERNEST VINSANT	ENVIRONMENTAL	284-2507	263-3217	egvinsa@sandia.gov
8.	The Plus Group/SNL	David Thomas	Waste Mgt	845-0835	NA	dthoms@Sandia.gov
9.	Summit	Richard Passwaters	Supv	842 8113	2283689	rpasswaters richard@SummitConstr.com
10.	SNL	Nenita Estes	Manager	844-8192	850-6874	nuestes@sandia.gov
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Mountain View Club | October 16, 2007 | 2:00 – 4:00 PM

Contractors Quarterly Safety Seminar
Sign-In Sheet

PRINT CLEARLY

	Company	Name	Position (Safety Officer, Foreman, etc.)	Office Phone	Cell Phone	Email Address
1.	DOE-550	Wayne Walker	FR	845-4240	—	wwalker@doeal.gov
2.	Del Rio Enterprises	Jim Morrow	PM	341-9055	228-7074	jmorrow@dri-nm.com
3.	ECL	Scott Gifford	PM/SO	266-9920	489-7716	sgiffordecl@comcast.net
4.	Business Environments	Mike DANIEL	S/O	830-7872	401-0444	mdaniel@businessenvironments.
5.	Rupert P&H Co	Richard Rupert	O	247-8139	328-1928	Richard@RupertPH.com
6.	TEF Const.	Emily Miller	SO	2932343	2690438	TEFconstEM@aol.com
7.	Rupert Plumbing & Heating	Chris A. Aygster	SO	247-8138-12	321-0497	Chris@rupertph.com
8.	~~RUPERT~~	CARLOS LUCERO	SUPER	321-0762	—	CARLOS@RUPERTPH.COM
9.	RUPERT P&H	RAY L. WOLFE	JF	345-4278	—	
10.	~~DAVE~~ SNL	DAVE ANGLEN	IH	845-1340		dmangle@sandia.gov
11.	SNL	Fred Shelly	IH	284-6320		FShelly@sandia.gov
12.	SNL	Robert Naranville	ES H	845-1335	239-1865	remaran@sandia.gov
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