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SAND2014-0497P

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Quarterly Construction Safety Seminar

SNL Facilities

2nd Quarter FY14, January 29, 2014

SAND# xxxx

U.S. DEPARTMENT OF ENERGY | NNSA

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Agenda

2:00 PM	Introduction and Preliminary Updates/Concerns: Anthony Chavez
2:10 PM	BBS Updates: Jim Doyle
2:20 PM	Electrical Safety
2:45 PM	Safety Observations and Injury Summary: Bruce Bryant
2:55 PM	10 Minute Break
3:05 PM	Lessons Learned – Subcontract Worker Cuts Into a Conduit and Nicks Conductor, No Shock or Injury at Building 956
3:15 PM	Contractor exercise (Critical Thinking): Ray Barber
3:30 PM	Mindfulness
3:35 PM	Engineered Safety
3:40 PM	Safety Stars: Management
3:55 PM	Closing

Gravity is no Issue Here

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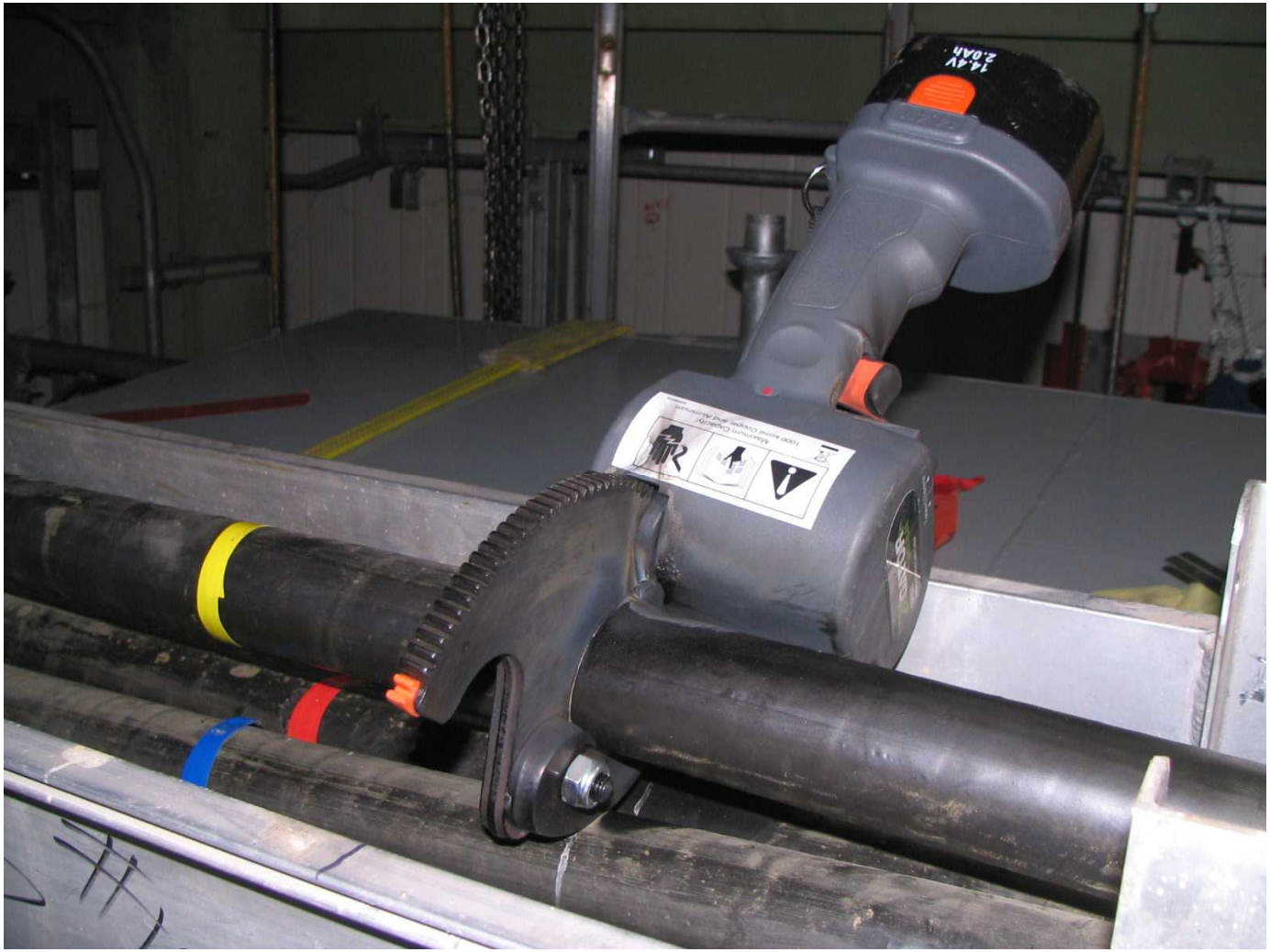
Know what is in the Conduit Prior to Cutting



Preliminary Updates/Concerns

- Update on Contractor Safety Meetings – Contractors
- One Injury in January
- Lighting in Mechanical Spaces – Therese Saiz

1st Quarter FY 2014 Data Review

Jim Doyle

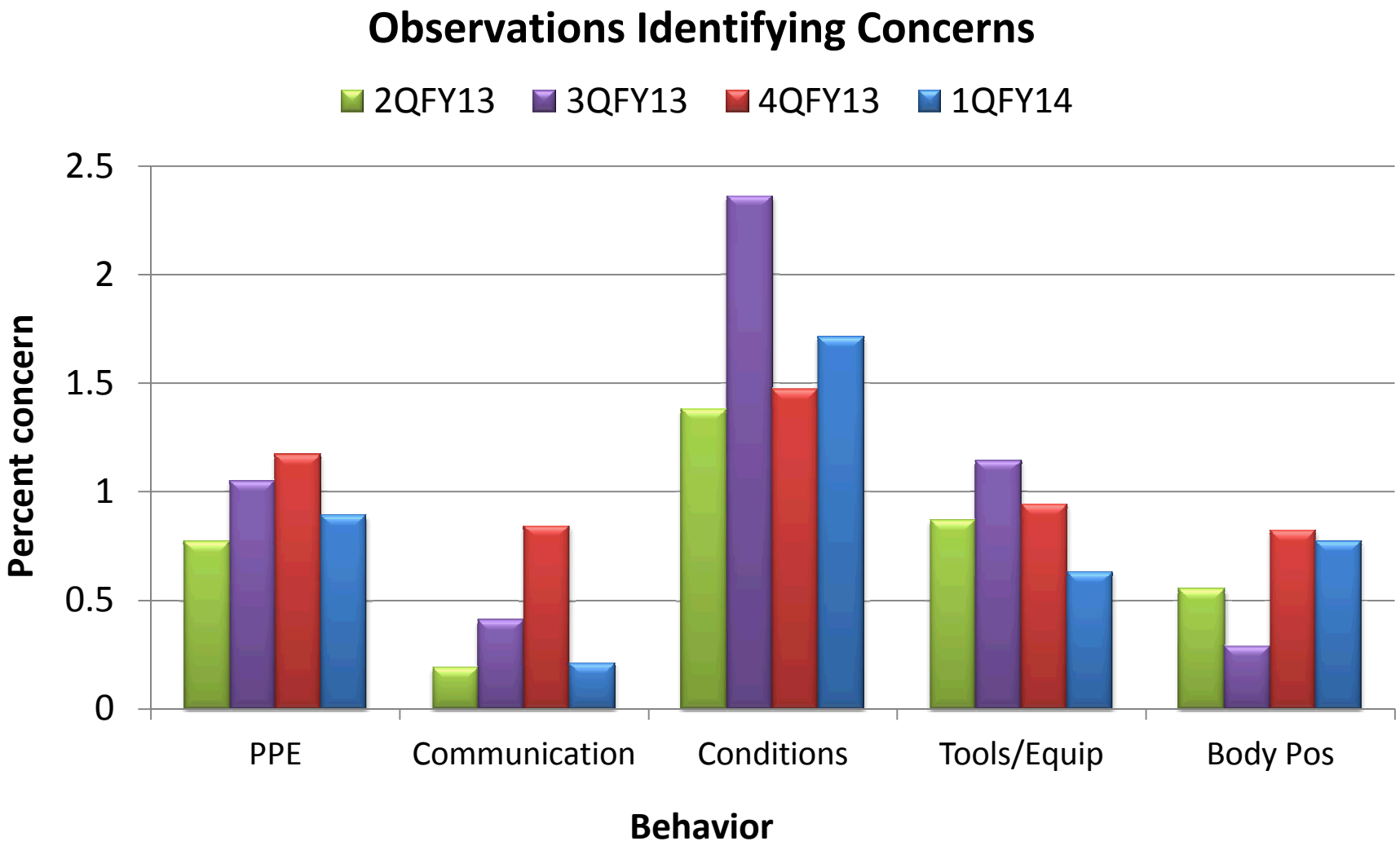
Partnership Contractors BBS

- October-December 2013
- 1131 Observations (1023 last quarter)
- 8837 Individual behaviors
- Overall % Safe = 99.17% (No significant change, 98.95 % last quarter)
- Lowest % Safe
  - Work Conditions 98.29% (Lowest for last quarter)
  - Personal Protective Equipment 99.11%

1st Qtr FMOC Data Summary

- October-December 2013
- Total of 178 Observations (190 previous quarter)
- Overall % Safe= 98.6% (No significant change from 4QFY 2013)
- Lowest % Safe
  - Fall Protection, 91.3% (lowest previous quarter)
  - PPE, 98.5% (2nd lowest previous quarter)

Partnership Contractors BBS



Closing Thought

"He that speaks much is much mistaken."

Ben Franklin

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ELECTRICAL SAFETY/LOTO

What We are Seeing in the field for Construction Electrical Trades

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- FMOC work practices for NFPA 70E Articles 110 and 120 were solid.
- FY13 had 588 field observations for electrical and LOTO. Of those 610 activities were compliant and 13 were non-compliant to specific requirements.
- Barricading can be better thought through to meet the letter of the law. Section Sections 130.4 & 130.4(B)
- Great teaming/communication with maintenance

What we See with all Trades

- Subcontractors do not understand the value of the GFCI.
- Extension cords in areas with man lifts are being damaged on some sites.
- Ceiling areas are not inspected regularly and can have electrical hazards and poor lighting that need greater evaluations and analysis. We will be requiring this in the new CSSP submittals.
- Exclusive control for mechanical personnel is still misinterpreted for LOTO.

Immerging Concerns

- Sandia Line operations are having issues with LOTO and some electrical safety, we are looked at as one organization
- Office of Enforcement is coming to the Sandia/SFO electrical safety meetings
- One event can be a significant event

Maintenance Electrical Safety Initiatives

- Maintenance has purchased a new 3 phase rotation meter "Extech PRT200" that no longer uses direct contact metal clips and replaced with an insulated induction /proximity detection. Rotations should only be done at a downstream 3 phase load this reduces Arc Flash instant energy levels. [No contact]

- Maintenance uses Ross type meter when phasing across low voltage tie breakers this can add distance from the energized system reducing Arch Flash. [Gain distance and safety]

Maintenance Electrical Safety Initiatives (Continued)

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- Maintenance no longer requires grounding on transformer primary for protection of secondary system. LOTO will be used and grounding when working on HV system. [Not exposing personnel to hazard]

- Maintenance no longer needs to take voltage and rotation measurements at the Transformer. Prior to energizing acceptance testing proves nominal voltages will be achieved and rotation will be done on downstream loads. [This reduces exposure to high arch flash area.]

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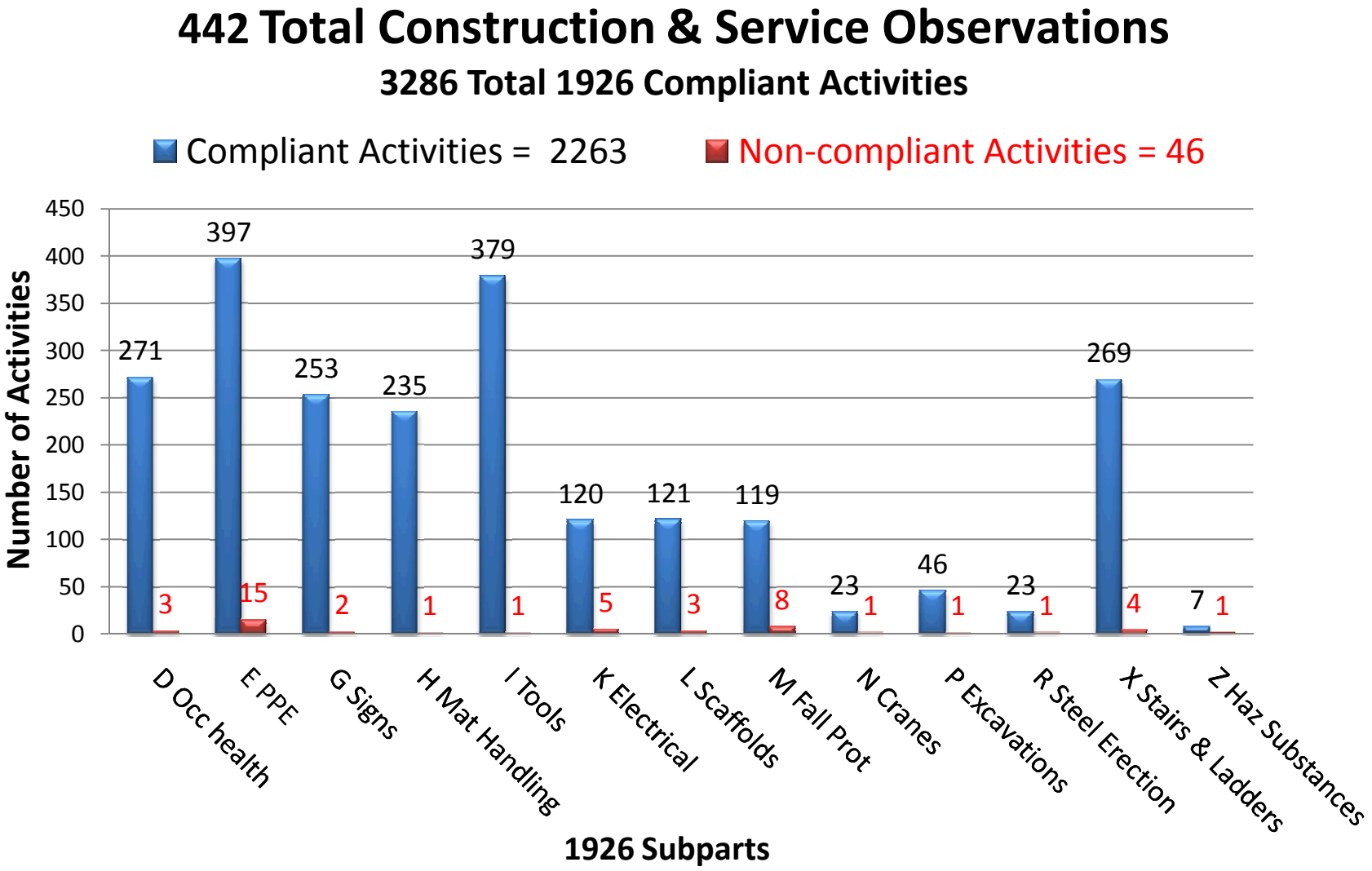
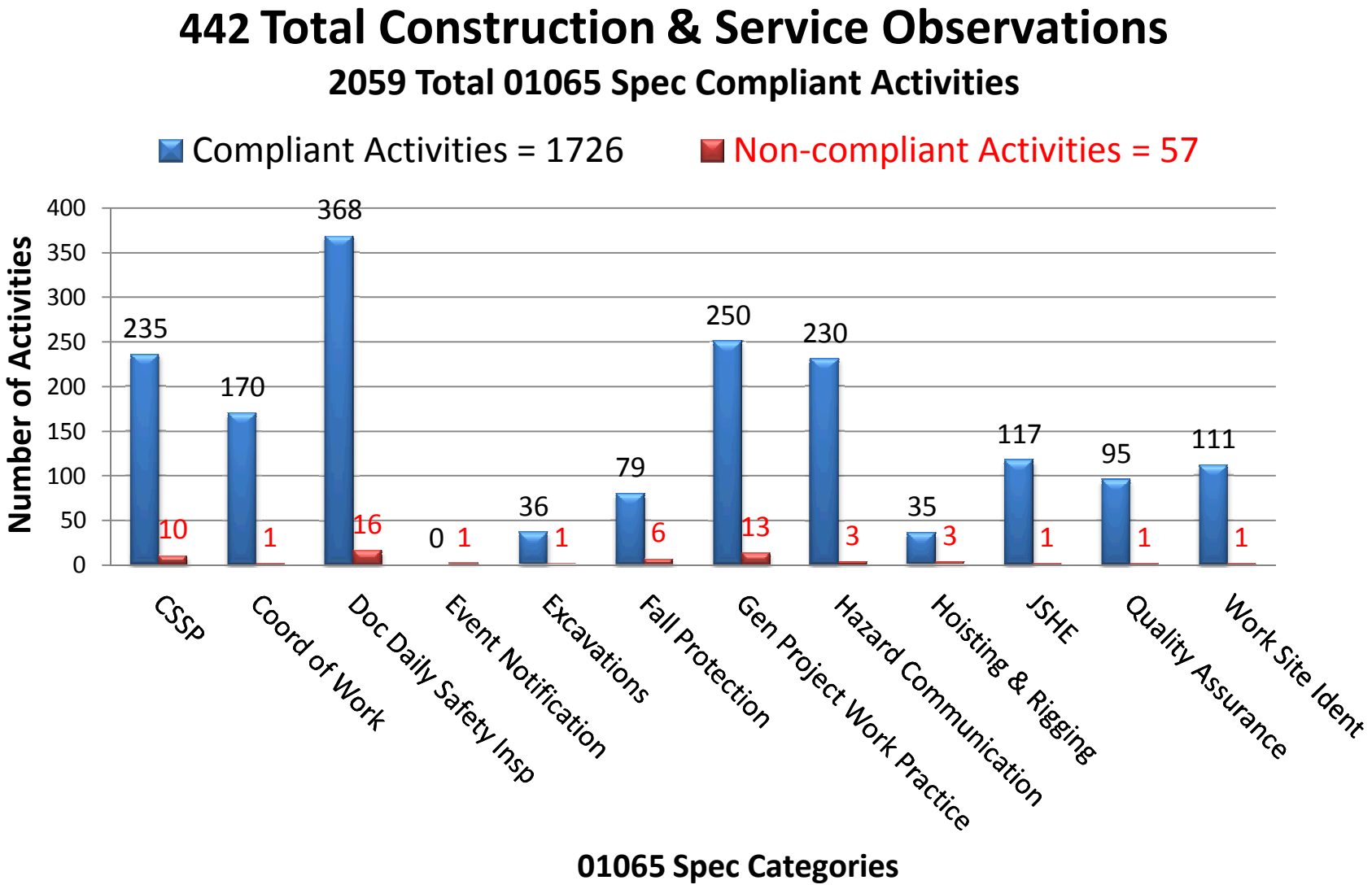
Bruce Bryant

CONSTRUCTION SAFETY OBSERVATIONS SUMMARY

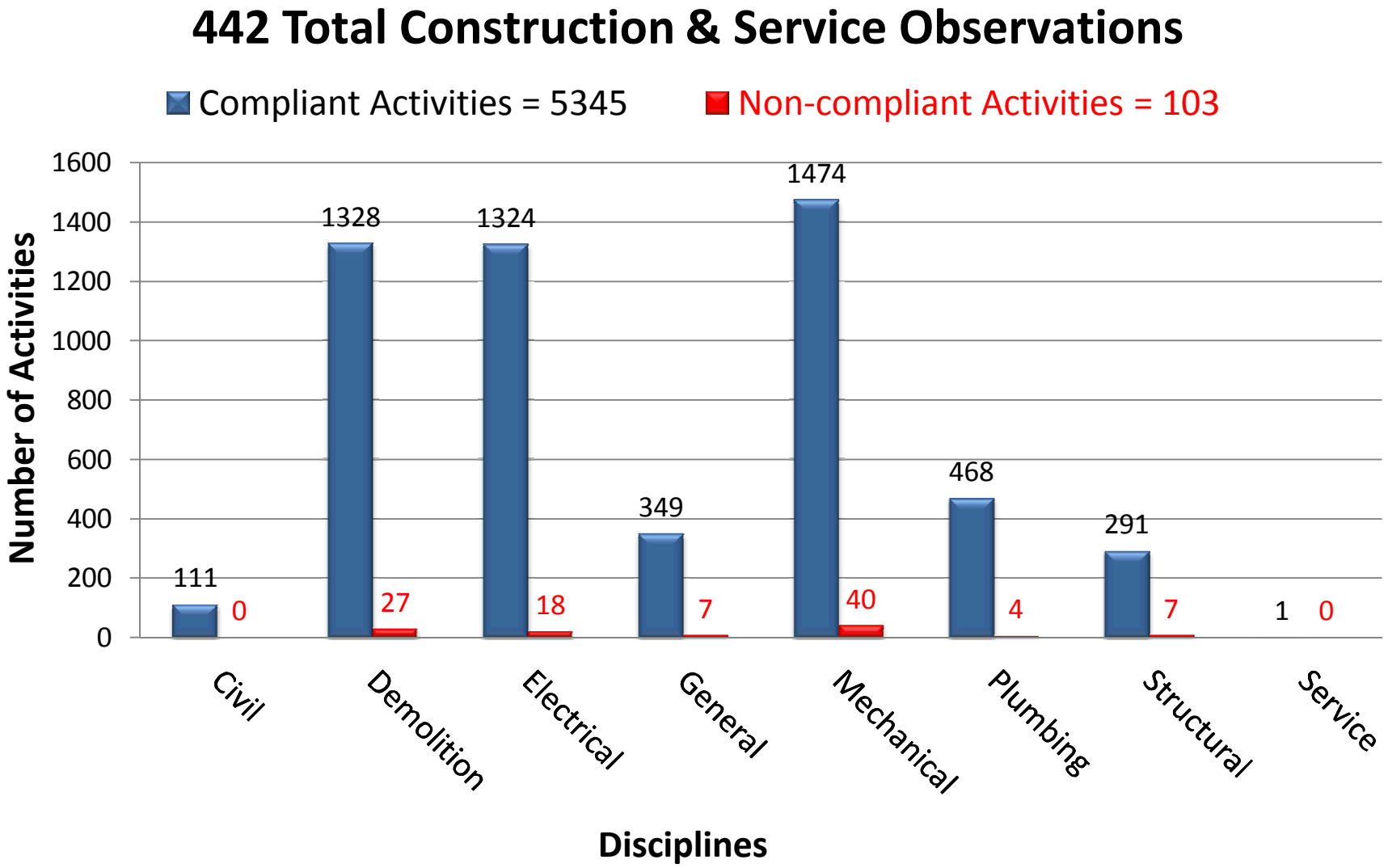
Compliant vs. Non-compliant Observations OSHA 1926 for October – December 2013



Compliant vs. Non-compliant Observations 01065 Spec for October – December 2013



Compliant vs. Non-compliant Observations Discipline for October – December 2013



Focus Areas for Leading Indicators

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Compliance Database – Lowest Percent Safe

- 1926 Subpart Z – Toxic and Hazardous Substances 87.5%
- 01065 Spec – Hoisting and Rigging 92.1%
- 01065 Spec – Fall Protection 92.9%
- 1926 Subpart M – Fall Protection 93.7%
- 01065 Spec – General Project Work Practice 95.1%

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10 Minute Break

Make sure You Know How Creative Everyone is on Your Crew?

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LESSONS LEARNED: SUBCONTRACT WORKER CUTS INTO A CONDUIT AND NICKS CONDUCTOR, NO SHOCK OR INJURY AT BUILDING 956

Description

- At approximately 8:40am, on October 15, 2013 a mechanical contractor cut into an energized circuit while using a sawzall at building 956. The contractor was cutting a 2 inch copper pipe and did not identify the conduit/circuit prior to the operation because the conduit was obscured by the copper pipe. The circuit that was impacted was 277 volts and was inside of a standard one inch conduit. The task was conducted from an 8 foot stepladder at approximately 12 feet in height and the impact to the conduit was approximately one eight of an inch. A second worker was present at the time of the event to control potential water release.

Description (continued)

- There was no shock and no injury to the worker. The lighting to two offices was impacted for forty five minutes. A hazard analysis (daily pre-task plan) was conducted for the operation. This pre-task plan did awareness for electrical hazards and controls and ladder selection. The sawzall was double insulated and the contract worker was utilizing gloves and a GFCI was utilized during the operation. The breaker to the circuit tripped along with the GFCI to the tool.

Top of the Conduit and Pipe

Causes of the Event

- A less than adequate walk down of the work area was conducted due to previous success with simple water piping removal. While the contract worker physically checked behind the pipe with his hand for other utilities, a visual from other angles would have easily discovered the electrical conduit. The 8 inch sawzall blade could have been reduced to a 6 inch and the event also would have been prevented.

- The ladder that was utilized was also an 8 foot ladder and a 10-12 foot ladder would have given the contract worker greater ability to see over the water pipe and identify the electrical conduit.

Causes of the Event

- During the casual analysis it was discovered that a laborer was underneath the cutting operation with a bucket to control a potential water release. The contractor utilizes a behavior based safety program; however it failed to assist in the prevention of this event because the belief was that extra input was not needed. Better communication in the contractor's behavior based safety program could have prevented the event.

Corrective Actions

- While the contractor incorporated a new policy for working in the ceiling area that addresses walk downs, lighting and ladder selection, the contractor also disciplined the employee. FMOC will share this policy with all contractors.

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Ray Barber

CRITICAL THINKING

Critical Thinking

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- Everyone has sharpened a pencil, but have you actually thought about all the steps it takes to sharpen a pencil? Or do you just go and do it? Like a ladder we have all used one, but do you actually think about all the steps it takes just to setup a ladder? Objective: Write a procedure for sharpening your pencil. The object is to write a simple plan on sharpening the pencil safely and try to think of all the steps to complete the task. Remember to think outside the box and think about how you would explain this procedure to your employees from the newest employee to your most seasoned employee. Starting from your seat safely tell me how to perform this task.

Steps to sharpen pencil

- Place both hands on the table
- Make sure both feet are firmly placed on the floor
- Use hands and feet to slide your chair away from the table
- Look both directions prior to standing up to make sure path is clear
- Map out route to avoid any road blocks or trip hazards
- Continue on path until you reach pencil and sharpener
- Pickup sharpener and decide which end you use to sharpen pencil
- Pickup pencil and make sure you insert the proper end to be sharpened

Steps to sharpen pencil (Continued)

- Describe how you sharpen the pencil, do I turn sharpener or pencil
- Do I sharpen pencil over a trash can or just over the table?
- Inspect pencil once sharpened but, do not touch the point as it may poke you
- Place sharpener back down on the table and return to your seat in the same path you scoped out
- Make sure nothing has changed in your route that could cause you to trip and fall

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MINDFULNESS

What is Mindfulness?

- Put simply, mindfulness is as simple as becoming aware of your “here and now” experience, both internally and in the external world around you
- It also allows you to look at and plan for the future. Am I ready for the environment and is the environment ready for me?
- In fact, we are never NOT in the present moment – we just lose track of that fact quite often

What is Mindfulness? (continued)

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- Sometimes it is easier to understand something in terms of what it is not. Here are some examples of mindLESSness:
  - Breaking things, spilling things, clumsiness, accidents because of carelessness, inattention or thinking about something else
  - Failing to notice subtle or not-so-subtle feelings of physical discomfort, pain, tension etc.
  - Forgetting someone's name as soon as you hear it
  - Listening to someone with one ear while doing something else at the same time
  - Getting so focused on goals that I lose touch with what I am doing right now
  - Getting lost in my thoughts and feelings

What is Mindfulness? (continued)

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- Being preoccupied with the future or the past
- Eating without being aware of eating
- Having periods of time where you have difficulty remembering the details of what happened – running on autopilot
- Reacting emotionally in certain ways – feeling like an emotion just "came out of nowhere"
- Daydreaming or thinking of other things when doing chores
- Doing several things at once rather than focusing on one thing at a time
- Distracting yourself with things like eating, alcohol, pornography, drugs, work
- If you do some or even most of these things at times, then you are probably a normal member of the human race.

Could we improve on our Mindfulness?

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- FMOC will start to look at this concept to determine if there are some gains that we can receive from this system.
- While not all the concepts apply, our focus needs to improve during certain activities and times of the day.

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ENGINEERED SAFETY FOR CONSTRUCTION

Overview

- As an industry we tend to except “high consequence” operations without proper analysis. We believe that this is simply the industry we are in and therefore part of life
- We do not look at engineering controls to eliminate or reduce hazards and consequences at a level that is needed
- High turnover rates in the construction industry which increases on-the job training and lack of history information on sight specific and on intuitive hazards

What are we seeing in the FMA

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- Minimal or no engineering controls for the following:
  - Step Ladders
  - Extension Ladders
  - Fixed Ladders
  - Roof operations
  - Pinch points – hydraulic, doors during high winds, sheet metal handling
  - Stuck-by/caught-between – vehicles, gates, tightening and loosening large bolts, fitting pipe/duct

What can we do?

- Actively look for stronger engineering controls in all operations.
- Increase awareness for tasks/activities that are “Risk Category 1-2”.
- Update your CSSP to reflect your changes.
- Verify data from your competent persons and subcontractors. Challenge answers respectfully.

Safety Stars

Closing Announcements