FY09 2nd Quarter Construction Contractor Safety Seminar

Mountain View Club, 2:00 – 4:00 PM

January 27, 2009 Meeting Minutes

Speakers: Introduction and Preliminary Occurrences: Greg Kirsch, ES&H Program Manager for FMOC, Dept. 4844, Office Phone: 845-9497, e-mail: gckirsc@sandia.gov

Differences between SNL & General Electrical Safety Practices and Requirements: Greg Kirsch

Electrical Safety - Sandia Electrical Requirements for Subcontractors: Marc Williams, SNL Electrical Safety, Office Phone: 845-8795, e-mail: mwilli4@sandia.gov

Electrical Safety Pamphlet: Greg Kirsch

SNL/DOE Occurrence Reporting Requirements: Carla Lamb, FMOC ES&H Coordinator, Office Phone: 844-1753, e-mail: cjlamb@sandia.gov

Status of Construction Waste Management (CWM) at Sandia: Doug Vetter, Pollution Prevention Prog., Dept. 4131, Office Phone: 284-3210, e-mail: dwvette@sandia.gov

Fall Protection: Bruce Bryant, Field Safety Specialist, Dept. 4844, Office Phone: 844-2986, e-mail bbryan@sandia.gov

Safety Observations and Injury Summary: Greg Kirsch

New Mexico Environmental Department Construction Waste Visit Review: Dave Thomsen, Environmental & Waste Representative Dept. 4133, Office Phone: 845-0835, Pager: 530-0986, e-mail: djthoms@sandia.gov

Proposed State Drug Testing: Kerry Soileau, J. B. Henderson Construction, Office Phone: 292-8955, e-mail: ksoileau@jbhenderson.com

BBS Trends & Analysis (Oct - Dec): William Tierney, BBS Steering Committee, Dept. 4827, Office Phone: 845-0633, e-mail: wjtiern@sandia.gov

Safety Stars: Anthony Baca, Department Manager 4826, Office Phone: 844-3553, e-mail: ambaca@sandia.gov

Summary

There were 74 attendees and 21 companies represented.

Introduction and Preliminary Construction Occurrences: Greg Kirsch

Greg welcomed everyone to the Quarterly Construction Safety Seminar. There were two preliminary construction occurrences shared by Greg Kirsch. The lessons learned will be shared at the 3rd Quarter Seminar on April 14, 2009. See the Power Point slides for detailed information.

- Subcontract Worker Looses Hand Hold on Fixed Ladder and Falls 13 Feet Landing on Composite Roof - Lessons learned, unsure we are addressing the differences of fixed ladders and other ladders. The main difference is the angle of the fixed ladder is 90 degrees and other ladders are 75.52 degrees. This puts a tremendous amount of pressure on the hands to maintain contact. Transitions are also different on fixed ladders, generally the steps to the rail system.
- Subcontractor Electrician Receives a Shock while Terminating Conductors in a New Uninterruptable Power Supply in Bldg. 890. We need to stress the importance of knowledge of multiple energy sources on equipment.

Differences between SNL & General Electrical Safety Practices and Requirements: Greg Kirsch

Greg Kirsch reviewed the differences between Sandia National Labs and General Electrical safety practices and requirements for the following topics. See the PowerPoint slides for more information.

- 10CFR851
- Contract Specific Safety Plan (CSSP)
- Integrated Safety Management System (ISMS)
- DOE Order/Occurrence Reporting
- Facilities Management and Operations Center (FMOC)

Electrical Safety: Sandia Electrical Requirements for Subcontractors: Marc Williams

A review of the Electrical Kaizen results and SNL requirements.

Electrical Safety Pamphlet: Greg Kirsch

Greg Kirsch reviewed the "What is Electricity?" pamphlet. A copy of the pamphlet is attached for your use in your company meetings as well as the PowerPoint slides.

SNL/DOE Occurrence Reporting Requirements: Carla Lamb

Carla Lamb reviewed the SNL/DOE Occurrence Reporting Process. She discussed the steps required to report a notification report and the reporting criteria and significance categories involved. See the PowerPoint Slides for more information.

Status of Construction Waste Management (CWM) at Sandia: Doug Vetter

Doug Vetter of the Pollution Prevention Program gave an overview of SNL's CWM program and discussed the concrete/asphalt, carpet/ceiling tile recycling. See the PowerPoint slides for more information.

Fall Protection: Bruce Bryant

Bruce Bryant discussed that falls are the leading cause of deaths in the construction industry and the fall fatalities statistics from the Bureau of Labor. See the PowerPoint slides for more information on fall protection requirements.

Safety Observations Summary: Greg Kirsch

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 2008.

Proposed State Drug Testing: Kerry Soileau

Kerry Soileau of J. B. Henderson reviewed what a substance abuse program is and why your company should have one.

BBS Trends & Analysis (Mar – May): William Tierney

William presented the BBS Data summary for October - December 2008. There were a total of 769 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 future Quarterly Safety Seminars:

Location: **Mountain View Club**
Time: **2:00 – 4:00 PM**
Date: **April 14, 2009**
July 14, 2009
October 13, 2009

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

2nd Quarter FY09

January 27, 2009

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.

NNSA

Sandia National Laboratories

Agenda
January 27, 2009

2:00 PM	Introduction and Preliminary Occurrences: Greg Kirsch
2:05 PM	Differences between SNL & General Electrical Safety Practices and Requirements: Greg Kirsch
2:20 PM	Electrical Safety - Sandia Electrical Requirements for Subcontractors: Marc Williams
2:30 PM	Electrical Safety Pamphlet: Greg Kirsch
2:35 PM	SNL/DOE Occurrence Reporting Requirements: Carla Lamb
2:45 PM	Status of Construction Waste Management (CWM) at Sandia: Doug Vetter
3:00 PM	10 Minute Break
3:10 PM	Fall Protection: Bruce Bryant
3:20 PM	Safety Observations and Injury Summary: Greg Kirsch
3:25 PM	New Mexico Environmental Department Construction Waste Visit Review: Dave Thomsen
3:30 PM	BBS Trends & Analysis (Oct - Dec): William Tierney
3:35PM	Proposed State Drug Testing: Kerry Soileau
3:50 PM	Safety Stars: Anthony Baca
4:00 PM	Closing: Greg Kirsch

Preliminary Occurrences

- On January 8, 2009, at approximately 1:30 p.m., an electrician working for an FMOC Electrical Subcontractor received a finger to finger shock while troubleshooting a newly installed Uninterruptable Power Supply (UPS).
- On Tuesday, December 16, 2008 at approximately 2:05 PM, a subcontract carpenter fell 13 feet, after losing their grip, while climbing a fixed ladder located on the roof of Building 858 North. The carpenter landed on the composite roof below.

Differences between SNL & General Electrical Safety Practices and Requirements

Greg Kirsch

10 CFR 851

- Sandia National Laboratories is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the DOE's National Nuclear Security Administration. All DOE sites are governed by 10 CFR 851, which requires the use of the NFPA 70 E Standard. This standard addresses safety-related work practices, maintenance requirements, special conditions, and installation safety requirements. 10 CFR 851 also requires the use of an activity hazard analysis.

Contract-Specific Safety Plan (CSSP)

- Sandia construction contracts require that all employees and subcontractors know and follow an accepted, approved CSSP. The CSSP includes such requirements as 10 CFR 851, OSHA 1926/1910, company policies, and the Facilities 01065 specification (ES&H for Construction Contracts). Affected subjects are qualified personnel, lockout/tagout, training, hazard/risk categories, boundaries/barricading, and personal protective equipment (PPE).

Integrated Safety Management System (ISMS)

- The ISMS is part of all processes. The five ISMS functions incorporate ES&H into all of our activities from planning through performance through continuous improvement and are documented in SNL's Management and Operating (M&O) Contract.

  1. Plan work
  2. Analyze hazards
  3. Control hazards
  4. Perform work
  5. Feedback & improve

DOE Order/Occurrence Reporting

- DOE's Occurrence Reporting System tracks safety events meeting criteria identified in the DOE Order. Electrical events that meet the DOE reportable criteria are as follows:
  - Failure to follow a prescribed hazardous energy control process (e.g. lockout/tagout) or disturbance of a previously unknown or mislocated hazardous energy source (e.g. live electrical power circuit, steam line, pressurized gas) resulting in a person contacting (burn, shock, etc.) hazardous energy.

DOE Order/Occurrence Reporting

- Continued
  - Failure to follow a prescribed hazardous energy control process (e.g. lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g. live electrical power circuit, steam line, pressurized gas). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.

FMOC

- Safety inspection and oversight from Sandia personnel is significantly different than most sites. Project Technologists (inspectors) will be assigned to work. Behavior based safety will be conducted with a wide range of FMOC employees, and the ES&H staff will conduct periodic compliance observations.

Electrical Safety: Sandia Electrical Requirements for Subcontractors

Marc Williams
SNL Electrical Safety

Requirement

- 10CFR851 (DOE Worker Safety and Health Program) requires that the contractor
  - Provide a workplace that is free from recognized hazards…
  - Ensure work is performed in accordance with
    - Applicable requirements
    - Worker site safety and health program
    - And applicable requirements from the Rule, including OSHA Regulations (29CFR1910 and 1926) and NFPA 70E (*Electrical Safety in the Workplace)*

Requirement

- Sandia requirements associated with contracted activities is found in Chapter 23 of the Sandia ES&H Manual.
  - The Manual section identifies 2 types of contractors:
    - ES&H Manual contractors – must comply with SNL ES&H Manual.
    - CSSP (Contract Specific Safety Plan) contractors – comply with company's individual site safety plan – which must be reviewed by Sandia ES&H professionals and accepted by the Sandia Designated Representative (SDR).
  - FMOC implements these requirements through the 01065 ES&H Specification.

Energized Work

- NFPA 70E defines a *Limited Approach Boundary* around exposed, energized components at 3’6”, which may only be crossed in 2 situations:
  - De-energizing the component creates a greater hazard (i.e. critical life support systems) or
  - De-energizing is infeasible due to design or operational limitations (i.e. voltage measurements as part of troubleshooting)

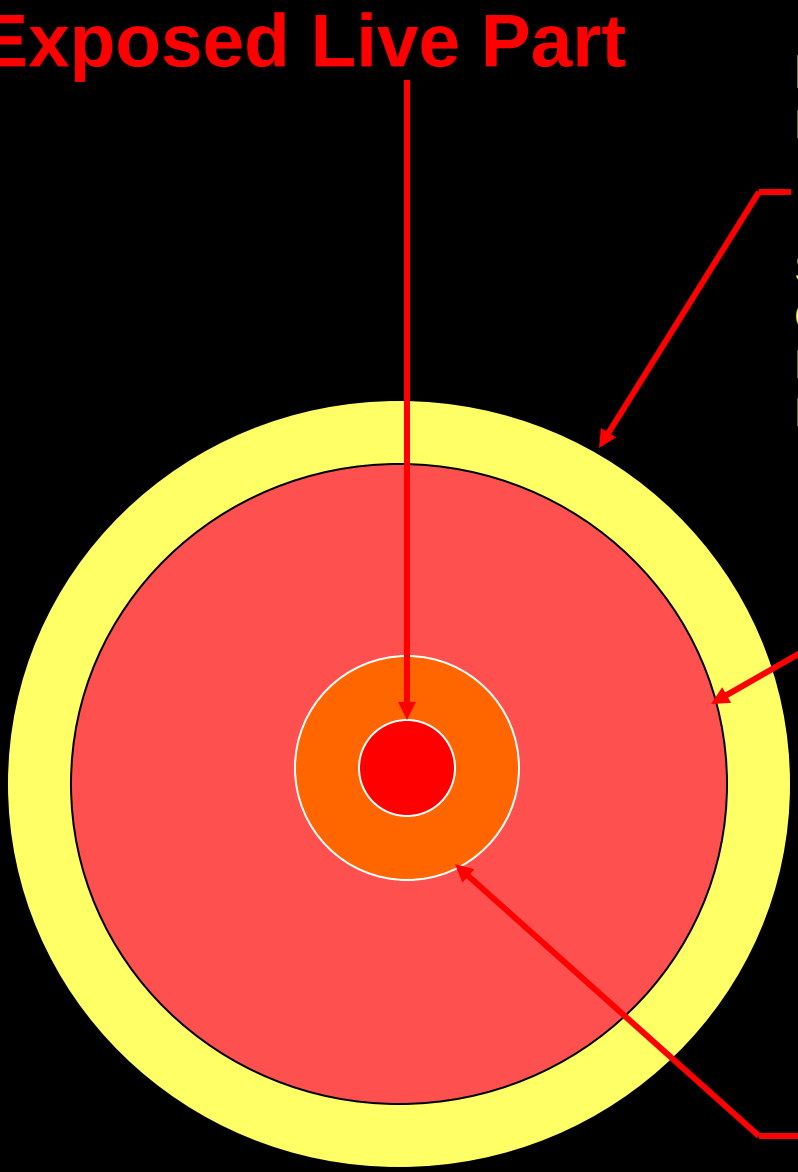
Energized Work Procedures

- If the work to be performed requires the circuit/component to be energized, then some type of Technical Work Document (TWD) is required:
  - TWD for troubleshooting and diagnostic measurements
  - Energized Work Permit for circuit maintenance/manipulation
  - LOTO TWD for zero energy verification
- The TWD must include a shock and flash hazard analysis.

Energized Work Authorization

- FMOC contractor's would identify requirements for troubleshooting and diagnostic measurements and LOTO zero energy verification in their reviewed and accepted CSSP.

- Circuit maintenance/manipulation requires authorization from FMOC and an SNL energized work permit approved by FMOC management and the Contractor's management.



Limited Approach Boundary *(shock)*

Level II authorized TWD required: *70E 130.1(A)*

- *OP for troubleshooting and diagnostics*
- *EWP for manipulation of energized part*

Shock hazard analysis required: *70E 130.2(A)*

Only qualified workers may cross * :*70E 130.2(D)(2)*

Flash hazard analysis required: *70E 130.3*

Boundary must be physically established: *70E 130.7(E)2*

Flash Protection Boundary

Calculated-can range from <1" to >10': *70E 130.3(A)*

Flash PPE required: *70E 130.3(B)*

Flash PPE ensemble can range from clothing made of natural fibers to FR clothing, face shield, blast hood, hearing protection, etc.: *70E 130.7(C)(10)*

Restricted Approach Boundary *(shock)*

No unqualified workers: *70E 130.2(D)(2)*

Shock PPE required: *70E 130.2(C), 130.7(C)(6)*

Shock PPE mainly consists of insulating gloves and tools: *70E 130.7(C)(9)(a)*

What are the Hazards?

- Shock
  - Dowcraft Panel events
    - Listed as raceways – which means they may have unprotected wiring inside
    - Improved Sandia's spec to required FMC or MC cable inside panels
    - Older panels may not have the protection
  - D&D Events
    - Asbestos Worker
    - Others…
- Arc Flash/Blast

Electrical Awareness Pamphlet

Greg Kirsch

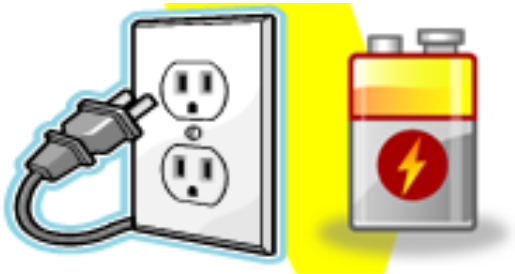
What is Electricity?

Electricity is Energy

It's measured in volts & amps, and powers lights, power tools, computers, etc.

Types of Electrical Energy

- Alternating Current (AC) power sources are generally supplied by generators. (What most of us are exposed to)
- Direct Current (DC) power sources are generally supplied by batteries.

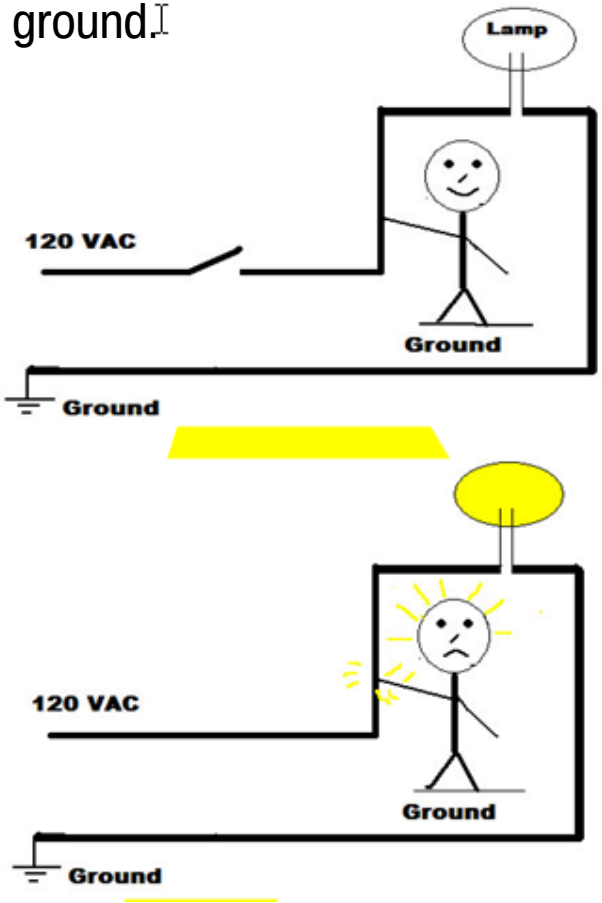


How does electricity travel?

- All electricity eventually flows to the ground.
- Electricity travels through conductive material, such as copper, aluminum, silver, even air & water. Given the right circumstances electricity will flow through the human body.
- Electricity will travel through a circuit from its source to the load (light bulb) and back to its source.
- When the circuit is interrupted multiple hazards can occur.

Electrical Shocks

Electrical Shock occurs when a part of the human body becomes a conductor, thus completing part of the path for current to flow to ground.



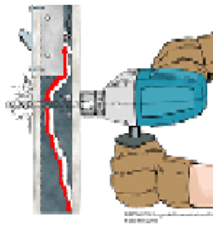
Effects of Shock

- The effects from shock range from tingling sensations to heart failure, depending on the path & amount of current that passes through a victim. As little as 5 milliamps (not enough to light a 60 watt light bulb) can harm a human body, 50 milliamps can cause heart fibrillation, and 100 milliamps causes the heart to stop.
- Respiratory paralysis may also occur and can be potentially fatal.
- In addition to the direct effects (pain, paralysis, heart fibrillation and tissue burn), a shock victim may immediately feel confused & may experience amnesia, headaches, or breathing and heart irregularities.

Electrical Hazards in Removable Metal Partitions (Dowcraft Panels)

There have been 2 events at Sandia in the past 2 years where non-electrical workers were exposed to electrical hazards while modifying removable metal partitions (Dowcraft Panels).

The base and cap strip areas of the metal partition walls are identified and listed as electrical raceways. As a result these spaces often contain electrical conductors insulated with non-conductive plastic covering. The SNL Facilities' Metal Partition and Electrical Specifications have been modified and now require electrical circuits to be run in flexible metal conduit or metal clad cable. The flexible metallic conduit and metal clad cable provide additional physical protection to the conductors, to reduce the potential for damage to conductors during modification work. Older installations still contain conductors without flexible conduit.



Prior to performing any modification work on metal partitions you should:

- Be aware of the controls identified by your employer to protect you and your co-workers from electrical hazards associated with the modification work.
- Contact your supervisor if you discover new or unidentified electrical hazards.
- A re-evaluation of existing controls shall be performed for any new hazards discovered to ensure work is performed in a safe manner.

Asbestos Abatement Worker Receives Shock

An asbestos abatement worker removing asbestos-containing wallboard from a plumbing chase found an electrical box containing two exposed electrical wires hidden within the chase.

The abatement worker knew that an electrical contractor had previously de-energized the electrical receptacles and lighting located in the abatement area. So the worker proceeded to vacuum around the newly exposed electrical box.

When the worker's hand came in contact with the exposed conductors, the worker received a shock. The conductors were still energized.

The electrical worker who de-energized the area prior to the abatement did not know that the electrical box was hidden within the chase, and therefore it had not been tested to verify de-energization.

Who can you call if you have concerns? Your supervisor or FMOC Construction Observer or Project Manager.

IF IN DOUBT, CEASE THE ACTIVITY AND CALL FOR HELP.

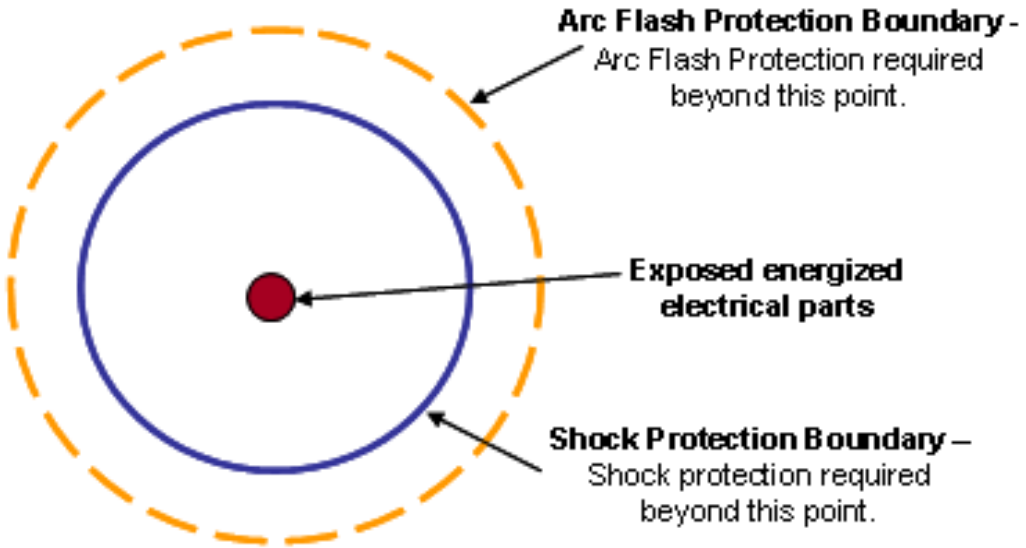
Arc Flash/Blast

Arc Flash/Blast occurs when an energized source comes in contact with a grounded source creating an unexpected release of energy in the form of heat, noise, and pressure.

Effects

May cause severe burns, eye and hearing damage

Boundaries must be established around exposed electrical parts to ensure personnel are protected. These boundaries are established by the energy source characteristics. The NFPA standard for electrical safety in the workplace provides the appropriate distance measurements.



Training & authorization are required prior to personnel entering an established electrical boundary.

Sandia National Laboratories

Fire

Fire may occur when electrical systems (wiring, extension cords) are over-loaded and create heat.

Effects

If combustibles are present fire may result

SNL/DOE Occurrence Process

Carla Lamb
FMOC ES&H Coordinator

Occurrence Reporting (OR) is . . .

- How we identify and report occurrences related to safety, environment, health, or operations to DOE
- Required per DOE O 231.1A, *Environment, Safety, and Health Reporting*
- Implemented per DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information*

How Does Occurrence Reporting Work?

- Once FMOC is notified of an abnormal condition or event, the Subcontractor, FMOC ES&H and Management personnel begin to gather information to determine if the event is reportable to DOE as an occurrence.

- Regardless of reportability, FMOC must ensure the SNL Incident Commander and NNSA have been notified of the event (early notification).

Occurrence Reporting Timeline

	What	When
⇩⇩ *Sequence of Events* ⇩⇩	**Discovery**	**ASAP after Event Occurs and is Understood**
	Early Notification	**ASAP after Event Occurs**
	Categorization	**Within 2 Hours of Discovery**
	Investigation/Critique/Fact Finding	**ASAP After Discovery**
	Written OR Notification	**SC2 and Up: 1 Business Day After Categorization** **SC3 and SC4: 2 Business Days After Categorization**
	Causal Analysis	**Within 45 Days of Categorization**
	Final Occurrence Report	**Within 45 Days of Categorization**
	Corrective Action Completion	**As Designated in OR CAP**
	Verification of CA Completion	**As Designated in OR CAP**
	Validation of CA Effectiveness	**As Designated in OR CAP**

Discovery and Categorization

- **Discovery:**

  When an abnormal condition or event is first observed ***and*** the FMOC has sufficient information to evaluate against the reporting thresholds.

- **Categorization:**

  When the FMOC makes the decision of reportability.

- **All reportable occurrences must be reported within two hours of Categorization**

Notification and Final Reports

- Notification Report (due 1-2 days after categorization):
  - Discovery/Categorization Date/Time
  - Reporting Criteria
  - Project Name/Location
  - Description of Event
  - Immediate Actions
- Final Report (due 45 days from date of event – unless categorized as a near miss then due within 30 days):
  - Items listed above
  - Investigation results
  - Causal Analysis/Cause Codes
  - Corrective Actions

Reporting Criteria and Significance Categories

- **SC1**: Have a **significant impact** on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests.
  - **Notification Due COB Next Business Day**
- **SC2**: Have a **moderate impact** on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests
  - **Notification Due COB Next Business Day**
- **SC3**: Have a **minor impact** on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests.
  - **Notification Due COB 2 Business Days**
- **SC4**: Have **some impact** on safe facility operations, worker or public safety and health, public/business interests.
  - **Notification Due COB 2 Business Days**

Group 1
Operational Emergencies

Site Emergencies that require time-urgent response by SNL Emergency response personnel. These are categorized by Emergency response personnel.

Not a common group for FMOC operations.

Group 2
Personnel Safety & Health

Subgroup A – Occupational Illness/Injuries

- **Category 1**: (1) Any occurrence due to DOE operations resulting in a fatality or terminal injury or illness. (2) Any single occurrence requiring in-patient hospitalization of three or more personnel.
- **Category 2**: (3) Any single occurrence resulting in three or more personnel having Days Away, Restricted or Transferred cases

Group 2
Personnel Safety & Health

Subgroup A

- **Category 3**: (5) Personnel exposure to chemical, biological or physical hazards above limits established by OSHA or ACGIH.

  (6) Any single occurrence resulting in a serious occupational injury.

  A serious occupational injury is an occupational injury that:

  (a) Requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; or

  (b) Results in a fracture of any bone (except simple fractures of fingers, toes, or nose, or a minor chipped tooth); or

  (c) Causes severe hemorrhages, or severe damage to nerves, muscles, or tendons; or

  (d) Damages any internal organ; or

  (e) Causes second-or third-degree burns affecting more than five percent of the body surface.

Group 2
Personnel Safety & Health

- **Subgroup B – Fire/Explosions**
  - **Category 1:** Any unplanned fire or explosion within primary confinement/containment boundaries for nuclear or hazardous material within a facility.
  - **Category 2:** Any unplanned fire or explosion in a nuclear facility that activates a fire suppression system, is extinguished by a fire department, or disrupts normal facility operations.
  - **Category 3:** Any unplanned fire or explosion in a non-nuclear facility that:
    a) activates a fire suppression system
    b) Takes longer than 10 minutes to extinguish following the arrival of fire protection personnel, or
    c) Disrupts normal operations in a high hazard facility.
  - **Category 4:** Any wild land fire (e.g., forest fire, grassland fire) or other fire outside of a DOE facility that has the potential to threaten the facility.

Group 2
Personnel Safety & Health

- **Subgroup C – Hazardous Energy Control**
  - **Category 2:** Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) Or disturbance of a previously unknown or mislocated hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas) resulting in a person contacting (burn, shock, etc.) hazardous energy.
  - **Category 3:** Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) Or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.

Groups 3 & 4

Group 3 – Nuclear Safety Basis

Group 4 – Facility Status

- **Subgroup A** – Safety Structure/System/Component Degradation
  - **Category 3:** Performance degradation of any Safety Class or Safety Significant Structure, System, or Component (SSC) that prevents satisfactory performance of its design function when it is required to be operable.
  - **Category 4:** Performance degradation of any Safety Class SSC when not required to be operable.

Group 4
Facility Status

- **Subgroup B – Operations**
  - **Category 2:** (1) A Stop Work Order issued by a DOE Office, (2) Actuation of SSC resulting from unsafe condition.
  - **Category 3:** (4) Any facility evacuation, not including precautionary evacuation, in response to an actual event.

Group 5
Environmental

- **Subgroup A – Releases**
  - **Category 2:** (1) Any release of a hazardous substance, material, waste from a DOE facility that is above permitted levels, (2) Any discharge that exceeds 100 gallons of any kind of oil.
  - **Category 4**: (3) Any release of a hazardous substance, material, waste from a DOE facility that is above permitted levels and exceeds 50% of reportable quantities, (4) An release of a hazardous substance, material, waste that must be reported to outside agencies (except spills of less than 10 gallons with negligible environmental impact).

Group 5, 6, 7, 8, 9

- Group 5 Environmental - Subgroup B – Ecological and Cultural Resources
- Group 6 Contamination/Radiation Control
- Group 7 Nuclear Explosive Safety
- Group 8 Transportation
- Group 9 Noncompliance Notifications

Group 10
Management Concerns/Issues

- Category 1-4: (2) Any event, condition, or series of events that does not meet any other reporting criteria, but is determined by management to be of a concern.

- Category 1-4: (3) Near miss, where no barrier or only one barrier prevented an event from having a reportable consequence.

Status of Construction Waste Management (CWM) at Sandia

Doug Vetter
Pollution Prevention Program

Presentation Overview

- Overview of Sandia's CWM Program
- Concrete & Asphalt Recycling Area
- Carpet & Ceiling Tile Recycling
- Other CWM Topics

CWM Program Overview

- Section 1505, Construction Waste Management
- Project Site Recycling Support
- C&D Recycle Center (West Side of SWTF)
- Concrete & Asphalt Recycling Area (TA3)
- Carpet & Ceiling Tile Recycling at the P2 Tent (Property Reapplication)

Concrete & Asphalt Recycling Area (CARA)

Sandia National Laboratories

Concrete & Asphalt Recycling Area (CARA)

Sandia National Laboratories

Concrete & Asphalt Recycling Area (CARA)

Carpet & Ceiling Tile Recycling

- Only Mineral Fiber Ceiling Tiles can be Recycled
- All Carpet Types can be Recycled
- Storage at Property Reapplication – P2 Tent
- Palletize and Shrink Wrap
- No Wet Carpet or Ceiling Tiles – Protect Against Weather!

Problem Materials

- Some construction materials should not be disposed as C&D waste or recycled:
  - aerosol cans
  - mercury thermometers
  - liquids (paints, solvents, adhesives, glues, sealants, oils, fuels, etc).
- When in doubt contact your Sandia Construction Inspector or ECC (Dave Thomsen & Ernest Vinsant)

Miscellaneous CWM Topics

- Why an Emphasis on CWM
- When Does it make Sense to Recycle
- Future Activities (wood recycling, pallet reuse program)

10 Minute Break

Fall Protection Guidance

Bruce Bryant

Falls in Construction

Falls are the leading cause of deaths in the construction industry.

Most fatalities occur when employees fall from open-sided floors and through floor openings.

Falls from as little as 4 to 6 feet can cause serious lost-time accidents and sometimes death.

Open-sided floors and platforms 6 feet or more in height must be guarded.

2006/2007 Fall Fatalities
From the Bureau of Labor Statistics

	2006	2007
Fatalities from Falls	827	835
Fall to lower level	738	733
Fall from ladder	132	132
Fall from roof	185	161
Fall from scaffold, staging	91	88
Fall on same level	67	81

Best Fall Protection Plan:

- Eliminate or reduce the use of Fall Hazard
  - Example: Prefab piping, roof, etc. systems on the ground and then lift or hoist into place.
    - Reduces total man-hours for a project, such as elevated work, time required for installing fall protection.
    - Reduces the risk of injury and/or death.
    - Increases focus on planning & productivity for a project.

If Fall Protection is needed:

Fall Protection Training is Required

Training

Employers must provide fall protection training

The training is to teach you:

- How to recognize hazards
- How to minimize hazards

The training must cover:

- Fall hazards
- Fall protection systems
- Use of fall protection devices

Fall Protection Planning

Fall Protection Planning

Fall protection systems and work practices must be in place before you start work.

6

OSHA Office of Training & Education

Sandia National Laboratories

Fall Protection Planning Cont.

- Reference 1926 Subpart M App C
- An employer may use a variety of fall protection systems to protect employees. These systems must meet OSHA requirements**.** The competent person must make frequent and regular inspections, as required, to determine if these systems meet OSHA requirements before employees rely on these systems. More detail may be found in 29 CFR 1926.502.

Fall Protection Planning Cont.

- Employers engaged in leading edge work, precast concrete erection work, or residential construction work who can demonstrate that it is infeasible or it creates a greater hazard to use conventional fall protection equipment may develop a **fall protection plan** that provides other measures to be taken to reduce or eliminate fall hazards for workers. Fall protection plans must conform to OSHA provisions and be prepared by a qualified person. Fall protection plans must identify locations where conventional fall protection methods cannot be used and set up controlled access zones and any necessary safety monitoring systems.
- See STD 3-0.1A

3rd Follow SNL Fall Protection Requirements:

- SNL 1065 Specification, 3.04 General Project Work Practices, W. Fall Protection
  1. CSSP shall identify administrative controls and/or fall protection methods to be utilized for all work within 15 feet of an unprotected side or edge that is more than 6 feet above a lower level for all construction trades excluding roofers; the requirement is within 6 feet for roofers.
  2. Anchor points to be connected by drilling, welding, attaching to SNL structures/buildings utilized for fall protection purposes must be reported to the SDR/CO for SNL approval prior to installation and use.

Note: SNL will provide a professional structural engineer for the evaluation of a contractors proposed anchor points at SNL facilities. The proposed anchor points should be determined by the contractor during the planning stages of the project, as SNL will not be responsible for any delays caused by the evaluation of the proposed anchor points.

4th Follow Good Fall Protection Work Practices:

Good Work Practices

- Perform work at ground level if possible

  Example: building prefab roofs on the ground and lifting into place with a crane
- Tether or restrain workers so they can't reach the edge
- Designate and use safety monitors (This is less desirable of all the systems)
- Use conventional fall protection

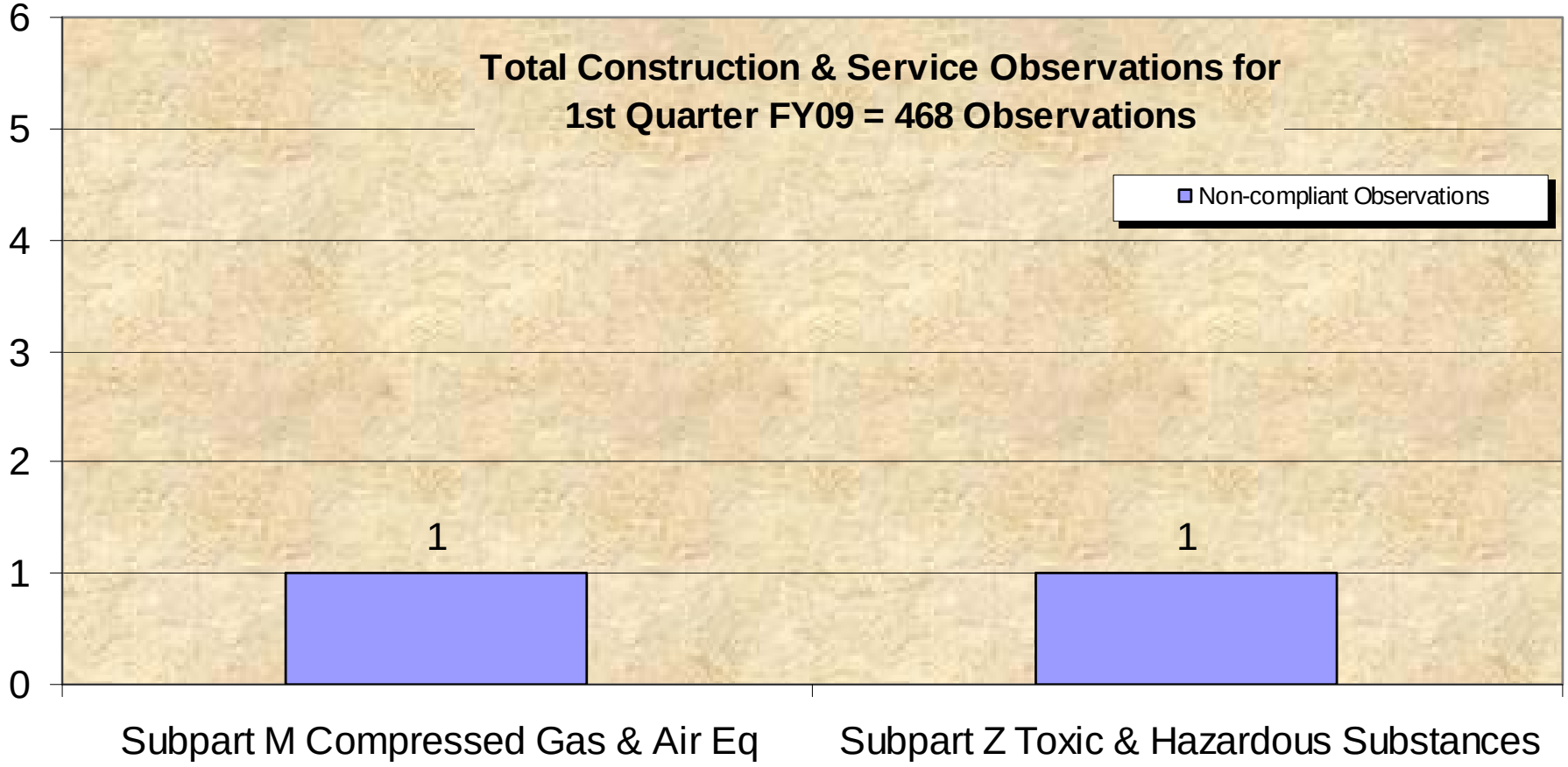
Summary

- If you can fall more than 6 feet, you must be protected
- Use fall protection on:
  - walkways & ramps, open sides & edges, holes, concrete forms & rebar, excavations, roofs, wall openings, bricklaying, residential construction
- Protective measures include guardrails, covers, safety nets, and Personal Fall Arrest Systems

Safety Observations Summary

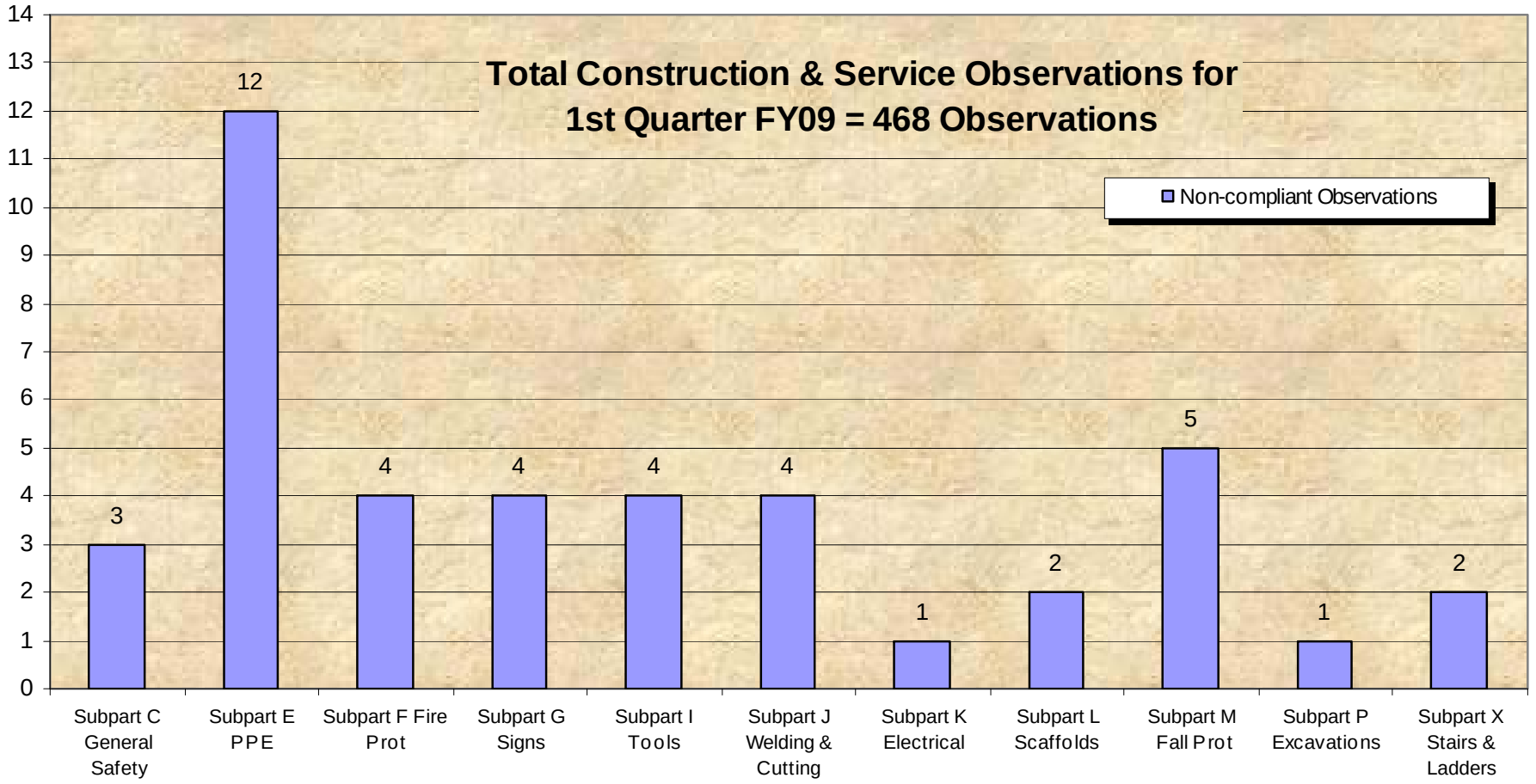
Greg Kirsch

Non-compliant Observations OSHA 1910 for Oct - Dec 2008



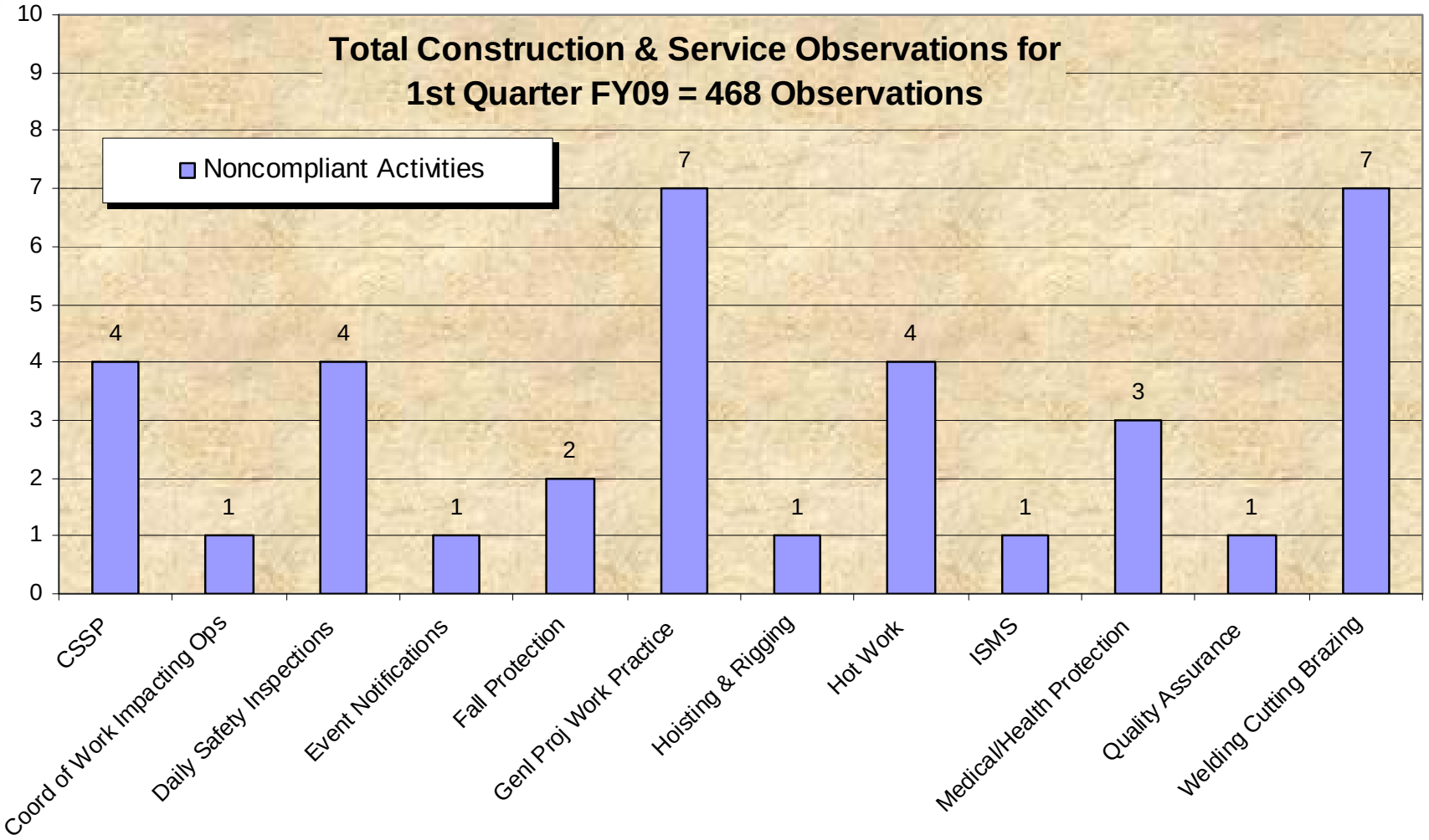
Sandia National Laboratories

Non-compliant Observations
OSHA 1926 for Oct - Dec 2008



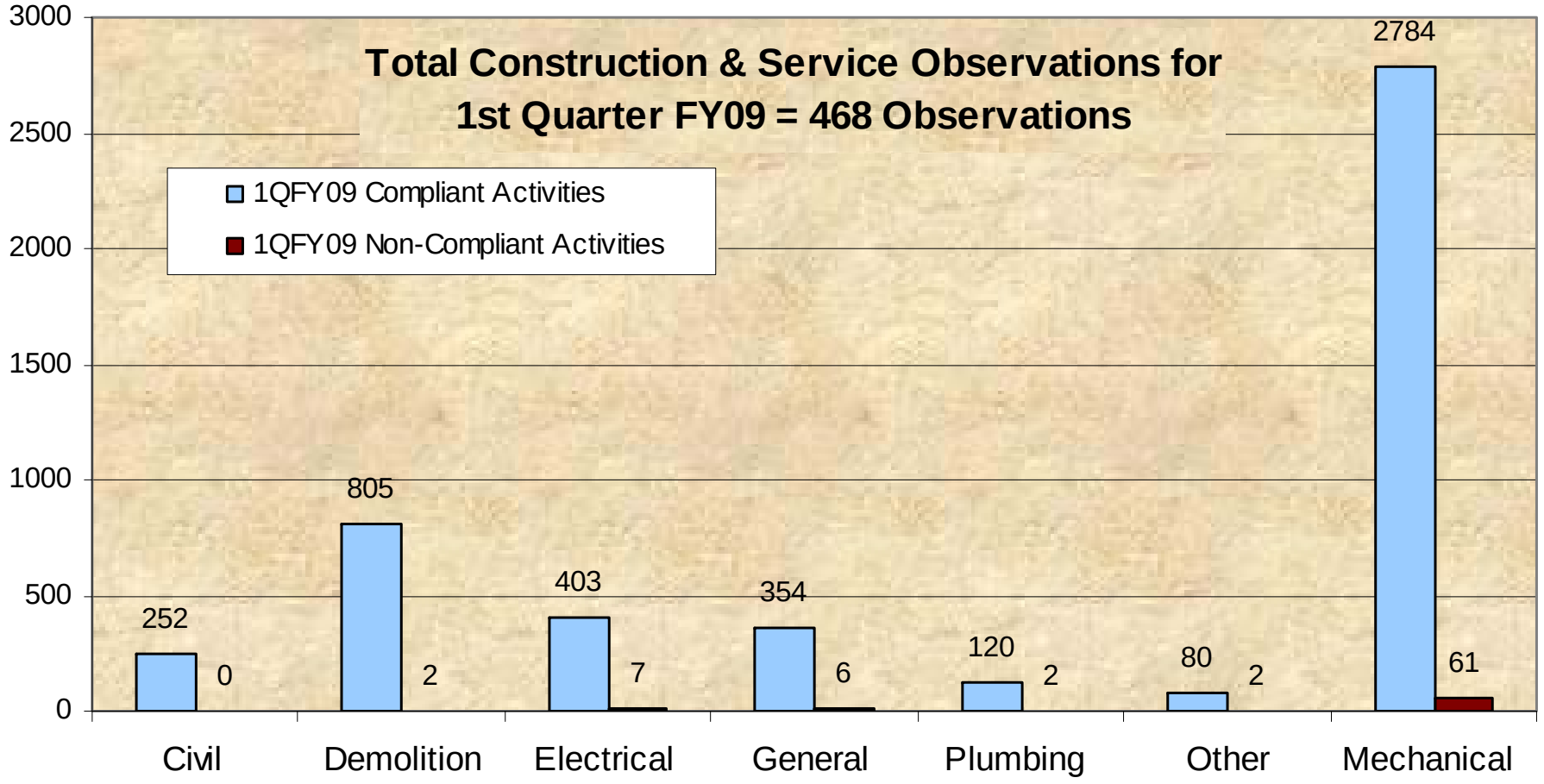
Sandia National Laboratories

Non-compliant Observations
01065 Spec for Oct - Dec 2008



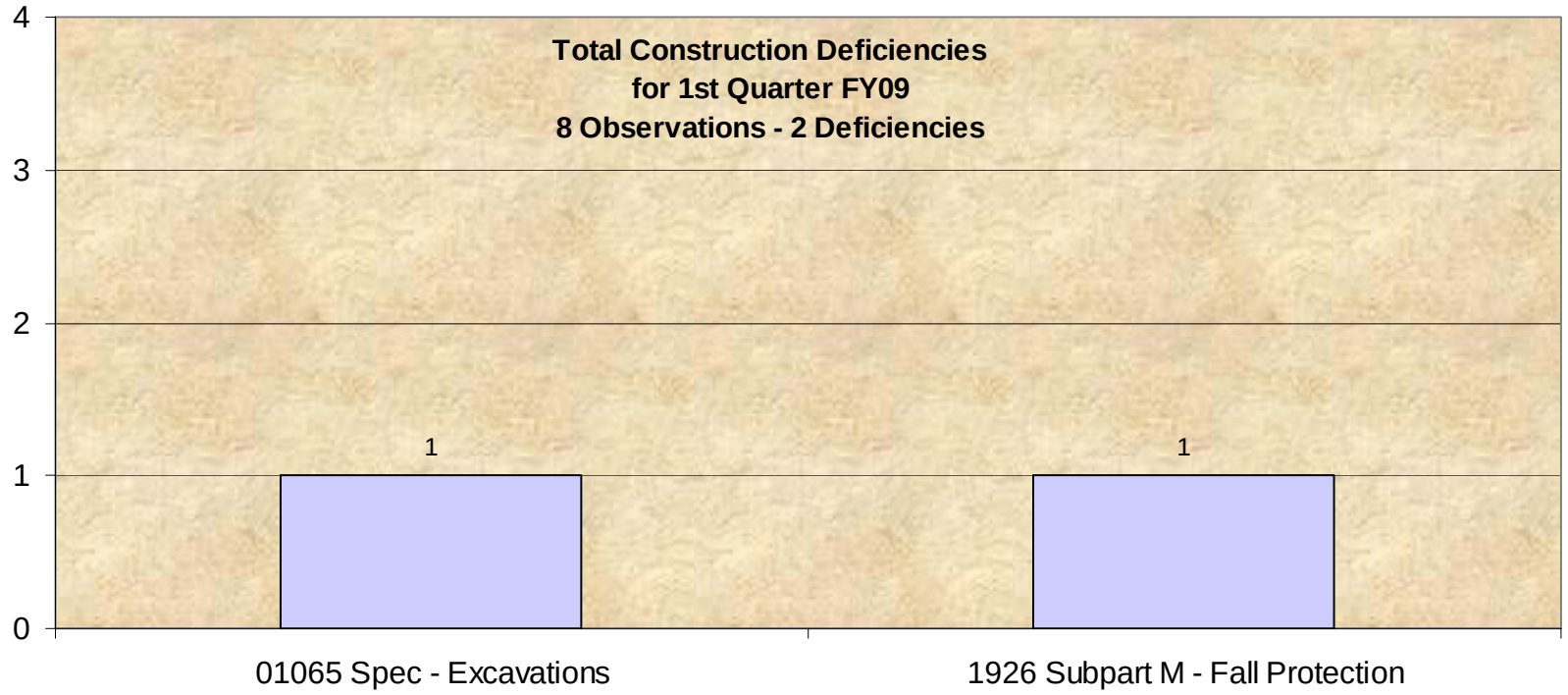
Sandia National Laboratories

Compliant vs. Non-compliant Observations by Discipline for Oct - Dec 2008



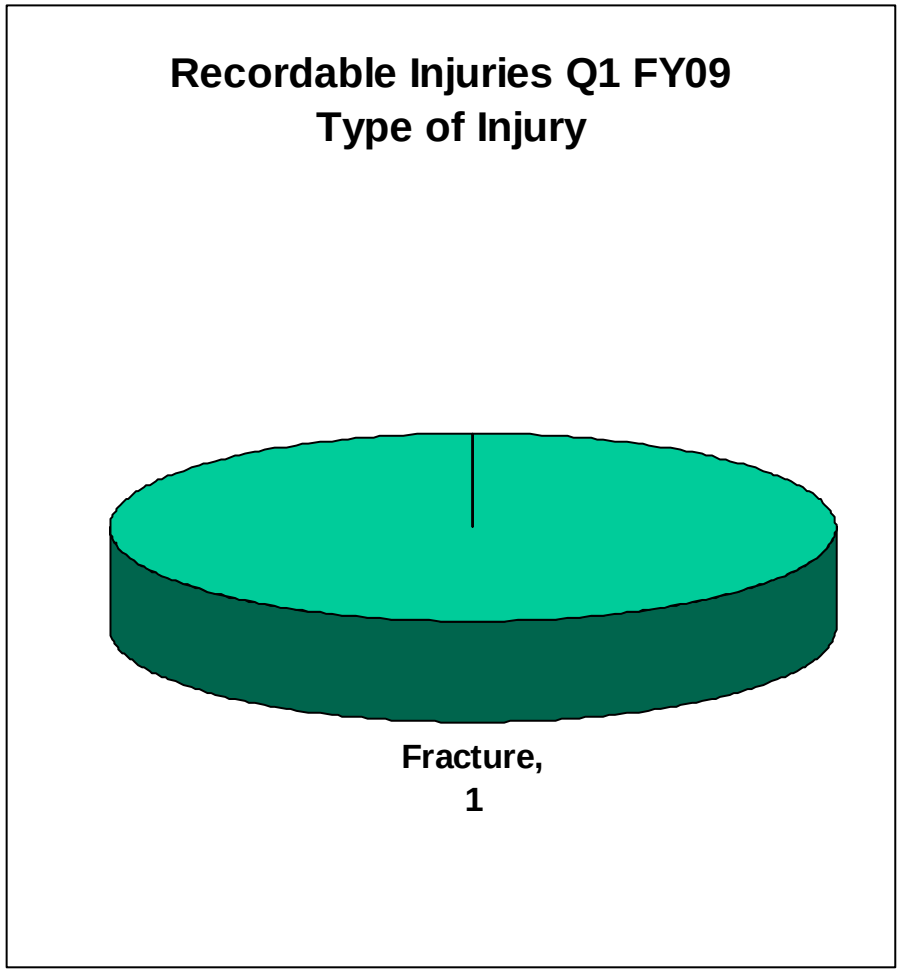
Sandia National Laboratories

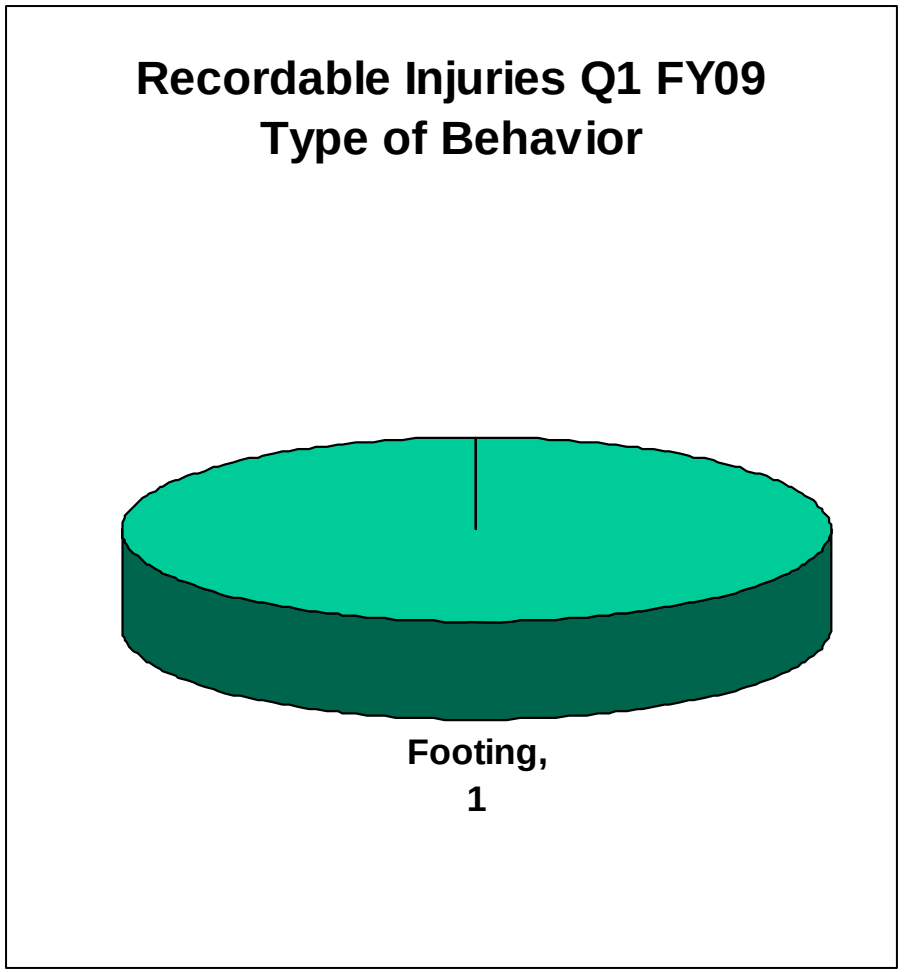
Construction Observations
Oct - Dec 2008



Sandia National Laboratories

First Aid Injuries
Type and Behavior





Sandia National Laboratories


STOP
STOP

New Mexico Environmental Department Construction Waste Visit Review

David Thomsen

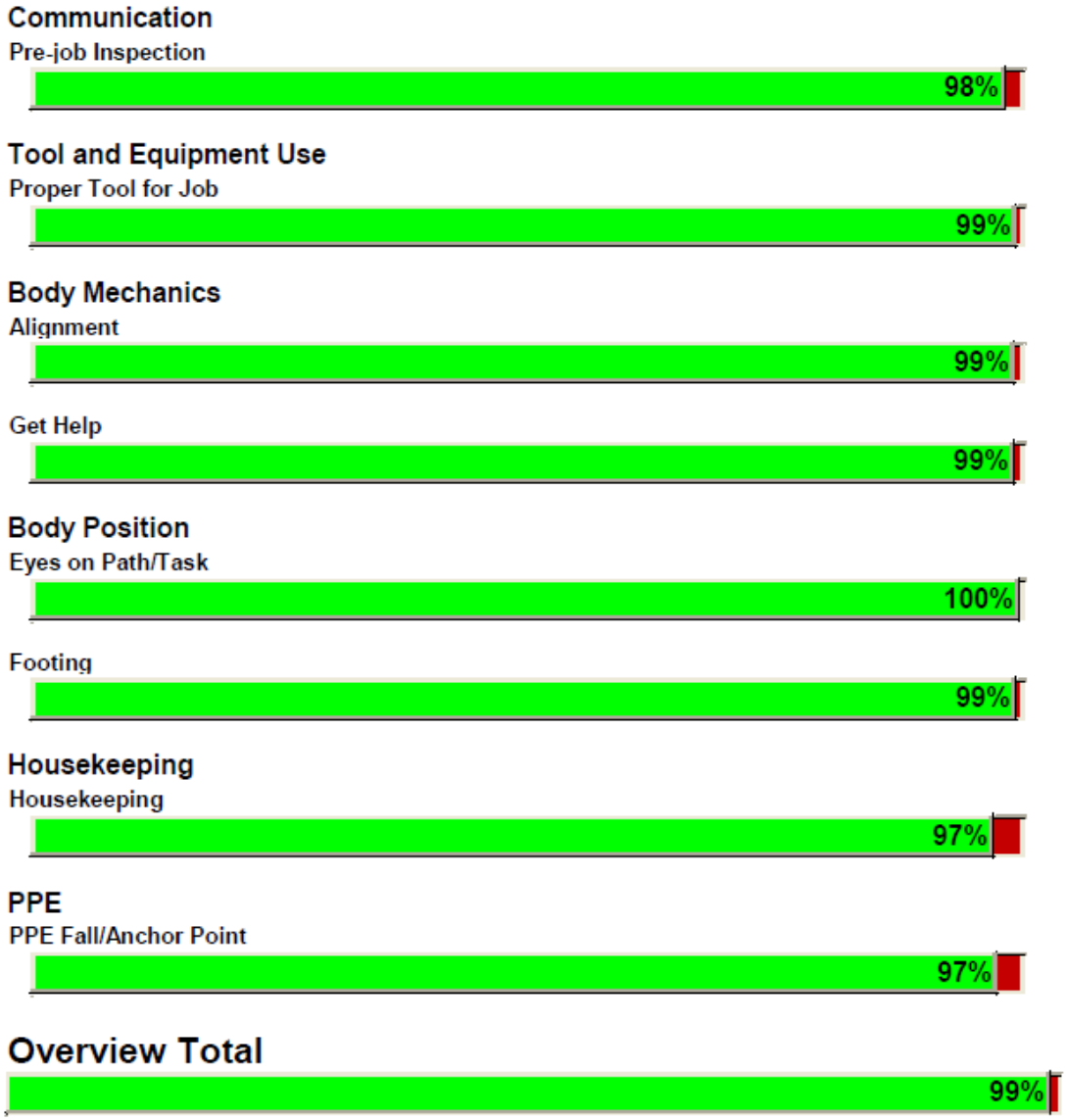
Overview

- Management of Hazardous Waste
  - Heavy Metals
  - Solvents
  - Aerosol Cans
  - Uncured Epoxies

BBS Behavior-
1st Qtr FY 2009 Data Review

William Tierney

1st Qtr Data Summary



Sandia National Laboratories

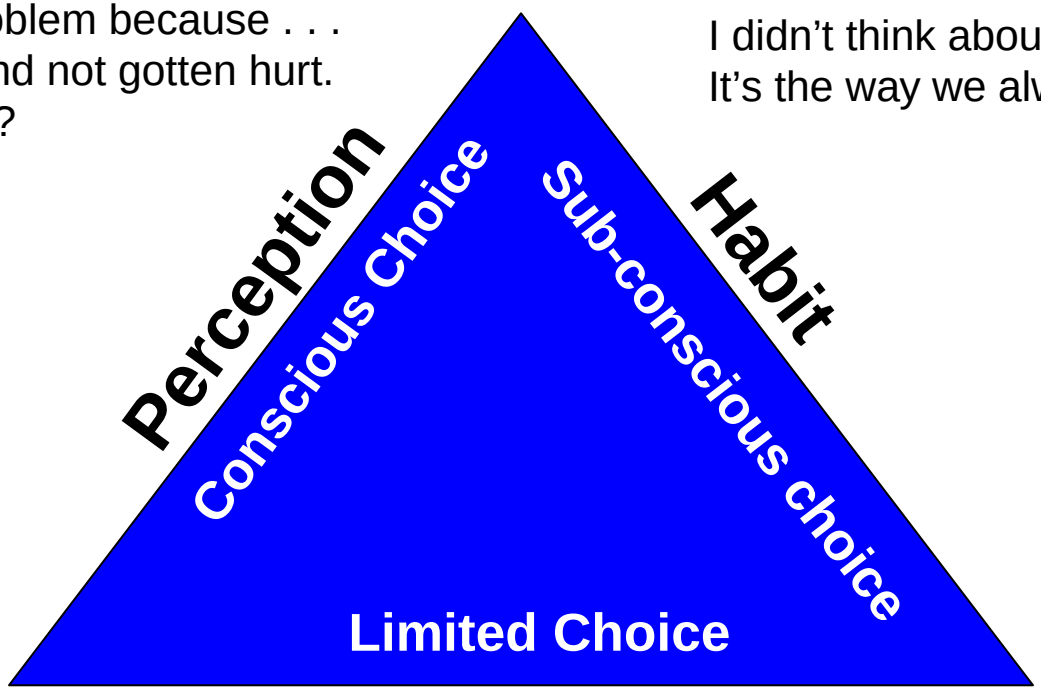
1st Qtr Data Summary

- October-December
- Total of 769 Observations
- Overall % Safe= 99% (99% last qtr)
- Lowest % Safe
  - PPE Fall/Anchor-97% (91% last qtr)
  - Housekeeping-97% (99% last qtr)

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?

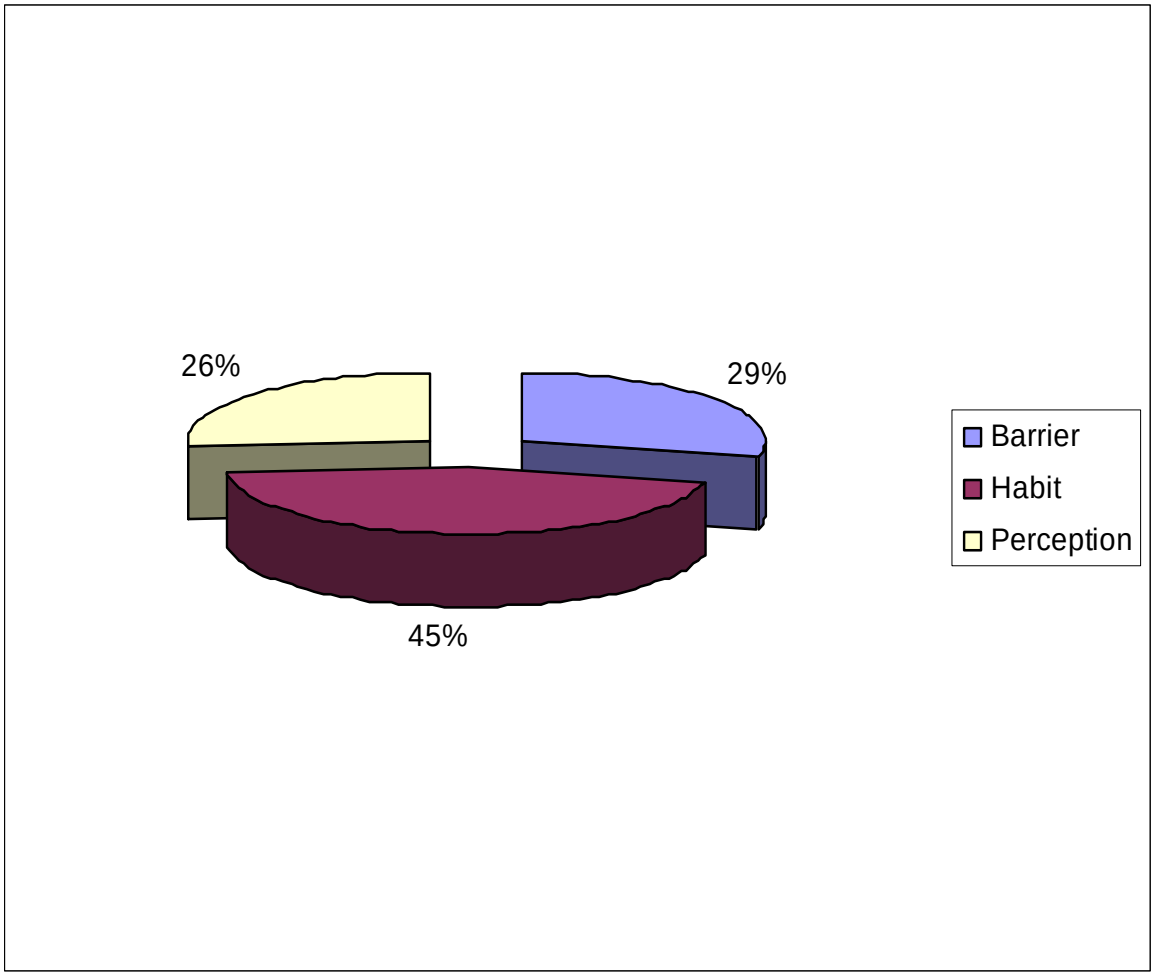
That's the way I always do it!
I don't know.
I didn't think about it.
It's the way we always do it around here



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: Sept-Dec

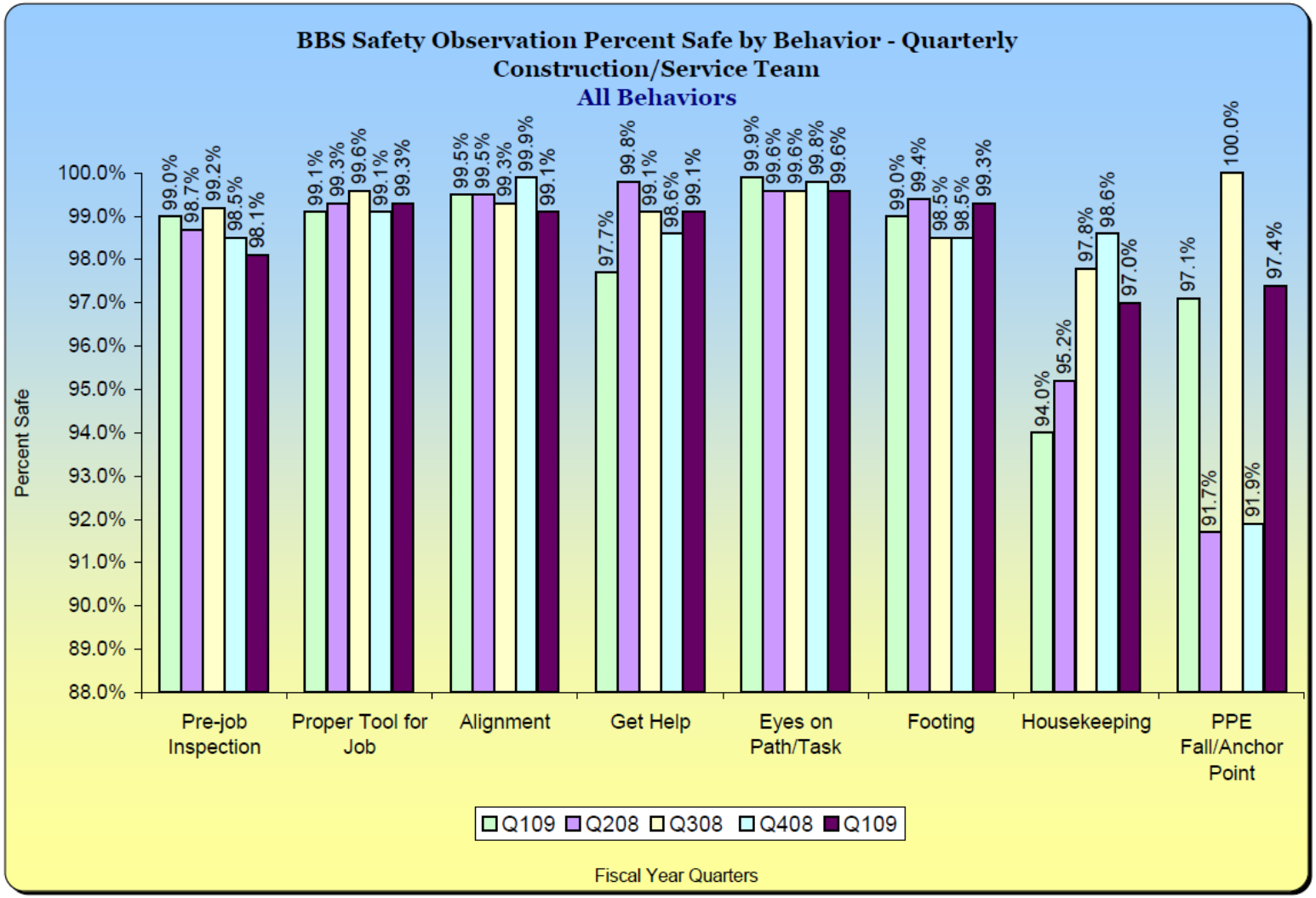


Sandia National Laboratories

Data Analysis

- Habit was first category (same last qtr)
  - Highest number of concerns: Housekeeping
- Barrier was second category (third last qtr)
  - Highest number of concerns: PJI and PPE Fall/Anchor Pt
- Perception was third category (second last qtr)
  - Highest number of concerns: Housekeeping

BBS Data-LTD



Sandia National Laboratories

BBS Program Updates-2009

- Behavior Review
  - Performed an evaluation of the behaviors to determine if some of the behaviors that consistently get high %safes need to be removed and replaced with new behaviors that can have a greater impact on the safety of the workforce at SNL. To do this, the CSC evaluated the following data:
    - Construction/Service Contractor Injury data: Conducted review of all injuries and assigned Behavior that could have prevented that injury from occurring.
    - Other behavior data: Reviewed all data provided on the "Other Behavior" category on the SOC and assigned a Behavior to each one based on the Master List.
    - DOE Occurrences: Reviewed all Occurrences during FY 08 and assigned Behavior that could have prevented that occurrence.

BBS Program Updates-2009

- New Behaviors
  - Electrical Awareness
  - Line of Fire
  - Slips/Trips/Falls
  - PPE All
- Removed Behaviors
  - Proper Tools for Job
  - Alignment
  - Eyes on Path/Task
  - Footing
  - Housekeeping

BBS Program Updates-2009

- SOC Changes
  - Added a Positive Observations section on the back of the card to provide a place to provide positive feedback that will eventually be provided to the company
  - Added a section to describe the activity being observed. This will allow a better review of the data.

Substance Abuse Program

Kerry Soileau

What is a Substance Abuse Program?

- Method by which companies set policies about what acceptable limits of drug and alcohol use will be while working, monitoring of those limits, and actions taken if limits are exceeded.

Why do I need a substance abuse program?

- Proposed State Law
- Insurance policies/premium discounts
- Regulatory requirements
  - Manufacturer's recommendations
- Local laws and jurisdictions
- Customer requirements
- Accident/injury prevention
- But mainly, because it is the right thing to do!

New Mexico Law

- Employers shall provide a place of employment that is free of unlawful drug use by employees and free of alcoholic beverage use by employees. To determine whether an employer has violated this subsection, the department shall consider whether the employer knew, or with the exercise of reasonable diligence, could have known of the presence of the prohibited unlawful drug or alcohol use.
- Employers shall develop and implement a written policy prohibiting unlawful drug use and alcoholic beverage use by employees in the place of employment.

How do I facilitate a Substance Abuse Program?

- Have a written program
- Partner with Occupational Medical provider for testing methods
- Consistently apply program across all levels of your organization
- Respect set point limits, no exceptions
- Refer employees to EAP or equivalent program
- Utilize insurance or WC providers for assistance

Possible Tools and New Products

JB Henderson does not have stock in or have first hand experience of the use of this product.

Sandia National Laboratories

Safety Stars

Anthony Baca

Closing Announcements

Construction Safety Seminar Schedule

Location: Mountain View Club

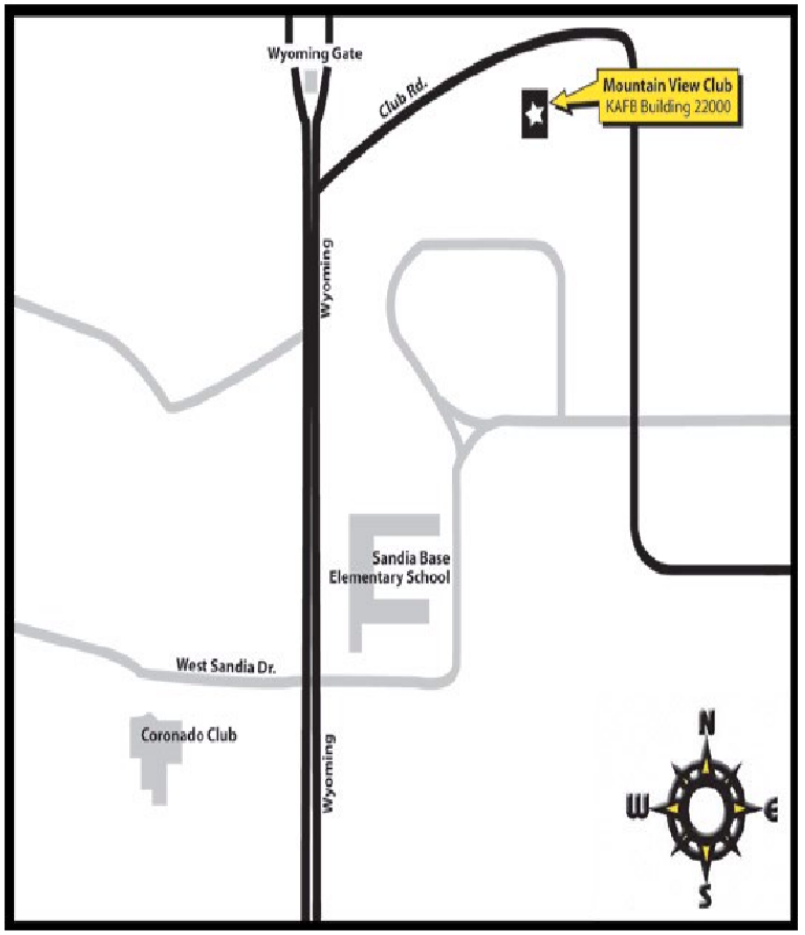
Time: 2:00 – 4:00 PM

Future Seminars:

April 14, 2009

July 14, 2009

October 13, 2009



Sandia National Laboratories

Contractors Quarterly Safety Seminar

Sign-In Sheet

PRINT CLEARLY

	Company	Name	Position (Safety Officer, Foreman, etc.)	Office Phone	Cell Phone	Email Address
1.	Southwest Hazard Control	Luis Olague	Superintendent	298-6930	228-0622	lolague@swhaz.com
2.	Sandia / Staff Aug	David Thomsen	Environmental	845-0835		
3.	Bryson	Gary Benavidez	PM	892-6163	450-1274	gbenavidez@bryson.com
4.	Coronado Wrecking	Barbara Bertram	Safety / FSO Assist	877-2821	850-6163	coronado113@questoffice.net
5.	Triangle Paving	Marty Thy	Pres	247-2970	250-0488	Trippve@msn.com
6.	Summit	Raymond Moya	Gen Supt	842843	980-4485	rmoya@summitconstr.com
7.	B&D Enrd.	Kenneth Easley	P.M.	299-4464	991-3073	keasley@b-d-electric.com
8.	SNL	Wes Mozley	MAINT	844-6288		wrmozle@sandia.gov
9.	SNL	Andrew Zeitler	SAFETY	284-8808	—	azeitle@sandia.gov
10.	ALL INC.	Rick Montaño	Safety	292-4848	975-6811	
11.						
12.	SNL	BRYANT REELEY	INSPECTOR	284-2996	—	—
13.	SNL	Richard Dramer	OT	844-7256		radrame@Sandia.gov ✓
14.	ALPHA Const.	Billy DeROSIA		867-4200		
15.	Comark Bldg Syst.	Rose Trujillo	Safety mngr.	345544	318-4544	oldbuzzerd@yahoo.com
16.	B&D	DON WEEKS	FOREMAN	8444976	991-6628	dweeks@b-d-electric.com
17.	Cross Connection	Lorenzo Ramirez		344-4834		
18.	CROSS CONNECTION INC	JAMES APODACA	SUPERINTENDANT	344-4834	507 2349	
19.	SNL	Jeff Quintana				
20.	SNL	Lynwood Dukes				
21.						
22.						
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.	Woodward Metal Co	Michelle Rivera	Safety Officer	237-1122	385-6740	woodwardmetal@msn.com
2.	EESI	ANTONIO GONZALES	SAFETY OFFICER		319-9411	agonzalesii@eentelcomm.com
3.	EESI	Cheryl Largo	= JW	275-9369		
4.	EESI	JUAN SOLANO	JW	275-9369		
5.	TEF Construction	Emily Miller	Safety	293-2393	2690438	TEFconstEM@aol.com
6.	"	Mario Gonzales	Laborer	"		
7.	"	Eloy Gutierez	"	"		
8.	JB HENDERSON	DAVE BEUZEKOM	PROJ. MGR	292-8955	975-3882	dbeuzekom@JBHENDERSON.com
9.	JB Henderson	Mariana Herrera	Project Engineer	292-8955	385-0759	mherrera@jbhenderson.com
10.	EESI	SANTOS ORTEGA	ELECTRICAL	275-9369	804-3842	
11.	Rupert Plumbing & Heating	Chris Augster	PM/Safety	247-8138	321-0497	chris@rupertph.com
12.	Rupert Plumbing & Heating	CARLOS UCERO	SUPER	321-0762	" "	CARLOS@RUPERTPH.COM
13.	EESI	Toby Garcia	P.M.	275-9369	319-6763	tgarcia@eentelcomm.com
14.	EESI	JOEY SOLIS	PM	275-9369	804-3842	JSOLIS@ENTELCOMM.COM
15.	JB HENDERSON	JOHN J ORTEGA	SAFETY REP	292-8955	975-2329	jortega@jbhenderson.com
16.	SNL	Anthony M. Baca	Mgr.	844-3553		
17.	SDV Construction	MARVIN DUNCAN	Project Engineer	903-0814	903-0814	marvin@sdvconstruction.com
18.	SNL	Joseph James Gonzales	Elect. Inspect.	284-0295		JJgonza@sandia.gov
19.	SNL	William Tierney	PM	845-0633		wjtierne@sandia.gov
20.						
21.						
22.						
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.	SDV	Jerry Morgan	OPS Manager	903-376	903 0165	jerry@sdvconstruction.com
2.	TEF	Michael Martinez	Foreman	293-2343	9345618	
3.	SAMCON Inc.	Charles Martinez	Safety Manager	2712025	4636268	charles@samconinc.com
4.	SNL	Marcos Martinez	/	844-8091		MMarti3@Sandia.gov
5.	SNL	PAUL SILVA	INSPECTION	844-5627	235-9646	PSILVA@SANDIA.GOV.
6.	SNL 4844	Bruce Bryant	SAFETY	844-8886	238-0856	bbryan@sandia.gov
7.	SNL - 4844	James L. Rush	SNL Manager	844-1962	—	jlrush@sandia.gov
8.	SNL - 4000	Carla J Lamb	ESandH	844-1753	—	cjlamb@sandia.gov.
9.	SNL - 4844	Greg Kirsch	Safety	845-9491	—	gekirse@Sandia.gov
10.	SNL	Linda Sells	Admin	844-8552	—	lcsells@sandia.gov
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						
21.						
22.						
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.	SUMMIT CONSTRUCTION	JAMES NORTH	COMPLIANCE ADM.	842-8113	264-9923	jamesn@summitconstr.com
2.	Cross Connection Inc	phillip Ramirez	PM Safety officer	344-4834	507-2345	—
3.	Cross Connection INC	Carlos Salgado		344 4834	507 2845	
4.	DEL RIO ENT. INC.	Richard Connell	FIELD SUPVR	341-9055	259-8213	
5.	Del Rio Ent. Inc	Emilio Lopez	Foreman	341-9055	239-7116	—
6.	~~Rodney Rivera~~					
7.	Woodward METAL CO.	Rodney Rivera	Foreman	237-1122	604-5050	—
8.	Summit Const.	Tito Vigil	Field supv	342-8113	489-6992	titov@summitconstr.com.
9.	SNL	Karen Reinke	PM	284-9717		
10.	SNL	Carol Bichel	PM	284-1748		
11.	SNL	Patsy Rowland	designer	844-5315		
12.	SNL (APPLEONE)	Roger Bell	INSPECTOR	284-2098	331-6785	rodbell@gov.com
13.	SNL	Rick DeLaRosa	"	284-3700	239-6591	rdelaro@sandia.gov.
14.	UNM/A/SNL	Douglas Schleicher	"	844-1836		Dschlec@sandia.gov
15.	SNL	Rod Justus	INSPECTOR	845-1313	220-4146	RTJUSTV@Sandia.gov
16.	FAIT/ASBESTOS/SNL	Anthony Lovato	PM	844-5908	977-5993	aalova@sandia.gov
17.	ECI	Scott Gifford	Safety officer	268-9920	459-7716	Sgifford.eci@comcast.Net
18.	Summit	Mark Thomas	Foreman	263-0851	263-0851	Mark@SummitConstr.com
19.	B&D ELECTRIC CO.	Richard Mirabal	PM/Foreman	259-4464	991-6427	richardm@bd-electric.com
20.	~~Precision~~ ALPHA	John Martinez	Safety officer	867-4700	610-7163	
21.	ALPHA	Ken Lopez			4505049	
22.	SNL	C Bryan Brennan				
23.	Rupert P.M.	Jeff Z. Wolfe	Const Mgt Foreman	247-8138	315-4278	
24.	LARRY ECKHARDT	US ELECT COMP	PROJ MGR	260-1000	331-8337	larrye@uselectricalcorp
25.	SNL 4131	Doug Vetter	PQ	284-3210	NA	dvette@sandia.gov
	SNL	Bryan Smith	CM	284-3273	NA	bsmith@sandia.gov
	DEL RIO ENT	Universal Concrete	Foreman			

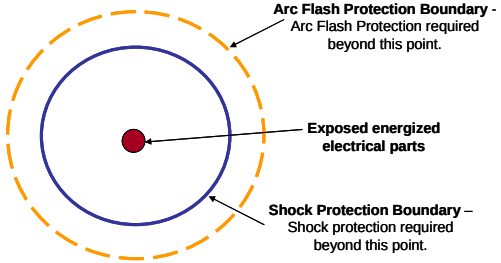
Arc Flash/Blast

Arc Flash/Blast occurs when an energized source comes in contact with a grounded source creating an unexpected release of energy in the form of heat, noise, and pressure.

Effects

May cause severe burns, eye and hearing damage

Boundaries must be established around exposed electrical parts to ensure personnel are protected. These boundaries are established by the energy source characteristics. The NFPA standard for electrical safety in the workplace provides the appropriate distance measurements.



Training & authorization are required prior to personnel entering an established electrical boundary.

Fire

Fire may occur when electrical systems (wiring, extension cords) are over-loaded and create heat.

Effects

If combustibles are present fire may result.

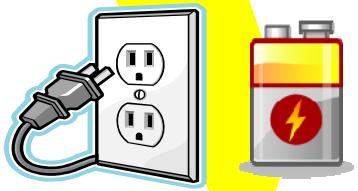
What is Electricity?

Electricity is Energy

It's measured in volts & amps, and powers lights, power tools, computers, etc.

Types of Electrical Energy

- Alternating Current (AC) power sources are generally supplied by generators. (What most of us are exposed to)
- Direct Current (DC) power sources are generally supplied by batteries.

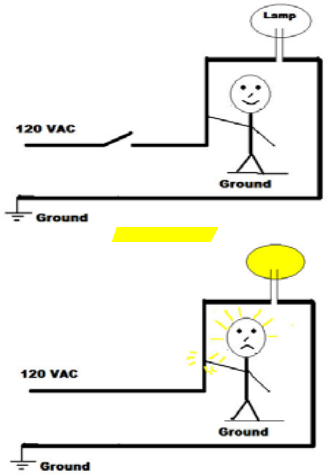


How does electricity travel?

- All electricity eventually flows to the ground.
- Electricity travels through conductive material, such as copper, aluminum, silver, even air & water. Given the right circumstances electricity will flow through the human body.
- Electricity will travel through a circuit from its source to the load (light bulb) and back to its source.
- When the circuit is interrupted multiple hazards can occur.

ELECTRICAL SHOCKS

Electrical Shock occurs when a part of the human body becomes a conductor, thus completing part of the path for current to flow to ground.



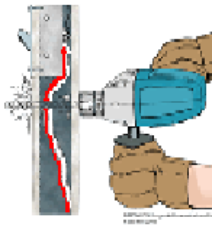
Effects of Shock

- The effects from shock range from tingling sensations to heart failure, depending on the path & amount of current that passes through a victim. As little as 5 milliamps (not enough to light a 60 watt light bulb) can harm a human body, 50 milliamps can cause heart fibrillation, and 100 milliamps causes the heart to stop.
- Respiratory paralysis may also occur and can be potentially fatal.
- In addition to the direct effects (pain, paralysis, heart fibrillation and tissue burn), a shock victim may immediately feel confused & may experience amnesia, headaches, or breathing and heart irregularities.

Electrical Hazards in Removable Metal Partitions (Dowcraft Panels)

There have been 2 events at Sandia in the past 2 years where non-electrical workers were exposed to electrical hazards while modifying removable metal partitions (Dowcraft Panels).

The base and cap strip areas of the metal partition walls are identified and listed as electrical raceways. As a result these spaces often contain electrical conductors insulated with non-conductive plastic covering. The SNL Facilities' Metal Partition and Electrical Specifications have been modified and now require electrical circuits to be run in flexible metal conduit or metal clad cable. The flexible metallic conduit and metal clad cable provide additional physical protection to the conductors, to reduce the potential for damage to conductors during modification work. Older installations still contain conductors without flexible conduit.



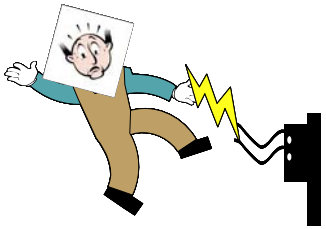
Prior to performing any modification work on metal partitions you should:

- Be aware of the controls identified by your employer to protect you and your co-workers from electrical hazards associated with the modification work.
- Contact your supervisor if you discover new or unidentified electrical hazards.
- A re-evaluation of existing controls shall be performed for any new hazards discovered to ensure work is performed in a safe manner.

Asbestos Abatement Worker Receives Shock

An asbestos abatement worker removing asbestos-containing wallboard from a plumbing chase found an electrical box containing two exposed electrical wires hidden within the chase.

The abatement worker knew that an electrical contractor had previously de-energized the electrical receptacles and lighting located in the abatement area. So the worker proceeded to vacuum around the newly exposed electrical box.



When the worker's hand came in contact with the exposed conductors, the worker received a shock. The conductors were still energized.

The electrical worker who de-energized the area prior to the abatement did not know that the electrical box was hidden within the chase, and therefore it had not been tested to verify de-energization.

Who can you call if you have concerns? Your supervisor or FMOC Construction Observer or Project Manager.

IF IN DOUBT, CEASE THE ACTIVITY AND CALL FOR HELP.