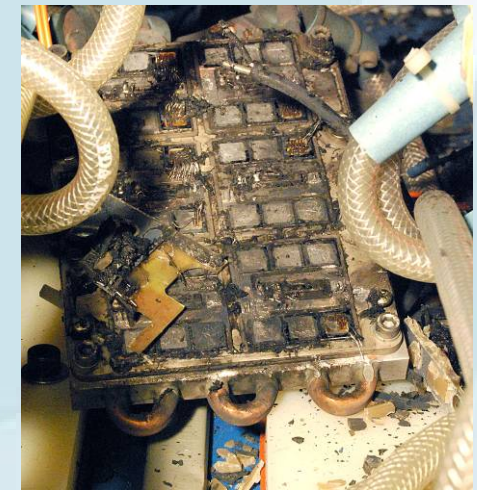




# Focus on Safety '08: Incident Notification and Prevention

Aug 2008





# Objectives

- Learn from incidents, investigations, causal analysis, and corrective actions
- Describe recent SLAC incident trends
- Review the new Incident Reporting and Notification Protocol
- Participate in Injury Prevention Brainstorming Process

# SLAC ES&H Policy

- Use ISEMS
- Healthful & safe workplace
- Sustainable operations
- ALARA
- Integration of ES&H concepts into all phases of operation
- Compliance and Best Management Practices
- Line Management of ES&H
- Identify & stop unsafe activities
- **Learn from successes and deviations from expected outcomes, and encourages workers to both report these instances and provide feedback**



Stanford Linear Accelerator Center Environment, Safety and Health Policy

SLAC is committed to protecting the health and safety of on-site personnel, the public, and the environment as it carries out its scientific mission. Each of the laboratory's directorates is responsible for implementing the Environment, Safety and Health (ES&H) Program through line management. In addition, management at all levels is expected to ensure that all employees understand the content and importance of this ES&H Policy. In turn, employees are responsible for integrating ES&H considerations into their own work activities. The SLAC Director has ultimate responsibility for ES&H at the laboratory.

Through employee and management involvement SLAC will:

- Use our Integrated Safety and Environmental Management System to protect human health and the environment through:
  - Defining the scope of work
  - Identifying and analyzing the hazards
  - Developing and implementing hazard controls
  - Performing work safely
  - Soliciting and using feedback for continuous improvement
- Seek to maintain a healthful and safe workplace, free of recognized hazards and occupational injury and illness
- Wisely use and conserve natural resources and conduct our activities in a sustainable manner
- Conduct operations such that the production of radioactive materials and exposure to radiation is maintained as low as reasonably achievable
- Integrate environment, pollution prevention, safety, health and quality into project planning, design, construction, operations, maintenance, and decommissioning of facilities
- Ensure compliance with all applicable laws, regulations, and best management practices
- Put policies, programs and professional ES&H staff in place to ensure line management can carry out their responsibility for ES&H implementation

Workers have the authority and responsibility to stop, or not perform, any task when there is a reasonable belief that the task poses imminent risk of death or serious injury. In such a case, the workers must report this to their supervisor immediately.

SLAC recognizes the need to learn from successes and deviations from expected outcomes, and encourages workers to both report these instances and provide feedback. This is an essential part of our continuous improvement.

Signed   
Persis S. Drell, SLAC Director

SLAC-I-720-0A00B-003-R001

# Review of Recent Events

# Incidents Since Oct. 2007

Event	Date	Type	Directorate	Subcontractor?	Root Causes													ORPS						
					ISM Core Functions					Causal Analysis Factors								Category	Significance Category					
					Scope of Work LTA	Analyzed Hazards LTA	Controls LTA	Work within Controls LTA	Feedback / Improvement LTA	Design engineering problem	Equipment /material problem	Human Performance LTA (mind not on task)	Management Problem	Communication LTA	Training deficiency	Other Problem	Unknown/Unidentified							
Hand injury from shotcrete	10/11/2007	Injury	LCLS	Sub	●						●		●											●
RMI from crimping	10/12/2007	Injury	SSRL			●				●			●											●
Fall from 18" platform	10/16/2007	Injury	ETS			●							●	●										●
Wrist injury moving conduit	10/27/2007	Injury	ETS					●					●	●										●
Forearm laceration cutting concrete form	11/14/2007	Injury	LCLS	Sub		●							●	●										●
Abdominal hernia while reaching for material	12/10/2007	Injury	ETS			●							●	●										●
Knee injury from fall on Sector 24 stairs	1/9/2008	Injury	ETS			●				●			●	●										●
Shoulder injury while tightening flange	1/15/2008	Injury	SSRL					●					●	●										●
Trunk contusions when struck by excavator	1/17/2008	Injury	LCLS	Sub		●							●	●										●
Back injury when lifting mirror	2/11/2008	Injury	SSRL					●					●	●										●
Finger contusion while closing car door	2/26/2008	Injury	OPS	Sub		●							●	●										●
Arm lacerations from tripping	3/5/2008	Injury	LCLS	Sub		●							●	●										●
SNS Modulator Explosion	3/21/2008	Electrical Fire	PPA			●						●		●										10 4
Rad Material found in B40 Decommissioning	3/17/2008	Misc.	OPS		●									●										10 4
Chemical dye in eye from pressurized water line	3/25/2008	Injury	ETS		●					●			●	●										
Hand Injury LCLS Rigging	4/9/2008	Injury	LCLS	Sub		●	●	●					●	●	●									10 2 ●
Water Spill in BSY	4/9/2008	Spill	ETS	Sub				●					●	●										10 3

**LTA = Less than adequate;**

**ORPS = DOE Occurrence Reporting and Processing System**

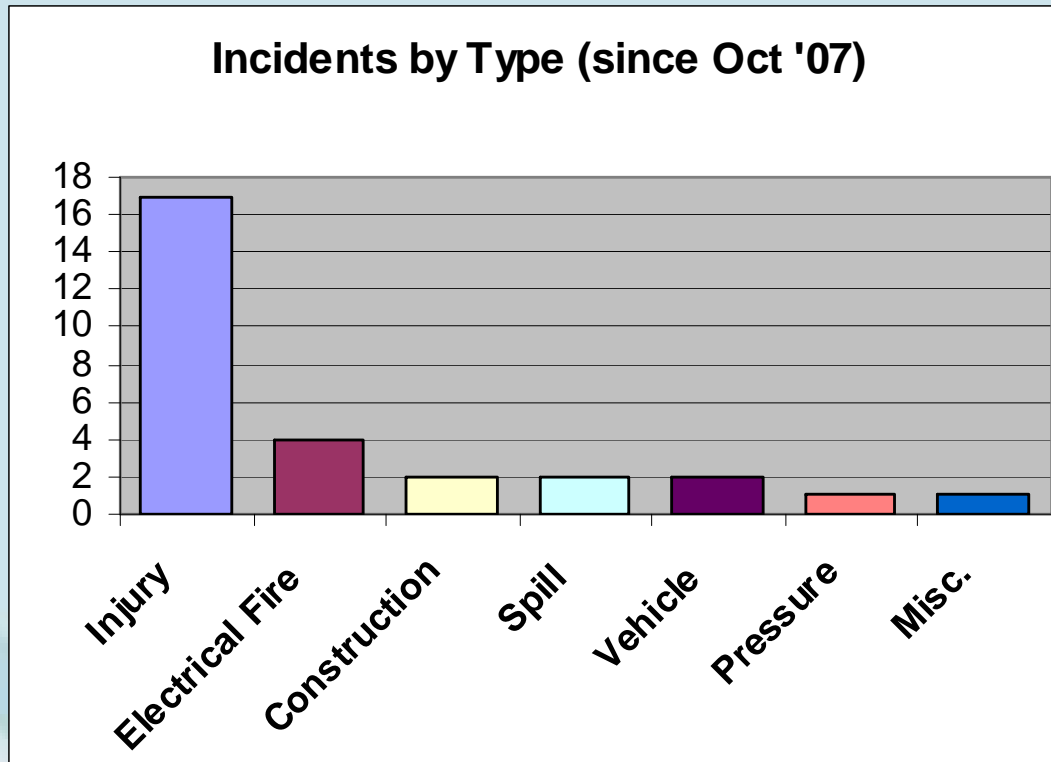
# Incidents Since Oct. 2007

Event	Date	Type	Directorate	Sub contractor?	Root Causes													ORPS			
					ISM Core Functions					Causal Analysis Factors								Category	Significance Category	DART	
					Scope of Work LTA	Analyzed Hazards LTA	Controls LTA	Work within Controls LTA	Feedback / Improvement LTA	Design engineering problem	Equipment /material problem	Human Performance LTA (mind not on task)	Management Problem	Communication LTA	Training deficiency	Other Problem	Unknown/ Unidentified				
ESB 2000W Power Supply	4/16/2008	Electrical Fire	PPA								•		•						2	3	
Erratic Bulldozer Event	4/24/2008	Construction	LCLS					•				•	•						4	3	
Roll-over of 3-Wheeled Cart	4/24/2008	Vehicle	ETS					•			•	•	•								
Back injury lifting heavy object	4/24/2008	Injury	OPS					•				•	•								•
Klystron Capacitor Bank Fire	4/29/2008	Electrical Fire	ETS					•			•		•					10	3		
Runaway Vehicle at MCC	4/30/2008	Vehicle	LCLS		•							•	•								
Needlestick in SSRL Lab	5/2/2008	Injury	SSRL	Sub	•	•						•	•		•						
Viewport Blowout in SSRL Chamber	5/12/2008	Pressure	SSRL		•	•			•			•	•								
Employee Ankle Fracture	5/14/2008	Injury	SSRL									•	•								•
Water Spill Into Storm Drain at IR-8	5/15/2008	Spill	ETS					•			•		•								
Bellows Failure of LCLS Chilled Water Line	5/16/2008	Construction	LCLS					•	•				•					10	4		
IGBT Power Supply Switch in SNS Modulator	5/20/2008	Electrical Fire	PPA								•		•								

FY 08 Data - TRC = 17, DART = 12, First Aid = 30 as of July 1, 2008



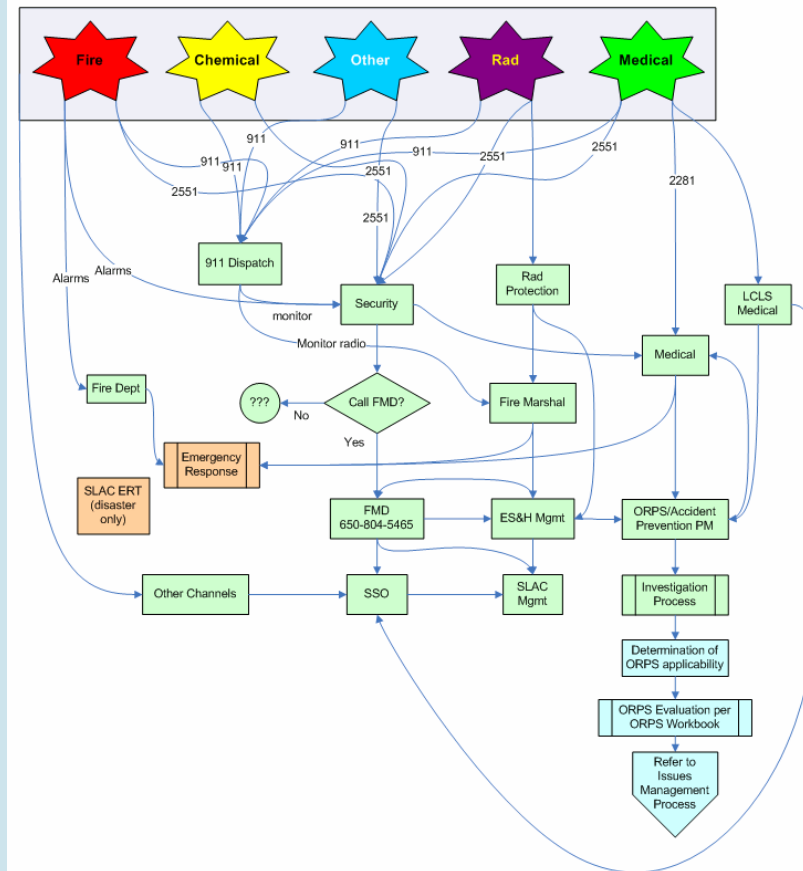
# Incident Type



# Concerns with Existing Reporting

- Too many pathways of notification
- Confusion over what should be notified
- Delays in reporting
- Confusion over to whom notification should be made
  - Reluctance to call 911
- Confusion over when notification should be made
- Ineffective use of emergency resources
- Delays in investigation process
- Management being surprised by incidents after the fact
- Quality of ORPS notification reports

Incident Notification: Current Version



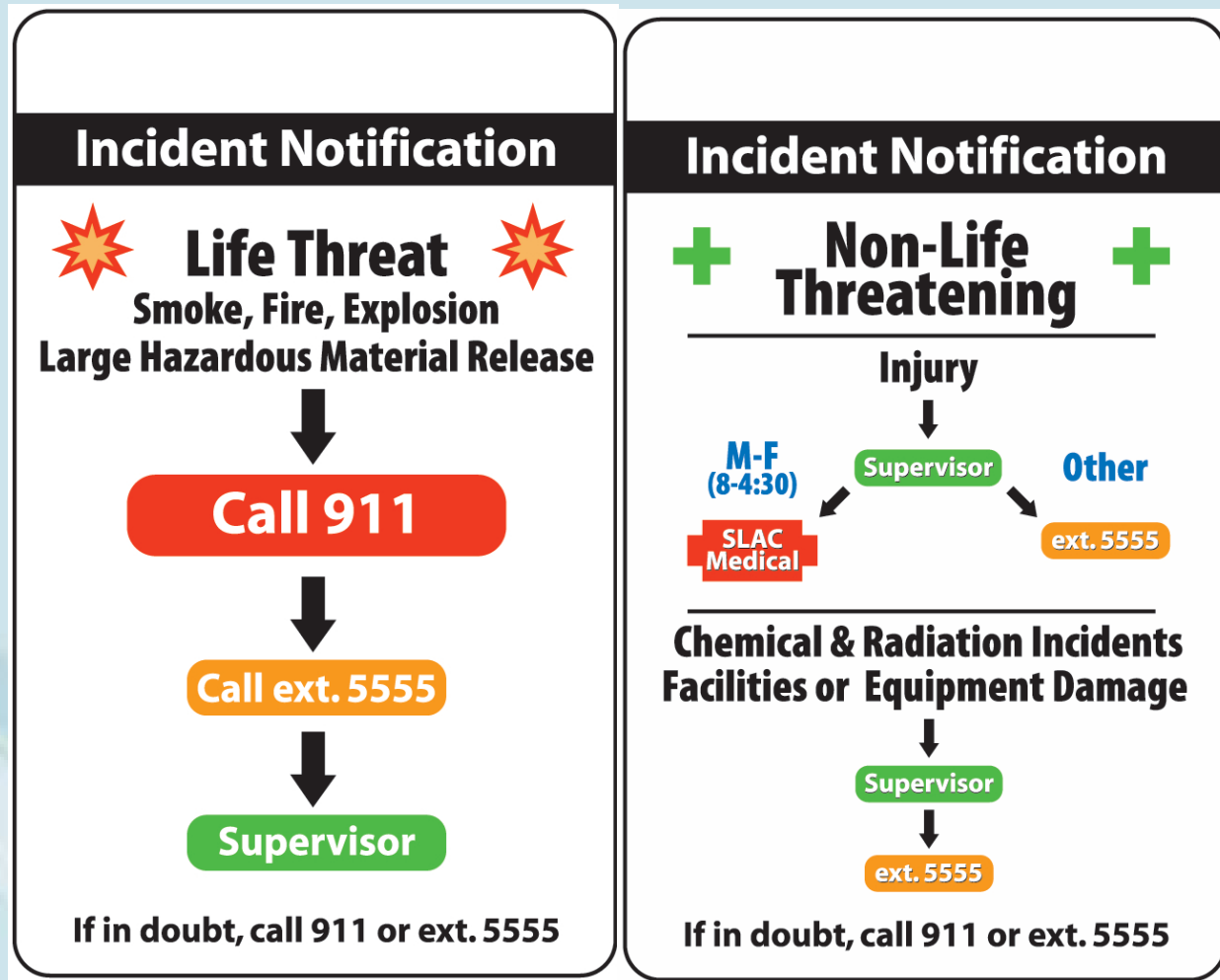
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# New Reporting Protocol and Thresholds

# Event Reporting Badge Card for Employees, Users, Subcontractors



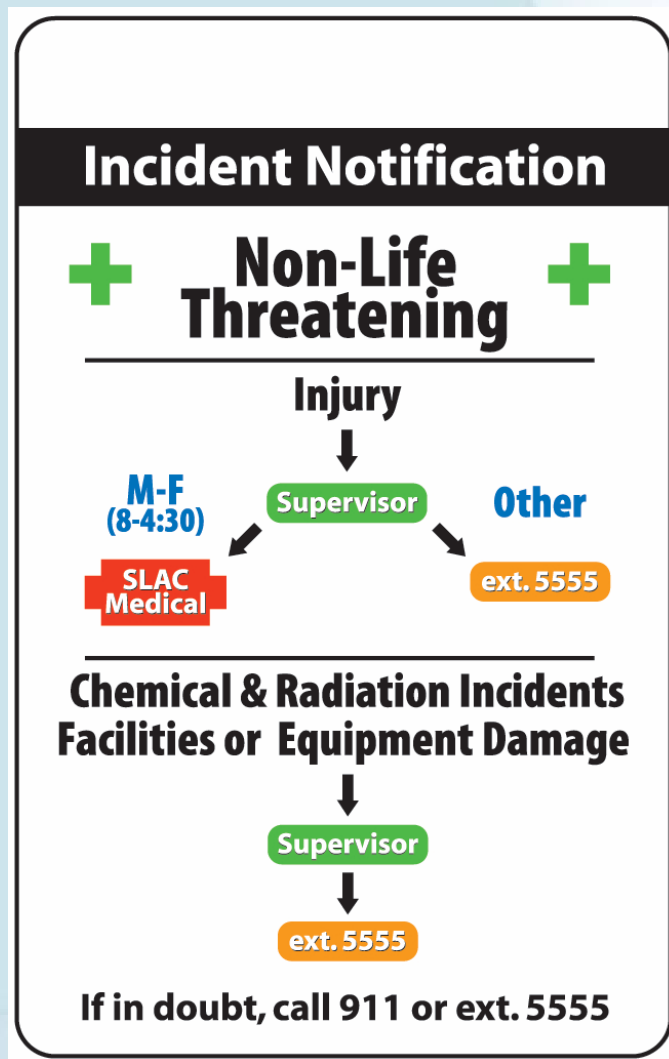
# Incident Notification - Life Threat

- For life threatening incidents, always call 911
  - Examples include: incidents involving severe injuries, significant amounts of smoke, a fire, an explosion or a large release of hazardous materials, dangerous law enforcement situations
- Calling Sequence
  1. 911 will roll emergency responders (Fire & EMS)
  2. ext. 5555 will activate internal response and notification
    - Via mobile phone: 650-926-5555
  3. Your supervisor
- Call from safe location; provide detailed information and where you will meet responders




# Incident Notification – Non-Life Threat

- For all Non-Life Threatening incidents:
  - Inform your supervisor first
- For Injuries/Illnesses:
  - During SLAC Clinic hours (8 AM-4:30 PM), report to clinic for treatment
  - After SLAC Clinic hours, call ext. 5555 for instructions from Security on what clinic to go to
- For Non-Life Threatening Chemical or Radiation incidents and Facilities or Equipment Damage:
  - Call ext. 5555; needed to activate internal response, reporting and investigation processes
- **Whenever in doubt call 911 or Security at extension 5555**



# Incident Notification: Additional Details

- Non-life threatening situations (notify supervisor, then ext. 5555):
  - Unusual odors
    - Note: suspected natural gas leak → call 911.
  - Any unplanned environmental release of ANY liquid, solid or gas. (Viz., **OUTDOORS or to INDOOR AIR OR DRAINS**)
  - Small chemical releases
    - Guideline: **spills of hazardous materials less than 1 pint/1 pound & ability to clean up safely can be done so locally; otherwise, should be reported as an emergency**
      - If in doubt, call ext. 5555 or 911
  - Alarm notifications (audible and/or visual)



# Incident Notification: Additional Details

- Non-life threatening situations, cont.:
  - Suspicious activities
  - Suspect/counterfeit and defective items or materials
  - Loss of radioactive material or discovery of unaccounted for radioactive material
  - Unexpected short term radiation exposures or contamination
  - **Damage to facilities or equipment that affect safe operations (e.g., utility strikes, significant electrical events, etc.)**
- Disaster information update:
  - SLAC Information Hotline: 1-877-447-SLAC (7522)



# Normal Operations Security Contact

- Examples of issues to contact Security at ext. 2551:
  - Badging issues
  - Traffic control
  - Escorts to and from offices and/or vehicles
  - Vehicle accidents (without injuries) / vehicle damage
  - Building or office unlock requests
  - Theft reports
  - Stores access after hours
- Lost & Found: call ext. 3806



## In short, for PPA

- For an ambulance or a cleanup team:
  - Call 911, then 5555 from a land line, then Frank O’Neill at 5300
- For an injury:
  - Go to supervisor, then Medical (daytime) or call 5555 (off hours)
  - Call Frank O’Neill, 5300



# Incident Notification and Investigation Badge Card for Supervisors

**Incident Investigations**

**DAY 1**

1. Ensure personnel safety.
2. Notify 911/x5555 and Supervisor.
3. Ensure medical treatment.
4. Secure scene.
5. Security notifies Facility Mgr Designee (FMD).
6. FMD notifies Lab Dir., ALD, COO, ES&H Dir., Legal, Facility Mgr (FM), Incident Investigation Program Mgr (IIPM).
7. Lab Director or designee notifies SSO.
8. Supervisor starts SU-17.
9. FMD prepares initial report for SSO.

rev. 7/08  
Facility Manager: (650) 804-5465

**DAY 2**

1. IIPM & FM determine ORPS applicability & classification. Gets details from ALD or designee.
2. Submits PNR.
3. Supervisor briefs ALD.
4. ALD briefs Lab Director & ES&H Dir. Lab Director/designee updates SSO.
5. ORPS Investigation Team formed, if needed.

**DAY 3**

1. Supervisor finalizes & submits SU-17 to IIPM; actions input into CATS.
2. Supervisor briefs ALD.
3. ALD briefs Lab Director & ES&H Dir.
4. Lab Director/designee updates SSO.
5. IIPM Updates Injury Report / ORPS web-pages; entry into DOE ORPS, as needed.

# Incident Investigation – Day 1 Actions

- First and always - ensure you and others are safe, i.e., GET OUT OF AREA
- Make notifications per the Notification Protocol, then call Frank O’Neill at 5300.
- Ensure that medical treatment is provided to those in need
- Secure the scene and help preserve evidence
- Security will notify the on-call Facility Manager Designee (FMD) and others are notified as needed.
- The supervisor starts completing the SU-17, SLAC Occupational Accident Report form.

Incident Investigations	
DAY 1	
1. Ensure personnel safety.	rev. 7/08 Facility Manager: (650) 804-5465
2. Notify 911/x5555 and Supervisor.	
3. Ensure medical treatment.	
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5. Security notifies Facility Mgr Designee (FMD).	
6. FMD notifies Lab Dir., ALD, COO, ES&H Dir., Legal, Facility Mgr (FM), Incident Investigation Program Mgr (IIPM).	
7. Lab Director or designee notifies SSO.	
8. Supervisor starts SU-17.	
9. FMD prepares initial report for SSO.	

# Investigations – Days 2 and 3 Actions

- Day 2
  - The Incident Investigation Program Manager works with the Facility Manager to determine DOE occurrence reporting requirements and submits preliminary notification report if needed.
  - Management is briefed and an ORPS Investigation may be formed
  - Supervisors performing their investigation should request assistance from **Frank O’Neill, x5300**.
- Day 3
  - SU-17 finalized and submitted and management is briefed
  - The Site Office is briefed and SLAC and DOE ORPS are updated as needed.
- Approximately 1 week: Incident Assistance Review Team will contact supervisor

DAY 2
1. IIPM & FM determine ORPS applicability & classification. Gets details from ALD or designee.
2. Submits PNR.
3. Supervisor briefs ALD.
4. ALD briefs Lab Director & ES&H Dir. Lab Director/designee updates SSO.
5. ORPS Investigation Team formed, if needed.
DAY 3
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5. IIPM Updates Injury Report / ORPS web-pages; entry into DOE ORPS, as needed.



# Brainstorming: Injury Prevention in Our Department



# Focus on Safety '08

- “What safe work behaviors have you observed in the last week?”



# Focus on Safety '08

- “What will likely be our work group’s next injury or incident?”



# Focus on Safety '08

- “What are we doing, or can we do to prevent this incident?”



# Focus on Safety '08

- “What unsafe conditions or behaviors can we correct now, in the next week, next month?”