

*Connecting the World*

# Hazard Identification and Risk Control OHSAS 18001

Richard Weigand, CMSP  
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# *Presentation Topics*

- OHSAS 18001 Health and Safety Management System
  - Hazard Identification
    - Workplace Examinations (Compliance)
  - Roles and Responsibilities for Supervisor's
  - Risk Assessment and Determination of Controls
  - COPPER Vision
    - Engaging our people
- Results

# *OHSAS 18001*



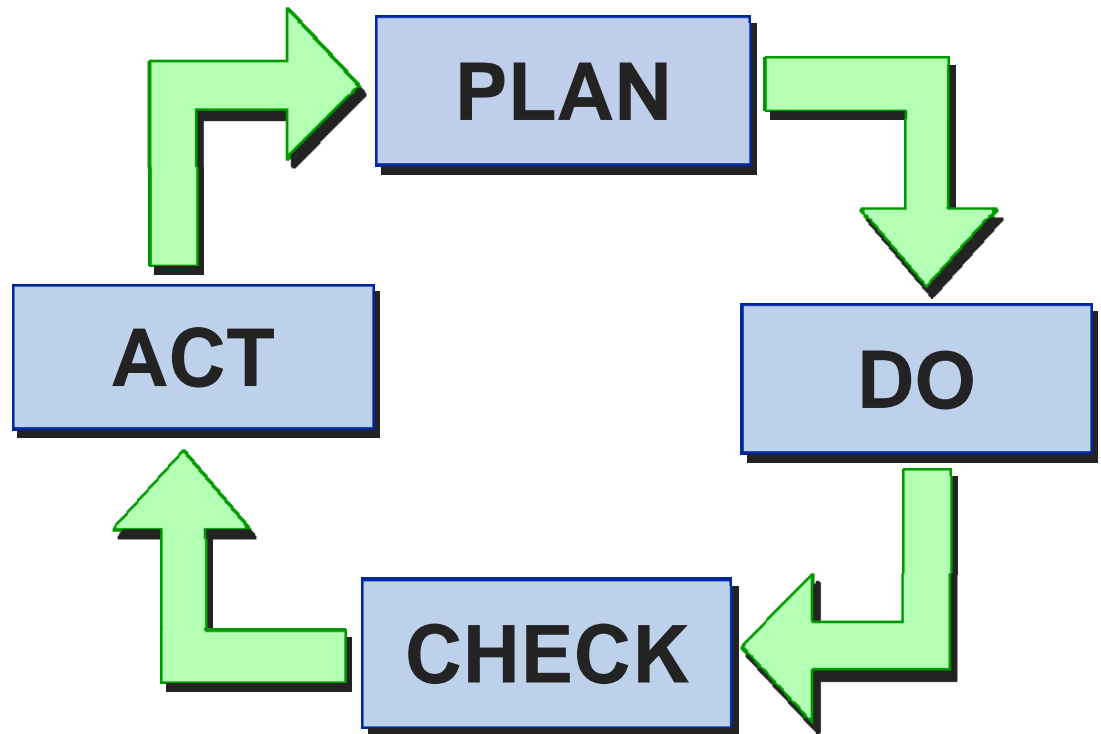
- **Occupational Health and Safety Assessment Series (OHSAS) 18001.**
- **OHSAS is our next step in the Health and Safety evolution process because ...**
  - Outlines the requirements of an Occupational Health and Safety Management System from being good to a World Class organization.
  - Enables an organization to control its OH&S risks by setting up the guidelines to implement, maintain and continually improve an OH&S management system.

# *OHSAS – PDCA Cycle*



- Set goals (Plan)
- Educate and train workforce (Do)
- Check progress (Check)
- Improve (Act)

*The management system identifies significant risks and implements documented procedures and training to manage and minimize those risks.*



# *Workplace Examinations*



- **30 CFR 56.18002 Examination of working places.**
- (a) A **competent person** designated by the operator shall **examine each working place** at least once **each shift** for conditions which may adversely affect safety or health. The operator shall **promptly initiate appropriate action to correct** such conditions.
- (b) A **record** that such examinations were conducted shall be **kept** by the operator for a period of **one year**, and shall be made available for review by the Secretary or his authorized representative.

# *Identifying Electrical Hazards*



Which one starts what?



# *Identifying Electrical Hazards*



- Grounding to grid
- Brush/weed free
- Grounding on gate
- Locked gate



# *Identifying Guarding Hazards*



If you see a guard on the ground you better see the piece of equipment locked out.





# *Expectations for Supervisors*

- Ensure each work area is being examined.
- Ensure competent persons are assigned to examine work areas.
- Ensure employees know what to look for:
  - How would they know?
  - Have Supervisors show them in the field.
    - Talk is cheap – action in the field works.
    - Check the quality of inspections every shift.
- Ensure employees know how to respond when concerns are identified:
  - Fix it immediately or prevent exposure by flagging /barricading area off.
  - Call the Supervisor immediately if it cannot be fixed immediately.
- Ensure your employees turn in their workplace exams and keep the record for one year.
- Ensure that all concerns identified have been resolved (flagged off, work orders, etc).

# Workplace Exams – Trust but Verify!



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## Step Back Examination

Conducted By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Work Location: \_\_\_\_\_

Personnel Fit for Duty Check: \_\_\_\_\_

Work Description: \_\_\_\_\_

### Known Potential Hazards / Check if Applicable

1. Confined Space	Yes / No	15. Lead Hazard	Yes / No
2. Hot Work	Yes / No	16. Asbestos Hazard	Yes / No
3. Fall Protection	Yes / No	17. Hazardous Waste	Yes / No
4. Excavation/Trenching	Yes / No	18. Hoisting & Rigging	Yes / No
5. Utilities	Yes / No	19. Repetitive Motion	Yes / No
6. Scaffolding/Ladders	Yes / No	20. Awkward Positions	Yes / No
7. Heavy Equipment	Yes / No	21. Concrete Work	Yes / No
8. Open Hole	Yes / No	22. Noise Exposure	Yes / No
9. Site/Vehicle Traffic	Yes / No	23. Pinch Points	Yes / No
10. Electrical Hazards	Yes / No	24. Potential Energy	Yes / No
11. Overhead Hazards	Yes / No	25. Chemical Exposure	Yes / No
12. Slips/Spill Hazards	Yes / No	26. Respiratory Hazards	Yes / No
13. Tripping Hazards	Yes / No	27. Hazard to Face and Hands	Yes / No
14. Falling Hazard	Yes / No	28. Posted Area PPE Requirement	Yes / No

Define Other Hazards: \_\_\_\_\_

If you answered (Yes) to any of the above, define the Hazard and explain action taken to protect yourself and fellow workers. \_\_\_\_\_

### Known Protective Measures / Required or Visible / Check if Applicable

1. Warning Signs	Yes / No	7. Confined Space Permit	Yes / No
2. Barricades	Yes / No	8. Burn / Hot Work Permit	Yes / No
3. LOTOTO Box	Yes / No	9. Hazard Tags on Tape	Yes / No
4. Caution Tape	Yes / No	10. PPE Requirement	Yes / No
5. Danger/Do Not Enter Tape	Yes / No	11. Step Up Peer Observation	Yes / No
6. Open Hole Tape	Yes / No	12. Risk Calculator	Yes / No

Other Protective Measures \_\_\_\_\_

Define Risk Level \_\_\_\_\_

Supervisor's Signature \_\_\_\_\_

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## Sample Preparation Daily Safety Check

### Outside

- Pathways are clear – at least 24" wide.
- Lighting is adequate.
- Dust collector motor cover is in good condition.
- Reject bin chutes are not blocked.

### Inside

- Extinguishers are in designated areas; extinguishers are free from obstructions.
- Aisles and exits are free from obstruction – at least 24" clear pathway width.
- Floors are free from slip hazards – no water puddles in pathways; or areas labeled.
- Lighting is adequate.
- Electrical cords are in good condition.
- Compressed air lines are in good condition. Air nozzles are in working order.
- Pulley and motor guards are in good condition.
- Pulverizer capsules, capsule-securing systems, and switches are in working condition.
- Ovens are in good condition.
- Personal protective equipment – dust masks, ear plugs, gloves – are available.
- Exhaust hoods work.
- Hood sills, benches, and shelves are not overloaded; areas are clean – no spills.
- Sinks are accessible and free from obstructions. There is no paper in the sinks.
- Balances are clean and free from spills.
- No chemicals are on break area tables or benches.

At the end of your work time:

- The work area was left free from hazards.

If anything was not satisfactory when you did your survey, what action did you take to remedy it? \_\_\_\_\_

Inspector: \_\_\_\_\_

Date: \_\_\_\_\_

# *Risk Assessment and Control*



- Freeport-McMoRan Bagdad has identified 720+ tasks performed on a routine basis.
- Risk assessments have been conducted using these criteria:
  - What hazards may be created?
  - What is the “potential” consequence of the hazard?
  - What is the likelihood of occurrence without controls? (Pure Risk)
  - Review effectiveness of existing controls. (Hierarchy)
  - What is the likelihood of occurrence with our existing controls?
  - What else can we do? (Continuous Improvement)



# Risk Matrix Used

<b>FCX SAFETY and HEALTH RISK MATRIX</b> (risk = likelihood of occurrence x consequence)				<b>CONSEQUENCE (Outcome of Event)</b>	<b>Safety and Health Risk</b>	<b>Hygiene Effects</b>	<b>Estimated Loss (USD)</b> (1) Equipment Damage (2) Business Interruption (3) Legal Liability
16	12	8	4	<b>Major (4)</b>	Multiple LTA, Permanent Disability or Fatality	Multiple LTA, permanent disability or fatality	> 5 MM
12	9	6	3	<b>Significant (3)</b>	Lost time or restricted activity case	Reversible health effects (recovery more than 7 days)	250,000 - 5 MM
8	6	4	2	<b>Moderate (2)</b>	No days lost injury	Medium health effects (recovery in less than 7 days)	10,000-250,000
4	3	2	1	<b>Minor (1)</b>	No injury or first aid case	Low health effects (recover within hours)	<10,000
<b>Almost Certain (4)</b>	<b>Likely (3)</b>	<b>Possible (2)</b>	<b>Unlikely (1)</b>	<b>LIKELIHOOD (probability or frequency)</b>			
Recurring event (occurs more than twice per year)	Event that may occur frequently (occurs once or twice per year)	Event that may occur (occurs 1-10 years)	Event that is unlikely (occurs 10-100 years)	<b>Description of Frequency</b>			
Occurs continuously during shift or week	Occurs 30+ days or more per year	Occurs once in 20 years	Highly unlikely or expected never to happen	<b>Frequency for Hygiene Risk</b>			

Risk	Risk Management Response
Actionable	Action plan required
Medium	No action plan required but some monitoring may be needed - Apply ALARP Principles
Low	No action plan required





# Risk Assessments

Site: Bagdad Operations

Department: Mine Maintenance - Small Vehicle Shop

Job Tasks: All Jobs

Evaluation Team:

Date:

Supervisor

Revision:

Trainer

Employee

Group	Number Exposed	Task	Hazards	Type of Hazard	Frequency of task	Consequence (Outcome of event) without controls	Hazard Rating	Exposure Judgment	Controls	Likelihood (probability or frequency) of event with controls	Consequence (Outcome of event) with controls	Hazard Rating
Small Vehicle Shop	2	Troubleshoot and Replace Alternator or Battery	Fumes, Dust, or Mist Exposure	Health	(4) Weekly	(3) Significant	9	Unacceptable	Training - SOP - JSA - OTJ	(2) Possible	(2) Moderate	4
			Slip or Trip	Safety					PPE			
			Pinch Points	Safety					Special Tool - Serpentine belt wrench			
			Heat Surface or Object	Safety								
			Electrical	Safety								
			Explosion	Safety								
			Uneven Surface	Safety								
			Weather	Health								
			Fire	Safety								
Small Vehicle Shop	2	Repair Brakes	Fumes, Dust, or Mist Exposure	Health	(5) Daily	(1) Minor	2	Acceptable	Training - SOP - JSA - OTJ	(2) Possible	(1) Minor	2
			Slip or Trip	Safety					Engineering Controls - LOTOTO,			
			Struck By	Safety					Communication - Rework meeting			
			Pinch Points	Safety					Work Order			
			Falling Objects	Safety					Workplace Hazard Examination			
			Inexperienced Personnel	Safety					Special tool / equipment			
			Stored Energy	Safety								
Small Vehicle Shop	2	Vehicle Service A/C Repair	Fumes, Dust, or Mist Exposure	Health	(2) Quarterly	(2) Moderate	4	Uncertain	Training - SOP - JSA - OTJ	(2) Possible	(1) Minor	2
			Slip or Trip	Safety					Engineering Controls - LOTOTO,			
			Struck By	Safety					Communication - Rework meeting			
			Pinch Points	Safety					Work Order			
			Inexperienced Personnel	Safety					Workplace Hazard Examination			
			Fatigue	Safety					Special tool / equipment			
			Heat Surface or Object	Safety								
			Stored Energy	Safety								

# *Lessons Learned*



- It was found that with minimal training employees can quickly identify unacceptable risks.
- Safety focused conversations/exercises in conjunction with training are effective.
- Employee input and participation are the cornerstones in the determination of effective controls.

# *COPPER*



## Freeport-McMoRan Bagdad Health & Safety and Environmental Vision

### “COPPER” acronym

- Simplified Vision
- Easier to remember
- Employee ownership
- Promotes our values
- Employee commitment



# *Health and Safety Vision*

- C** → **Comply** with Health and Safety Requirements
- O** → **On** and Off the Job Safety
- P** → **Prevent** Incidents
- P** → **Personal** Responsibility
- E** → **Eliminate** Hazards
- R** → **Relationship** with Stakeholders





# Freeport-McMoRan Bagdad TRIR

2009 to Current Rolling Average w/Contractors

