The Pennsylvania State University
Miner Training Program

A Dialogue on the Implementation of Safety and Health Program Elements

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Agenda

- Safety Goals
  - Metrics
  - Employee Performance

- Improvement Methods Through Investigative Findings

- Driving Performance
Safety Performance - **Metrics**

What is the Goal?

**Martin Marietta Materials:**

“Decision-based safety starts with a simple idea – all injuries are preventable. Embracing this fundamental belief, Martin Marietta set a goal of zero accidents.”

**Arch Coal:**

“The ultimate goal of Arch and our subsidiary operations is A Perfect Zero. This means zero safety incidents and zero environmental incidents.”

**Heidelberg Cement:**

“We strive for zero risk of accidents, injuries and occupational illnesses by emphasizing prevention.”

Corporate Websites
Employees that:

- Are knowledgeable of all the hazards involved in their job,
- Know how to control these hazards, and
- Use these controls **every** time!
How do we motivate our employees to a higher level Safety Culture?

Motivation

Clear Expectations
Consequences
Rewards
Safety Performance – Incident #1

- Maintenance Journeyman had a task to clean material from below a conveyor.
- He de-energized, locked out, and tagged with his own lock and tag. Only worker involved in the activity.
- He did not “test” the conveyor for movement.
  - Investigation findings:
    - He did not have knowledge that he was to test each time, and
    - Never trained on testing procedures.

Employees that:
- Are knowledgeable of all the hazards involved in their job,
- Know how to control these hazards, and
- Use these controls every time!
Safety Performance – Incident #1

Clear Expectations

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New Miner Training
Refresher Training
Task Training
Tool Box Talks
Supervisory Check
Training over the Regulatory Requirements
Safety Performance – Incident #2

– Two individuals cleaning out the screw below the cement silo.
– One lock was on the electrical disconnect.
– Investigation findings:
  • Individual without the lock knew the proper procedure but did not want to take the time to go around the area and unlock the disconnect when it was necessary to turn the screw on.
    – Did he have Knowledge of the hazard and control? YES
    – Proper Attitude? NO

Will giving him more Knowledge through training change his attitude?
Safety Performance – Incident #2

Consequences and Reward/Recognition

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Discipline
Peer Pressure
Wall of Shame
Safety Assists
Supervisory Check
Observations

Remember the Goal: 0 Injuries!
Safety Performance – Incident #3

• Repairman was cutting open a tube of Epoxy with a utility box knife when the knife slipped and cut the middle finger on his right hand.
  – Investigation findings:
    • Injured Employee states he was cutting away from his body. (But towards his hand!)
    • Was not wearing gloves.
    • Safety Alert on hand injuries from knives had been reviewed with all employees within last 6 months.
Safety Performance – Incident #3

Consequences and Reward/Recognition

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Discipline??
Peer Pressure
Wall of Shame
Safety Assists
Track Injuries

Remember the Goal: 0 Injuries!
One supervisor and a mechanic conducting maintenance on a rock hammer. As hammer unit was being put back together the hammer slipped in the sleeve clipping the end of the supervisors finger.

Investigation Findings:
- Mechanic had conducted this maintenance before.
- Prior to getting his fingers clipped, supervisor had both hands inside the sleeve with hammer suspended above.
Safety Performance – Incident #4

Clear Expectations - Consequences and Reward/Recognition

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Read Manual
Job Safety Analysis
Discipline? Who?
Peer Pressure
Board of Shame
Safety Assists
Track Injuries

Remember the Goal: 0 Injuries!
Safety Performance – Incident #5

• Two employees changing the liner on a crusher. Employee gets his finger caught when other employee’s hands slip off the pry-bar holding liner material.

• Investigation Findings:
  – They had done this job 2 years prior without injury.
  – Had “forgotten” how they had done it safely.
Safety Performance – Incident #5

Clear Expectations - Consequences and Reward/Recognition

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Job Safety Analysis
Discipline? Who?
Peer Pressure
Board of Shame
Safety Assists
Track Injuries

Remember the Goal: 0 Injuries!
Incident Causes Review

Investigations find:

Less than 10% Mechanical Failures!

Typically a Poor Behavior! Or

Poor Safety Performance

Didn’t understand the Hazard,
Didn’t know the control, or
Poor Attitude

Improve Safety Performance –
Improve the Safety Culture
Driving Performance

• How do you *Drive* performance?
  – Production
    • Tons Produced
    • Tons per Man-hour
    • Fuel Used
    • Hours Worked

• Production *measurements* or *metrics* used by managers to drive an operations performance.
Driving Performance

• How do you Drive Safety performance?
  Historically:
  – Total Case Incidents
  – Lost Time Incidents

  Lagging metrics

Actions that have happened to you!
Driving Performance

• How do you Drive **Safety** performance?
  – Number of JSA’s completed or reviewed
  – Number of Observations
  – Number of Safety Assists
  – Number of inspections outside AOR
  – Number of Near Hits Reported
  – Number of Safety Committee Meetings
  – Etc, etc, etc…

**Leading Metrics**

Actions that You make happen!
Driving Safety Performance

The old adage:

You can’t manage what you don’t measure!

*How do you make your measurements improve performance?*

Clear Expectations

Consequences

Rewards
Driving Safety Performance

Example:
Discreet Pressure

Observations

- Smithville
- Doetown
- Austin
- Chernobyl
- Berlin
Figure 3

“Stepping Up to Safety Excellence”

SAFETY EXCELLENCE CONTINUUM

LED

WORLD-CLASS
“Ever-better”
Safety is: A CORE VALUE
How Business Is Done.

CRITICAL THINKING
Shift

MANAGED
Process Design
Systemic
Leader
Manage
Collaborative

EXCELLENCE
Industry Leadership — “Best Practice”
Safety is: A PROCESS
A system we manage.

MISMANAGED
Radical Organizational Change

NORM
Significant Financial Change

UNMANAGED
High Insurance, Excessive Employee Costs, Litigation

SWAMP
Safety Without Any Management Process
Safety is: IGNORED
(That’s why we buy insurance.)

From: STEPPING UP TO OPERATIONAL SAFETY EXCELLENCE.
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