SAND2011-0487C

Behavior Based Safety (BBS)

What is Behavior Based Safety?

Behavior is "the manner of conducting oneself."*

Therefore, behaviors are observable acts.

Behavior Based Safety focuses on behaviors that promote safety.

* Merriam-Webster dictionary

Behavior Based Safety is NOT:

- A fully-developed safety program.
  - It is a process designed to eliminate behaviors that put workers at risk and enhance existing safety protocols.
- A process used to enforce safety rules, nor to correct hazardous conditions.
  - Safety rule violations and hazardous workplace conditions must be corrected outside of the BBS process.
- A process for assigning blame or criticizing workers.

How does BBS differ from traditional safety?

Traditional Safety…

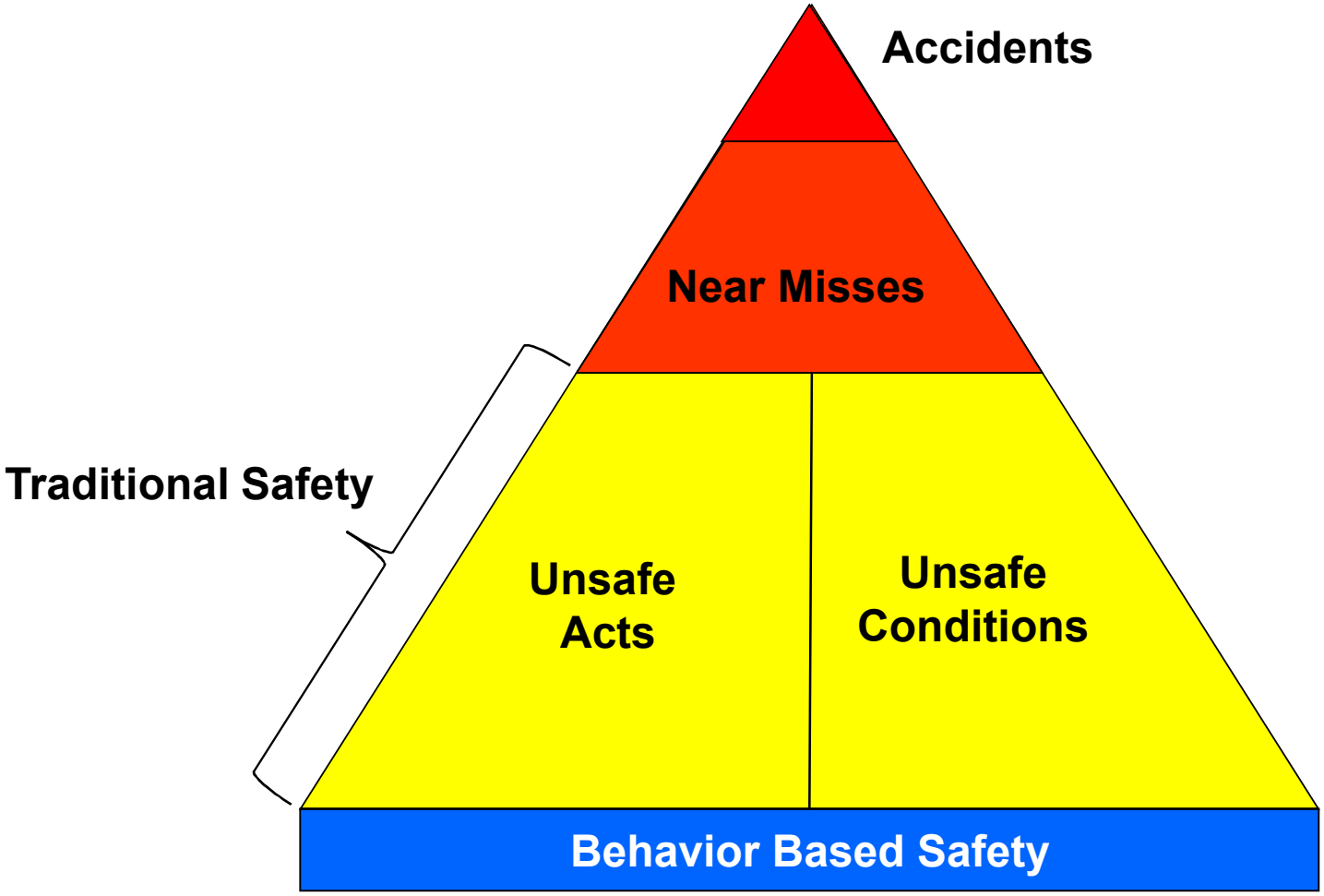
- **Is *reactive* – focuses on correcting problems only after they have occurred.**
- **Searches for "root cause" of accidents**
  - **Using incident/accident data from investigations**
    - e.g. Incident and Severity rate: TRCR/DART
- **Focuses on making the working environment less hazardous.**
- **Sometimes assigns blame to individuals.**
  - **Emphasis on negative reinforcement.**

How does BBS differ from traditional safety?

Behavior Based Safety…

- Is proactive – discourages ‘at-risk’ behaviors.
- Focuses on observing worker behavior.
  - Common behaviors that place employees at risk are noted and adjustments are made.
  - Data come from behavioral observations.
- Has a holistic understanding of worker behavior.
  - Notes the environment in which behavior occurs, the behavior itself, and consequences of this behavior.

Behavior Based Safety underlies and benefits Traditional Safety



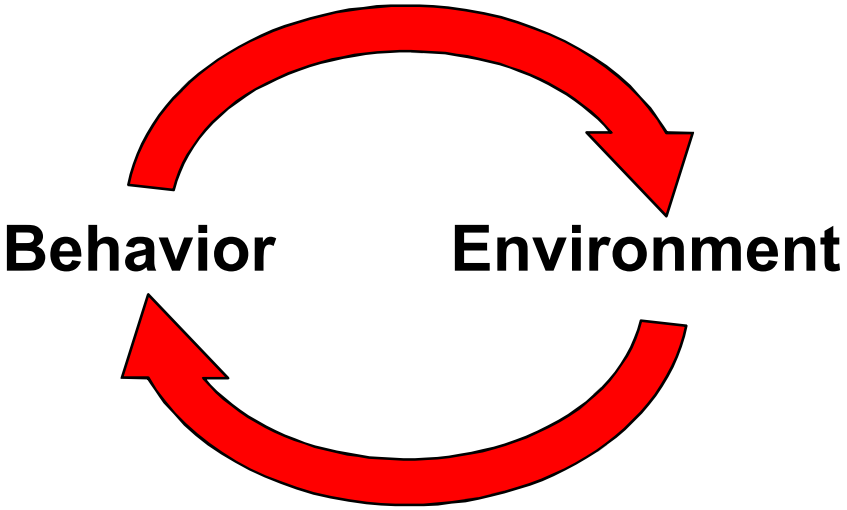
Always Keep in Mind…

BBS is focused on two concepts:

- **BEHAVIOR**
  - **What is behavior?**
  - **What are the factors influencing "at-risk" behavior?**
  - **How can this behavior be discouraged?**
- **RISK**
  - **What is risk?**
  - **Why do people take risks?**
  - **What are the consequences of taking these risks?**

Remember: Behavior is "the manner of conducting oneself"

Behaviors cannot be isolated from the environment in which they occur.



Therefore, if employees are expected to promote safe practices the working environment must encourage this behavior.

Risk = exposure x probability

Exposure – extent a person is involved in an activity.

Direct

Indirect

Probability – the chances of an accident occurring during activity.

1 in 6

1 in 52

How do Consequences Affect At-Risk Behavior?

Behavior → Accident Probability → No Accident

Accident

Severity Probability

Risk = exposure x probability

Consequence

Positive Consequences Influence At-Risk Behavior

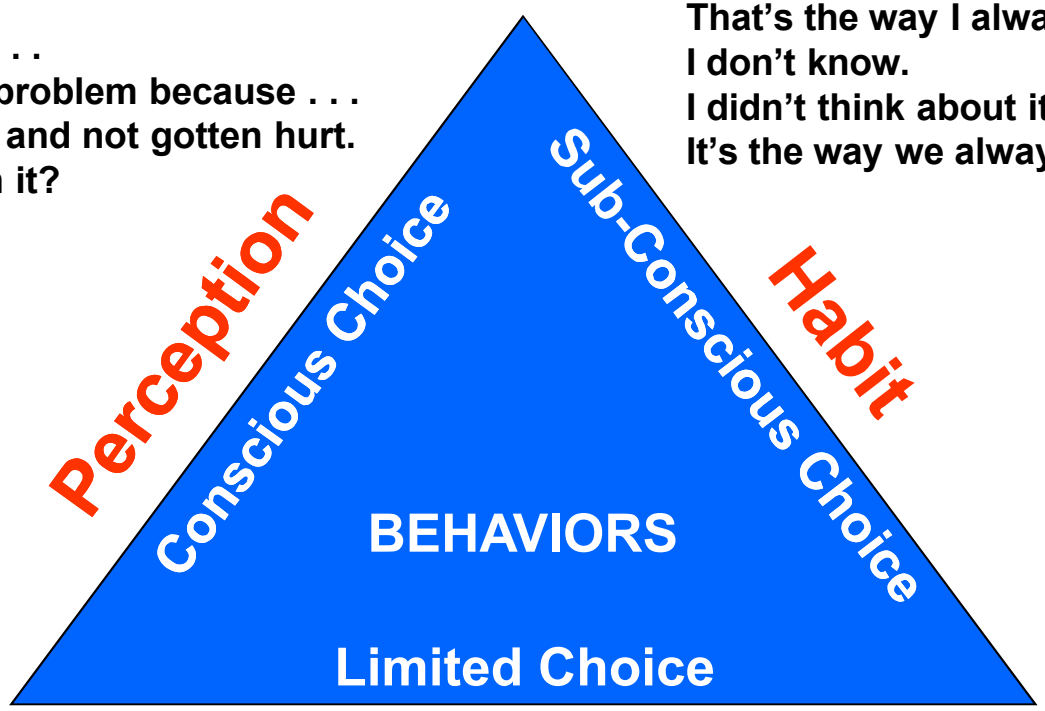
- Convenience
- Time savings
- Increased productivity
- Getting away with it
- Feeling bullet-proof

How does cheaper/better/faster influence taking risks?

Worker's reasons for taking a risk:

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.



Obstacle

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).

Implementing Behavior Based Safety

Prior to Implementation

Important to develop a BBS Committee and working structure that persists after implementation:

- **Designs the BBS process.**
- **Develops the implementation strategy.**
- **Implements the BBS process.**
- **Steers the BBS process.**
  - **Assures observation and data quality through a Quality Assurance Plan.**
  - **Champions worker involvement and completion of observations.**
  - **Analyzes observation data to identify the causes of at-risk behaviors and develops recommendations.**
  - **Facilitates removal of barriers to workers being able to easily perform work safely.**
  - **Reports the results of data analysis.**

Responsibilities of Managers & Supervisors

- Understand the process (receive training)
- Establish BBS as a part of the job
- Help identify and correct systems issues
- Remove barriers
- Support:
  - Time for:
    - Training
    - BBS Committee duties and meetings
    - Observations
- Encourage and provide positive reinforcement: workers, observers, BBS Committee members

4 Steps of Implementation

The BBS implementation process consists of four steps we will discuss in further detail:

1. **Establish Feasible Goals**
2. **Develop Observation Checklists**
3. **Take observations**
4. **Provide Feedback**

Step 1: Establish Feasible Goals

The overall purpose of BBS is to establish a culture of safety in the working environment. However, attainable goals need to exist in working toward this. **Make goals SMART:**

Specific – **M**otivational – **A**ttainable – **R**elevant – **T**rackable

e.g. A goal of "zero-injuries" is NOT SMART, but a goal of 80% participation in appropriate safety training is SMART.

Goals should focus on outcomes, NOT behaviors.

Step 1: Establish Feasible Goals

Employee participation in the goal-setting process is important, and must continue throughout the BBS process to ensure success. There are two broad reasons for this:

1. **"Employee buy-in" – verbal and nonverbal support for change from those directly affected.**

2. **Interpersonal trust – trust among employees, and trust between employees and management.**

Step 2: Develop Observation Checklists

In looking for behaviors that encourage safe practice, there are several options:

- Review past accident/incident reports to identify behavior that could have prevented them.
  - Focus on those that could have prevented the largest number of accidents.
- Consult with employees and managers.
  - It is important for employees to take responsibility for their actions.
  - Beneficial for developing trust.
- Observe workers for a period of time.

Step 2: Develop Observation Checklists

Remember in developing the list that positive reinforcement is better for employee participation (i.e. specify criteria for good performance).

BBS SHARP
BE SHARP
STAY SHARP

Sandia Hazard & Accident Reduction Program
Division 2000 Behavior Based Safety—Electrical Lab Workers

Observer: _____ Date: _____ Time: _____

No. Observed: _____ Bldg: _____ Org: _____

Behavior	Safe	Concern	What	Why
Eyes on Path/Task (26%)				
Line of Fire (19%)				
Repetition (16%)				
Alignment (9%)				

Observer Comments: _____

_____

_____

_____

Employee Comments: _____

_____

_____

_____

CSP
CHEMICAL SECURITY
ENGAGEMENT PROGRAM

emical
SECURITY TRAINING

Step 3: Observing

There are several decisions to be made when selecting an observation method or methods:

- **Who will observe?**
  - **Self-observation**
  - **Peer-to-peer**
  - **Top-down**
  - **Working groups**
- **Frequency of observations?**
  - **Daily, bi-weekly, monthly**
- **How will feedback be given?**
  - **Immediately**
  - **Within a week**

Observers Have…

Three main responsibilities:

- **Gather data**
  - **Observation data (Safe/Concern)**
  - **Discussion data (What/Why)**
- **Give feedback**
  - **Positive reinforcement for safe behaviors**
  - **Provide coaching on concerns**
- **To remain objective/unbiased**

Step 3: Observing

As an example, Sandia's method of observation is:

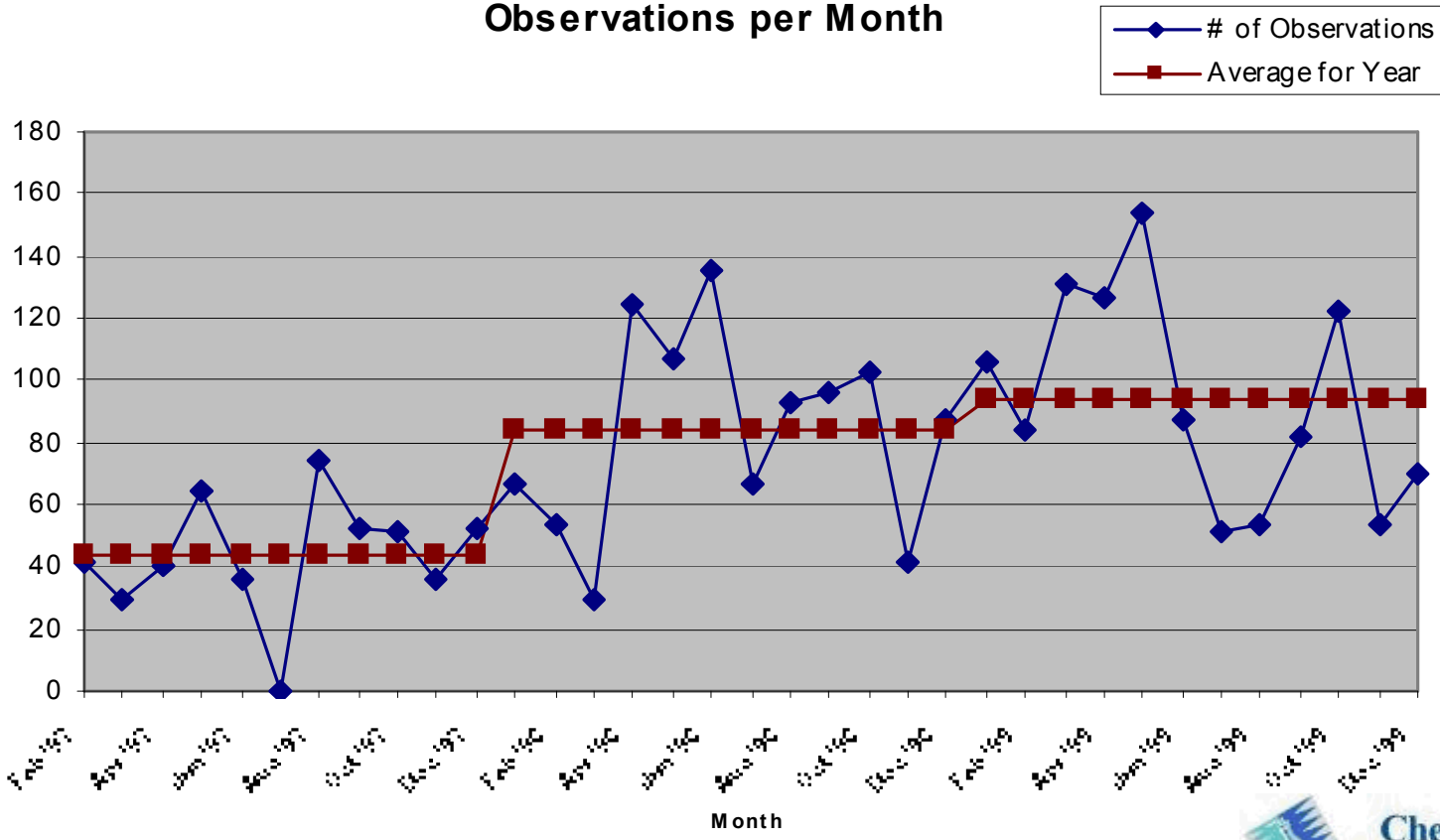
- **Peer-to-peer**
- **Anonymous (No Names/No Blame)**
- **Announced**
- **5 minutes or less**
- **Provide feedback:**
  - **Positive reinforcement for safe behaviors**
  - **Coaching for behaviors of concern**
- **Identify obstacles**
- **Foster safety communication**

An Observer's Job is NOT:

- Ambush or spy on workers
- "Catch" people doing activities unsafely
- Criticize worker performance
- "Safety cop" (risks vs. rules; right vs. wrong; safe vs. unsafe)
- Watch a whole task or job
- Force people to change
- Turn people in for discipline
- Identify conditions that don't directly impact critical behaviors

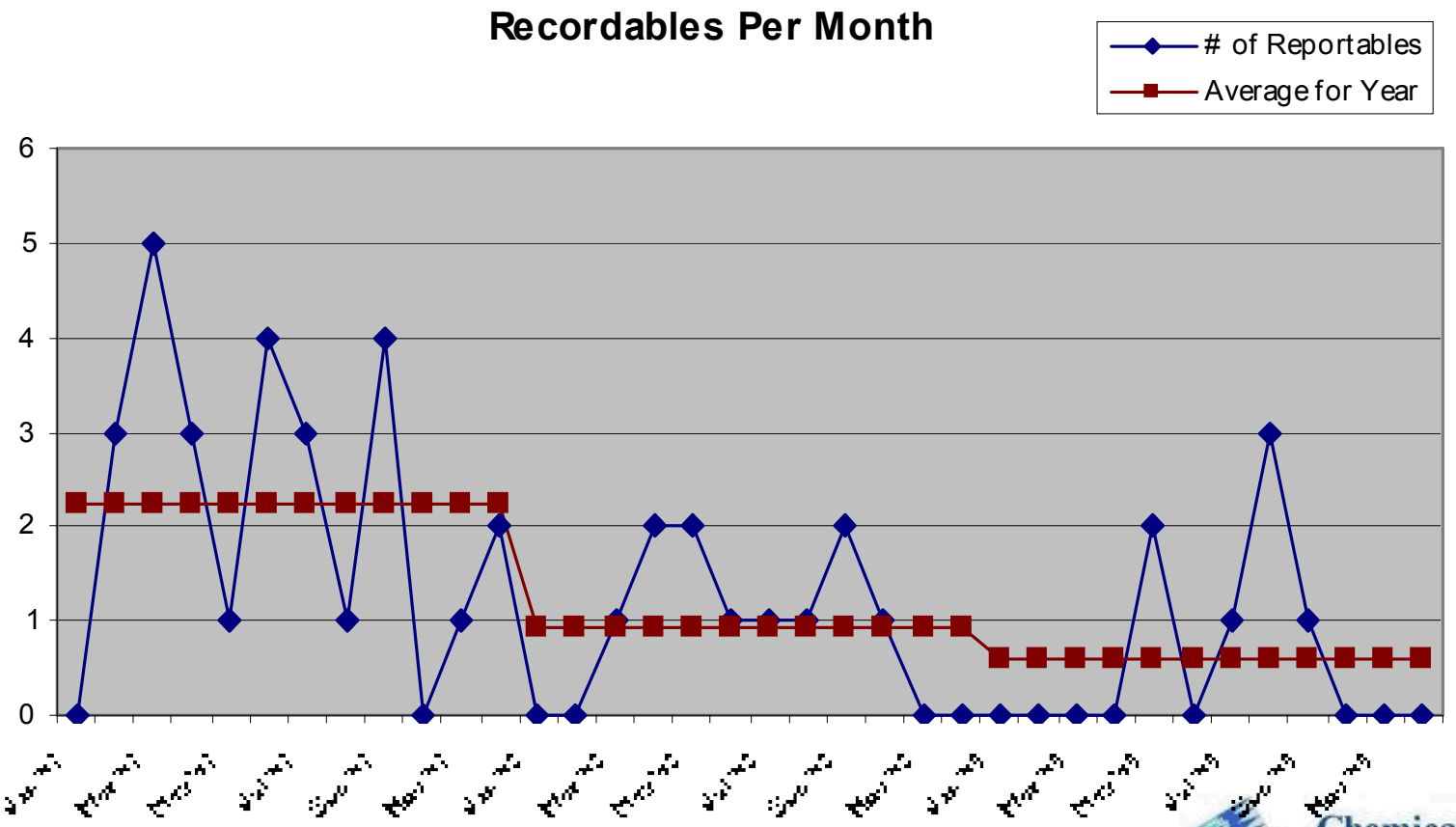
What happens with more observations?

Feedback Changes Behaviors



Fewer injuries!

Changed Behaviors Reduce Accidents



CSP CHEMICAL SECURITY ENGAGEMENT PROGRAM

Chemical SAFETY AND SECURITY TRAINING

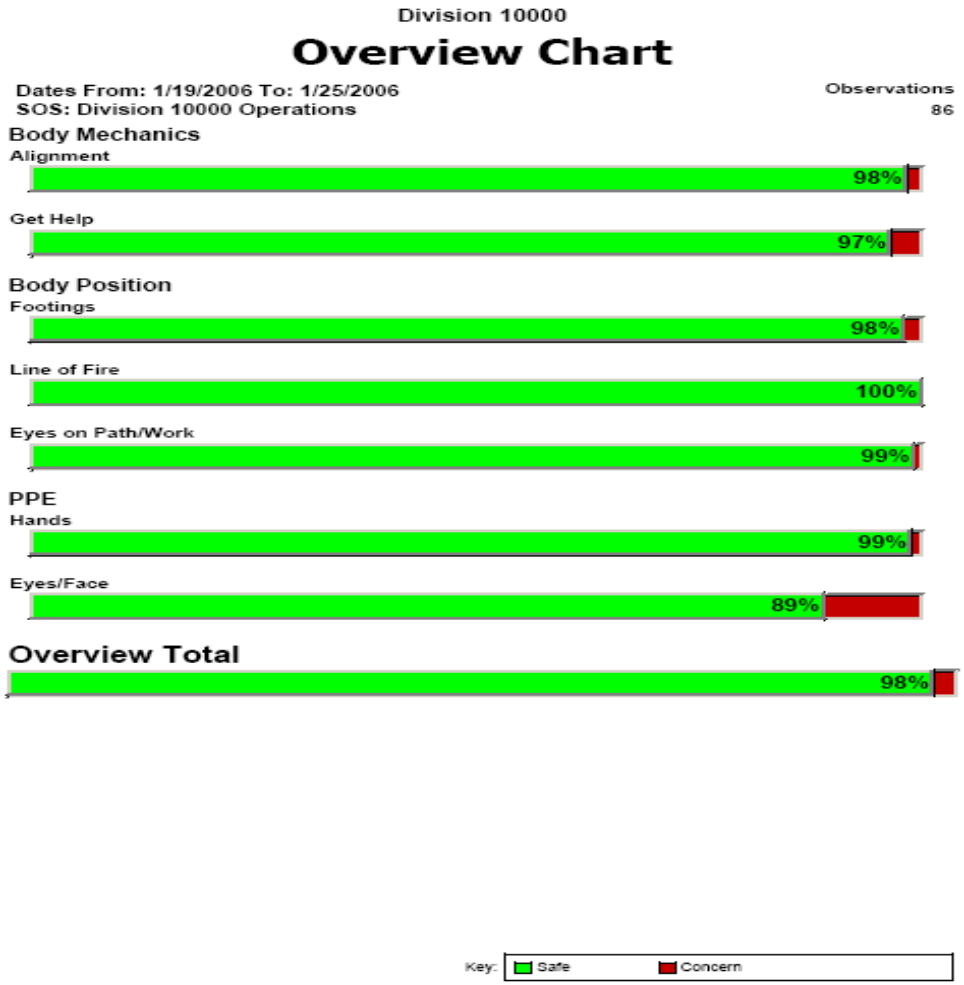
Step 4: Providing Feedback

Providing feedback to workers in a timely manner is important. Using multiple methods has proven beneficial:

- **Verbal - Immediate feedback during observations.**
- **Through reports written after observation data collected.**
- **Posting graphs/charts where all can see.**
- **Having celebrations for milestones or providing other incentives.**

NOTE: It is important that workers are allowed time to adjust their performance before being observed again.

An example of a “Green/Red” Chart from the Observations of a Division at Sandia



Why Implement Behavior Based Safety?

The BBS Process Closes the Gap to "Nobody Gets Hurt"

- Focuses on the critical few precautions that would prevent the most injuries
- Prioritizes actions to remove barriers
- Generates actionable data
- Provides positive reinforcement of safe behaviors
- Engages workers and management:

Worker driven/Management supported

BBS is proven to reduce injuries

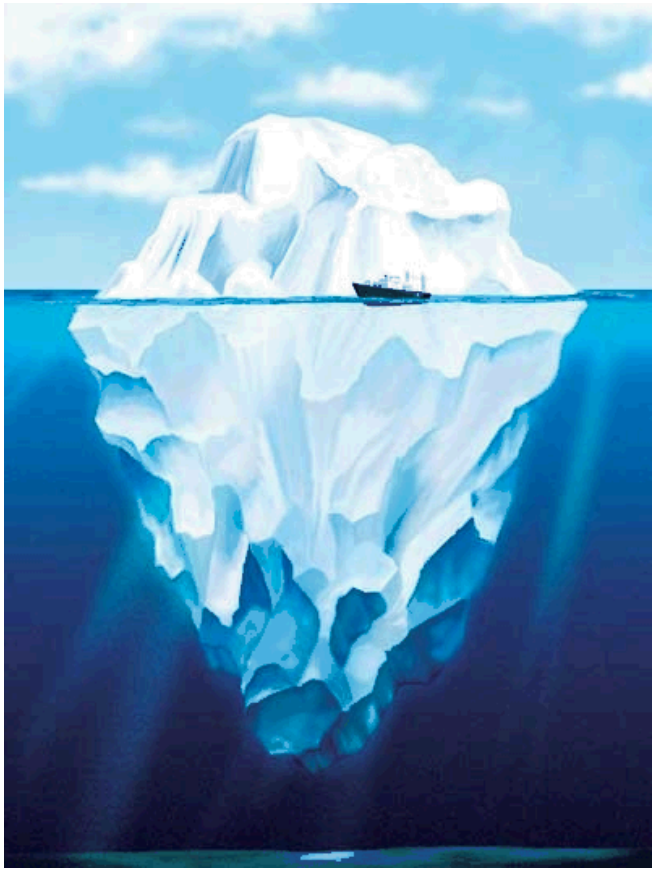
- At 850+ companies injuries were reduced by an average of:
  - 37% after 1 year
  - 66% after 2 years
  - 87% after 3 years

- Multisite Success – See case study of BP's Fabrics and Fibers Business Unit (FFBU) included in your extra materials.

The Benefits Outweigh the Costs

- **What is the Return on Investment for BBS?**
  - **Saves time, money, energy, and can improve morale among employees and between employees and managers.**
  - **Costs of accidents/incidents are both direct and indirect:**
    - **<u>Direct costs</u>: investigation, production downtime, medical expenses, damage to equipment or product, repairs, legal costs, fines, etc.**
    - **<u>Indirect costs</u>: employer/public liability, business interruption, training replacements, loss of goodwill/employee morale, negative public image.**

Why Implement Behavior Based Safety?



Remember:

The Iceberg Theory

For every accident, there are many "near misses" that go unnoticed.

Sources

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