

# Cultivating Employee Engagement in the BBS Process at SRNL; the Role of the LSIT

---

**Dr. Maximilian (Max) B. Gorenssek**  
**Senior Fellow Engineer**  
**September 15, 2010**



**DOE 2010 ISM Champions Workshop**

---

Augusta Marriott Hotel and Suites, Augusta, GA, September 13-16, 2010



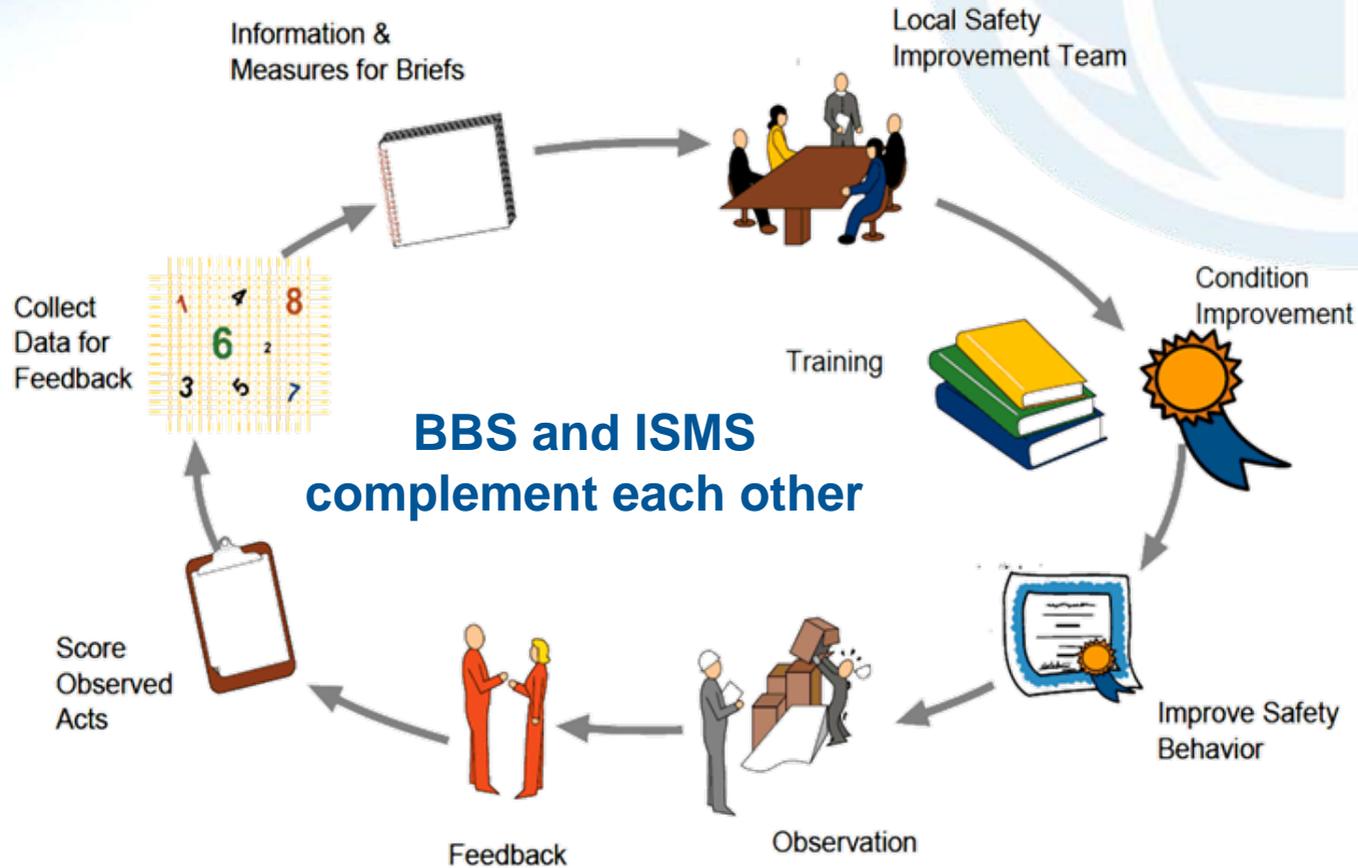
# Behavior Based Safety (BBS) at SRS

---

**The BBS process is Savannah River Site (SRS) policy intended to reduce workplace incidents**

- **Measures observed behaviors against defined standards**
- **Observation and feedback are the essence of BBS**
  - Trained volunteer observers
  - Provide positive reinforcement of safe behaviors
  - Seek commitment to improve at-risk behaviors
- **Observation data entered into site-level database**
- **Behavioral trends reviewed, analyzed, and interpreted by 34 different Local Safety Improvement Teams (LSITs)**
  - Promote the BBS process at the local level
  - Activities coordinated site-wide through the BBS Steering Committee and LSIT Forum
  - The SRNL LSIT is the largest, covering ~10% of the SRS workforce

# The LSIT Is a Key Component of the SRS Safety Culture



The Local Safety Improvement Team (LSIT) reviews, analyzes, and interprets behavioral trends at the local level for the purpose of improving safety.

# What is SRNL?



- DOE's applied research and development National Laboratory at SRS
- Multi-program laboratory with diverse funding sources
- Environmental Management's National Laboratory
- Nation's newest National Laboratory ... with over 50 years of history

# SRNL Creates Solutions to Important Global Issues

## National and Homeland Security



## Environmental Management



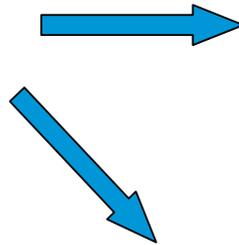
## Energy Security

# SRNL Facilities

Main Campus



Aiken County's  
Savannah River  
Research Campus



# The SRNL LSIT

---

- **Serves a diverse population**
  - 928 total staff
  - 735 R&D staff (science and engineering)
    - 26% PhD
    - 18% MS/MA
    - 25% BS/BA
    - 31% support personnel
- **Despite diversity, SRNL has a strong sense of identity**
  - More than half of R&D funding from off-site customers
  - Community within SRS
  - Provides sound basis for lab-wide LSIT
    - Representation from all directorates and occupations
    - Engaged volunteers committed to BBS process

# Cultivating Employee Engagement in BBS at SRNL

---

- **Tailored checklists**
  - Customized checklists for SRNL-specific activities
  - Off-the-job checklists for home and recreation
- **Participation incentives**
  - 100% Participation Challenge
  - The BBS Store
  - Preferred parking spots
  - Personal recognition
- **Communications**
  - Monthly slides
  - Monthly posters
  - Newsletter articles

# Radiological Work Checklist (Side 1)

RADIOLOGICAL FUNDAMENTALS			
BEHAVIOR	YES	NO	N/A
Task is planned prior to implementation (7.3)			
RWP is correct for the task(s) (6.3)			
Work area and tools are pre-staged before work starts (6.2)			
Work scope is understood (7.3)			
Donning and doffing requirements are understood (6.1 & 6.4)			
RADIOLOGICAL CONTAINMENT			
Lab Module ARW checkouts were conducted before work starts (6.6)			
Activity levels of radioactive materials are understood (6.3)			
Radioactive materials are out of the 6" buffer zone and away from hood lip (7.3)			
Re-use of the outer pair of gloves is minimized (6.2)			
PPE, skin and clothing are not touched by inner gloves (6.1)			
Work zone is controlled (6.2)			
Inner gloves are frequently monitored (6.6)			

(\* ) Numbers correspond to BBS database



### Guide for Performing a BBS Observation

- Introduce yourself
  - Ask permission to observe
  - Ask open ended questions
  - Let the observee be the expert
  - Minimize interruption
  - Give positive reinforcement
  - Identify any opportunities for improvement
  - Enter observation into database or place in an Observation Station
- Except for a self observation, it's not an observation without a conversation!

### BEHAVIOR BASED SAFETY OBSERVATION



### RADIOLOGICAL WORK



# Radiological Work Checklist (Side 2)

Any noteworthy safe practices observed?

What can be done to improve performer's safety?

Any **barriers** to safety when performing activity/task?

Address "WHY" the **at-risk** behavior occurred by using an HPI tool. (if applicable)

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

Name (optional):  
\_\_\_\_\_

Number of employees observed:  
\_\_\_\_\_

Activity or Task Observed: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

### Human Performance Improvement (HPI)

#### Error Precursors:

An unfavorable condition or characteristic of the task or individual that increases the probability for error during a specific action (examples include time pressure, stress, assumptions, new technique, departures from routine)

#### Latent Organizational Weaknesses:

Undetected deficiencies in the leadership control processes (for example, strategy, policies, work control, procedures, training, and resource allocation) or values creating workplace conditions that can provoke error or degrade the integrity of defenses

#### Flawed Defenses:

Defects that, under the right circumstances, may inhibit the ability of defensive measures to protect people, the environment, or facilities against hazards or fail to prevent the occurrence of errors

# Boating/Hunting Safety Checklist



## Boating/Hunting Safety Checklist



Name: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

BEHAVIOR LIST	Safe	At Risk	N/A	BEHAVIOR LIST	Safe	At Risk	N/A
<b>Boating (Pre-Check) (3.0)</b>				<b>On The Water (3.0)</b>			
-Life vests for all passengers				-Obey No-Wake Zones			
-Throwable portable flotation device				-Vessel to the others right has right of way			
-Run motor before leaving for lake/river/ocean (Use proper water source for engine)				-Maintain distance and watch for course changes from other boats when towing skier or tubes.			
-Spare prop; spare pump impeller							
-Flare(s)				<b>Boating (Preparation) (7.0)</b>			
-Trailer tires (inflation/ wear)				-Trailer orange			
-Trailer latches/ safety chain secure				-Flashlight			
-Trailer lights operable				-Rifle properly signed in			
-Trailer brakes if > 3000 pounds				-License and dec tags			
-Spark arrester on inboard motors				-Notify someone of hunt time/location			
-Fire extinguisher				-If hunting large game have means of lifting animal			
-Boat winch secure and locked				-Mark trail to stand with reflective markers			
- Plug in place				-Keep rifle/shotgun unloaded unless stalking			
-Anchor				-Dress appropriately			
-Notify someone of intended fishing location and time due back				-Know the location of other hunters (use status board)			
-Checked weather report				-Confirm correct status for rifle/shotgun			
-Ensure you have enough fuel							
				<b>In the Field (7.0)</b>			
<b>Trailering (3.0)</b>				<b>Know your target and what's beyond it</b>			
-Allow extra space to stop				-Keep the muzzle pointed in a safe direction			
-Monitor Speed -Monitor engine coolant temp.				-Don't climb over 15 to 20 feet			
				-Always use a safety harness when using an elevated stand			
				-Be prepared for recoil			
<b>On Ramp (3.0)</b>				-Don't rush after shooting deer-Unload gun and climb down slowly-reload gun before approaching animal			
-Fit strap/slippy ramp, leave transmission in drive while backing with boat weight (Automatic Trans)				- Assume animal is active until proven otherwise			
-Remove any braces/transmission ties				-Drag with grain of hide			
-Check plug							
-Back in slowly				<b>Misc. for Both Activities (7.0)</b>			
-Back until boat is neutral buoyant (avoid submerging rear tires of vehicle)				-Know fitness level required			
-Have a rope tied to boat while unloading				-Fully charged cell phone			
-Ensure vehicle is secure before exiting				-Access to a first aid kit			
				-Hydrate - No alcoholic beverages			

Non-BBS Observers: Check the box if you would like this entered in the BBS Database.

**Task Description:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Hazard Analysis:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Safe Behaviors:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Deficiencies you need to correct:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Submit completed form to an LSIT member, enter it on-line, or deposit in a BBS Observation Station drop box. A list of LSIT members is on the SRNL homepage under - Safety - SRNL BBS Information Site - LSIT

# 100% Challenge Participation Incentive (2007)



## The 100% Challenge

- **The Goal: To increase the number of personnel involved with BBS and further decrease our error rate**
- **Within your organization or team, everyone is involved with BBS, either being observed or observing on the job**
- **Starts at the beginning of each month for the months of June, July and August**
- **Gift certificates for the winning organization with the most months of 100% participation**
- **A gift coffee mug for all participants**



# BBS Store Participation Incentive (2007)

## 2007 SRNL BBS Store

- SRNL's BBS Store – APRIL 1<sup>st</sup> – September 30<sup>th</sup>
- Orders Filled in June, August and October
- BBS Store information is on SRNL's BBS Information web site
  - <http://shrine.srs.gov/html/srnl/bbs/#resources>
  - Email: SRNL BBS Store
- Inactive/New Observers and Top 2 receive Bonus BBS Bucks
- Many THANKS to all those who are being observed!

**BBS Observation = BBS Buck\***



\*redeemable for safety merchandise



# Results of 2007 Participation Incentives

- **Combined efforts generated over 3,200 BBS observations**
  - More than 4,900 individuals were observed
  - 543 individuals submitted observations
- **Accrued total cost of the BBS store was ~\$4,100**
  - \$3,200 accrued value of observations
  - \$905 in “Bonus Bucks” for first time, reactivated, and monthly “Top Two” observers
  - Only \$2,009 “BBS Buck” equivalents in merchandise redeemed
    - 483 items to 220 individuals
    - More than half of the BBS Bucks issued went unredeemed
- **Exceeded participation goal by considerable margin**
  - Targeted increase in monthly average active SRNL BBS Observer participation from 35.5% in 2006 to 50% in 2007
  - Actual monthly average for 2007 was 56% (on-the-job only)
- **Deemed successful, but costly in terms of personnel commitments**

# Other Participation Incentives

- **Preferred parking spot**
  - Low-cost, popular incentive
  - Monthly drawing from list of all BBS observers who made an observation
    - 5 spots allocated among 3 major SRNL parking lots
    - Names randomly drawn
  - Spots originally awarded for the 5 “best” BBS observations
    - Required more effort for data analysis team
    - Not as objective as truly random drawing
- **Personal recognition**
  - Newly trained observers given card and certificate upon first observation
    - Presented at monthly departmental safety meeting
    - Provides positive reinforcement
  - Special recognition for “Top Ten” observers at the end of the year
    - Publicized in SRNL News
    - Included in monthly safety meeting presentations December or January



# SRNL News Features and Articles



## SRNL News

We Put Science To Work™

May 20, 2010



News for and about the Savannah River National Laboratory

### Clearing the Way: From the LSIT

See what your observation can do? A BBS observation resulted in the safety improvement shown below. This is the "Overflow Parking Lot" exit before and after it was cleared for greater visibility to traffic. This observation led to a safer environment for us all. Have you done a BBS observation lately?

-Your SRNL LSIT

#### BEFORE



#### AFTER



\*\*\*\*\*

**Note:** A new BBS observation station has been established in the lunch room in 735-A.

### Protect your Information

Whether you are responsible for personal or work-related information, there are a few guidelines that you can follow to ensure protection from those who do not have the "need to know."

- **Take stock of the information:** Know what information you have and what level of protection it requires.
- **Scale down:** Keep only the information you need.
- **Secure it:**

Lock it in a desk or file cabinet.

Lock it in a repository.

Ensure that your computer cannot be viewed when working with classified or personal information.

Use a screen saver password.

Lock your office door when you leave your work area.

- **Pitch it:**

Properly dispose of information you do not need.

Send unclassified computer media to SRS Media Disposal in 722-5A.

Shred uncontrolled classified information.

- **If there is a breach concerning your information:**

Plan ahead for your security/emergency response.

Know who to contact when the incident occurs.



SRNL News, May 20, 2010



## SRNL News

We Put Science To Work™

June 24, 2010



News for and about the Savannah River National Laboratory

### Recommended Items to Include in a Basic Emergency Supply Kit

Hurricane season is here. Are you ready? It's not just the coasts that can suffer. Below are the minimum things the National Safety Council suggests should be in your emergency kit.

- Water, one gallon of water per person per day for at least three days, for drinking and sanitation
- Food, at least a three-day supply of non-perishable food
- Battery-powered or hand crank radio and a NOAA Weather Radio with tone alert and extra batteries for both
- Flashlight and extra batteries
- First aid kit
- Whistle to signal for help
- Dust mask to help filter contaminated air, and plastic sheeting and duct tape to shelter-in-place
- Moist towelettes, garbage bags and plastic ties for personal sanitation
- Wrench or pliers to turn off utilities
- Can opener for food (if kit contains canned food)
- Local maps
- Cell phone with chargers, inverter or solar charger



### LSIT Needs Poster Design



The SRNL LSIT invites submissions for a hunting and gun safety poster design. The submitted posters will be reviewed by the LSIT with one design chosen for use during September. The winning designer will receive a weather radio. The deadline for submissions is July 29.

The poster dimensions should be 24 X 36 or less.

### Eliminate the Distraction

Here are some tips to eliminate cell phone distraction:

- Change your voice mail to indicate you do not answer calls while driving and will return the call when you can do so safely.
- Turn your phone off before starting your car.
- Put your cell phone in the trunk or glove compartment.
- Ask family members to tell you to pull over should you reach for your phone while driving.
- Don't call others when you think they may be driving.

No phone call or text message is worth someone's life. When you're on the road, stay off the phone.

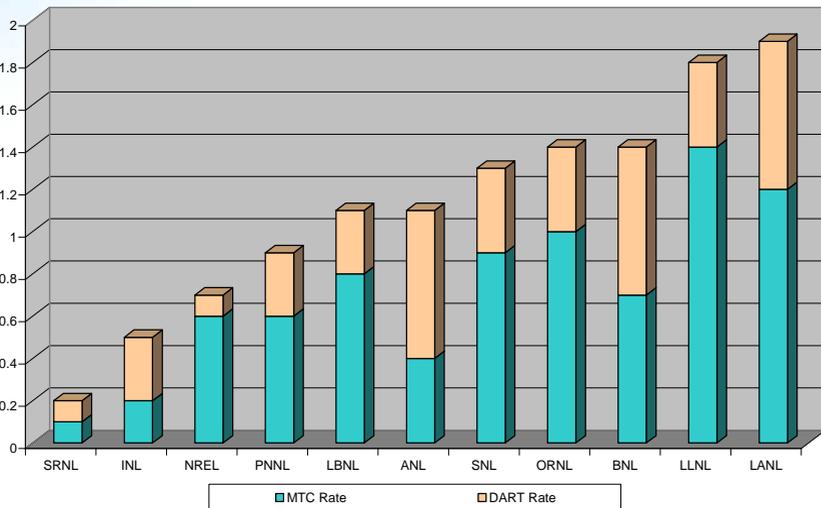


SRNL News, June 24, 2010

# The Results Speak for Themselves

**National Laboratory Injury & Illness Data  
Per 200,000 Hours Worked, CY 09**

Note: Data obtained from DOE Computerized Accident/Incident Reporting System (CAIRS)

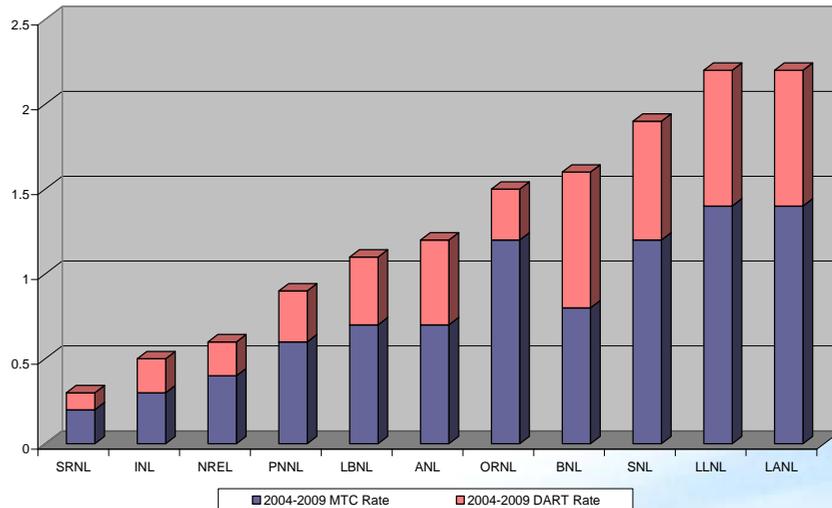


**Note:**

Data displayed is for multi-program National Laboratories only  
Data not included for DOE single-program laboratories (ALAB, Fermi, JLAB, PPPL, NETL & SLAC)

**National Laboratory Injury & Illness Data  
Per 200,000 Hours Worked, CYs 04 Through 09**

Note: Data obtained from DOE Computerized Accident/Incident Reporting System (CAIRS)



# Acknowledgments

---

**Co-authors/fellow LSIT officers:** Heather A. Brant, Timothy M. Jones, Shirley J. King, John C. Miller, Kimberly A. Roberts, Cameron G. Sherer, Robert A. Smith, Bernadette S. Williams

**Current and past LSIT members:** Babb Attaway, Craig Baptiste, Ray Battles, Jim Becnel, Jim Bollinger, Angela Bowser, Beverly Burch, Joe Burckhalter, Patti Burke, Damon Click, Montenius Collins, John Connelly, Kathy Counts, Gary Dobos, Jon Duvall, Carnel Eubanks, Mignon Ford, Charlie Fulghum, Sharon Gleaton, John Gray, Rick Haggard, Holly Hall, Chuck Harvel, Tony Hicks, Carl Jacobs, Eric Kabela, Mark Kidd, Coy Kinard, Denny Kotz, Bryan Ledford, Dave Leduc, Doug Lowry, John Mickalonis, Don Miller, Wanda Morgan, Robert Morris, Joe Murphy, Jay Noonkester, Fred Ogden, Toni Oliphant, Calvin Padgett, Myra Pettis, Anita Poore, Bill Price, Claresa Price, Bill Rogier, Joe Santos, Harold Saunders, Dianne Scott, Tommy Seay, Susan Shouse, Michael Staley, Ed Stevens, Laura Tovo, Marvin Trimm, Rodney Walker, Greg Walkup, Dee Wheeler, Morgana Whiteside, Adrienne Williams, and David Wilkerson