



Sandia National Laboratories

Operated for the U.S. Department of Energy's
National Nuclear Security Administration
by **Sandia Corporation**

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Michael W. Hazen
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AUG 28 2014

Mr. Geoffrey Beausoleil
Manager
U. S. Department of Energy
National Nuclear Security Administration
Sandia Field Office, MS-0184
P. O. Box 5400
Albuquerque, NM 87185-0184

Dear Mr. Beausoleil:

Subject: ***Safety Culture Sustainment Plan***

Reference: *Letter, G. Beausoleil to M. Hazen dtd July 7, 2014, subject: Safety Culture Sustainment Plan*

Thank you for inviting me to participate at the Joint Field Office/M&O Partner Safety Culture Improvement meeting on August 5-6, 2014. I've enclosed our briefing for future reference.

Subsequent to the meeting, the high level attributes identified were distributed to all sites. The collective attributes included communication, identification, prioritization and resolution of issues, interaction (employee engagement, middle management), physical environment, measurement and feedback, and leadership and aligned vision. The meeting resulted in an action to construct a single plan describing Field Office and M&O Partner sustainment actions, aligned with the following overarching themes: Leadership, Employee Engagement and Organizational Learning.

In response to the request from the Acting Associate Administrator for Infrastructure and Operations for site-specific safety culture sustainment plans, Sandia National Laboratories (SNL) and the Sandia Field Office (SFO) have identified on-going and planned actions in the enclosure. While many of these actions have yet to mature, I believe these deliberate activities will result in improving and sustaining the safety culture at SNL.

Should you have any questions or comments concerning the document or require additional information, please contact me at (505) 284-3191 or Sidney Gutierrez, Director, at (505) 284-0431 / smgutie@sandia.gov.

Sincerely,

Enclosures:

- 1) SFO/SNL Safety Culture Sustainment Plan
- 2) SFO/SNL Summary for Safety Culture Sustainment Briefing



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Safety Culture Sustainment

Sandia Field Office
Sandia National Laboratories
August 2014

The Sandia Field Office (SFO) and Sandia National Laboratories have developed a joint plan for sustainment of a robust safety culture using a three-part approach: leadership, employee engagement and organizational learning.

Leadership

Leadership & Aligned Vision Communication

Leadership Engagement. Leadership at SFO and Sandia are partnering in their commitment to safety improvement by:

- Engaging employees by encouraging critical thinking.
- Treating safety as a system, understanding our Safety Culture and recognizing our subcultures.
- Engaging leadership to develop, execute, demonstrate and communicate strategy.
- Recognizing and changing factors in our environment that can influence our culture.
- Developing leadership/vision/communication documents to demonstrate alignment and establish expectations. Encouraging and improving partnerships, relationships helps SFO and Sandia to attend to effective communication and transparency.
- Measuring performance through the strategic Performance Evaluation Plan (PEP).
- Conducting routine 'town-hall' type meetings at various organizational levels.

Specific examples of leadership commitment and engagement include:

- SFO and Sandia participated in the Safety Conscious Work Environment Training.
- SFO and Sandia have supported the transformation of its safety approach as a lab-wide, leadership-led, workforce-owned value.
- Sandia's President & Laboratories Director held 21 meetings to discuss his expectations for a safe work environment with every manager.
- Sandia's Executive Safety Council executed strategic safety leadership through discussions on safety issues and accomplishments at its monthly meetings.

Strategic Improvement. For FY14, SFO and Sandia agreed to a PEP Site-Specific Outcome for improving work planning and control (WP&C) through the application of engineered safety principles. Building upon that concept, leadership at SFO and Sandia have also committed to strengthening the approach to safety improvement through Sandia's "Site-Wide Safety Improvement Plan." SFO has suggested it be included as a new Site-Specific Outcome in the FY15 PEP. The plan includes four major themes:

- *Effectiveness of Implementation/Execution of Work Planning & Control using Engineered Safety Principles.* SFO and Sandia taking a deliberate course of action to drive continuous improvement in the implementation of Work Planning & Control Criteria for Safe Design and Operations.
- *Extent of Condition Review.* SFO and Sandia Leadership will lead actions to detect and correct conditions identified as contributing factors for past, significant events.
- *Independent Assessment of Implementation.* SFO and Sandia will lead development and implementation of an approach for independently assessing and validating the effective

implementation of Work Planning & Control Criteria for Safe Design and Operations criteria in their organizations.

- **Safety Culture.** SFO and Sandia Leadership will (1) dedicate attention to evaluation of employee attitudes and behaviors against management expectations during performance evaluations and (2) develop and implement an approach for integrating safety and security with mission performance.

Employee Engagement

*Interaction (e.g., employee engagement and middle management)
Communication*

Critical thinking. All employees at SFO and Sandia are empowered to engage in critical thinking, whether it is applied to activity-level work, or simply walking to and from the parking lot. SFO and Sandia are working to raise personal awareness and mindfulness, all the while recognizing our shared understanding of risk and consequence, through “Everyday Safe.” This concept asks employees to ask three questions to any activity, assignment or event:

- What could go wrong?
- How can I prevent it?
- How can I prepare for the unexpected?

Identifying outliers and understanding sub-cultures. Engaging employees is critical to understanding core causes and critical issues that have led to events or failures in the past, or could be precursors or indicators for future events. In reviewing the current approach to maturing safe work practices, SFO and Sandia has recently recognized that the approach may not be inclusive of subcultures, thus creating “outliers” (e.g., people who think they get it but don’t, and people who don’t realize they need it). Therefore, SFO and Sandia are committed to identifying, understanding and including the subcultures in its strategy.

Work Planning & Control. SFO and Sandia support the integration of Engineered Safety principles into WP&C processes. This new approach to WP&C has enabled critical discussions and thinking at every level at Sandia. Attention accepting and planning work, identifying hazards, participating in cross-organizational, collaborative teams of SMEs, effective manager review and approval and feedback from lessons learned. The practice of approaching activity level work using Engineered Safety Principles has also enabled SFO to understand Sandia’s processes, ask questions and provide more comprehensive oversight. The implementation has engaged the workforce through revised training (WPC300), peer reviews, videos and news articles.

Communications. Communication to the workforce includes the consistent demonstration of three safety behaviors –

- Encouraging the workforce to *Do the Right Thing*
- Encouraging the workforce to *Always Try to Get Better*
- Encouraging the workforce to *Create a Just Culture*

As a best practice, Sandia established the “LiveSafe” website to provide resource for leaders and employees to discuss safety in an effective, applicable and meaningful way. LiveSafe is a dedicated resource for managers and staff, intended to facilitate discussions and awareness of safety.

Other best practices employed by SFO and Sandia include:

- Encouraging employee participation in event reporting, critiques, and causal analysis.

- Establishing peer-to-peer forums for open communication.
- Exercising 'roll-up' processes to engage employees.
- Encouraging use of differing professionals opinions (DPO) processes.
- Including employee-level membership on major councils and working groups.

Organizational Learning

Identification, Prioritization and Resolution of Issues

Measurement & Feedback

Communication

Developing a Just Culture. SFO and Sandia are applying Just Culture principles to influence change in the current environment, which includes:

- Empowering the workforce to pause and report operations and activities deemed unsafe.
- Using and demonstrating values in the decision-making process and instilling accountability to reinforce good behaviors.
- Using events as learning opportunities and communicating when something goes wrong.

Gaining Insight. To better measure the progress of the implementation of WP&C using Engineered Safety principles, and to demonstrate sustainability of such progress, Sandia has engaged an External Advisory Board (EAB). Comprised of experts from industry, the EAB allows an external, diverse perspective, intended to identify issues, opportunities for improvement and proposed actions for further development.

Sandia is also working with DuPont, a leader in industrial safety consulting, to conduct a comprehensive safety culture survey. Participants in the survey included employees from Sandia and SFO. The insights gained from the survey will help leadership better understand the thoughts and opinions of the workforce in order to refine its strategy for influencing positive change to the climate and culture. A similar national survey with DuPont was conducted at Sandia in 2005, allowing for both internal and external comparisons.

Refining its Strategy for Climate Change. In learning from past events and gaining new insights, SFO and Sandia are reevaluating its strategy to change environmental factors that can influence the culture. For example, to ensure the environment encourages a healthy reporting culture, SFO and Sandia are learning how to receive and react to bad news and how to engage in difficult conversations.

Examples of other effective tools and actions for organizational learning at SFO and Sandia include:

- SFO and Sandia are transforming their approach to assessments to ensure we don't just "do" assessments, but instead use assessments to learn and improve.
- Sandia has employed varied approaches to developing leading indicators (metrics) to facilitate discussion and prevent injuries, including data analytics, causal analysis and review of "potential, high-consequence" events.
- Sandia performs cross-event analysis and regular analysis of accidents and injuries and develops quarterly awareness campaigns and tools (e.g., posters, safety minutes, hand outs, and manager tools) to communicate with leaders.
- Sandia established a diverse team to identify a simple way for employees to report concerns, safety issues, and potential hazards in the workplace, while maintaining its effective reporting mechanisms in existence.
- SFO and Sandia offer Human Performance Improvement (HPI) courses for leaders and employees to raise awareness and facilitate discussions about human performance.

- Sandia established a communication mechanism on its homepage to communicate lessons learned, examples of critical thinking, and reminders about safety (especially after events).
- Sandia has defined various intersecting methods of collecting data (behaviors, safety perception, safety performance, diverse survey methods) and have planned for analysis to identify themes in an innovative, unexpected approach.
- Sandia's new and reassigned personnel are required to complete a comprehensive, one-on-one, on-boarding discussion with the manager to ensure training requirements are defined and potential hazards are communicated.
- Sandia uses a training hub to assist employees to identify training opportunities, track required training and maintain records for learning and professional development.
- SFO and Sandia conduct benchmarking to compare performance against external organizations to learn and improve.
- SFO and Sandia support and provide matrix assistance to other sites and agencies. This assistance allows for those learning opportunities and the ability to share best practices.

Sandia Field Office Summary *for Safety Culture Sustainment*



Geoff Beausoleil, SFO

Mike Hazen, SNL



August 5, 2014

Sandia's Sites

Albuquerque, New Mexico



Livermore, California



Kauai, Hawaii

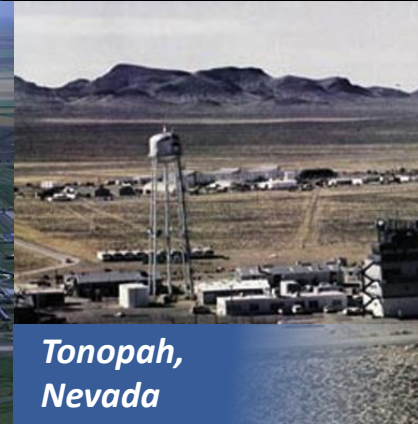


*Waste Isolation Pilot Plant,
Carlsbad, New Mexico*

*Pantex Plant,
Amarillo, Texas*



*Tonopah,
Nevada*



Sandia's Operations

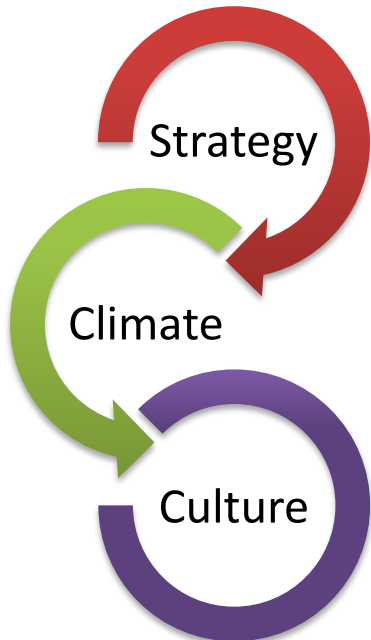
- 45 major test facilities
- 2,718 labs spanning over 39% of our square footage
- 1,958 light labs
- Wide-range of hazards including:
 - Radioactive/nuclear
 - Explosives/ammo
 - Chemicals
 - And of course slips, trips and falls...



The Essence of A Safety System



How to Influence Culture



SFO and Sandia's Strategy

We “engineered” a strategy to reshape our Safety Culture:

- **Strong leadership commitment and engagement**
 - Embed our values in our systems
 - Leaders demonstrate values through actions
 - Ownership and engagement in safety at all levels
- **Engineered Safety Principles with Critical Thinking**
 - What could go wrong?
 - How can we prevent it?
 - How can we prepare for the unexpected
- **Apply Just Culture**
 - Empower the workforce to report/pause
 - Use values in decision-making process
 - Use accountability to reinforce good behaviors
- **Use events as learning opportunities**
 - Communicate when something goes wrong
 - Reevaluate the strategy

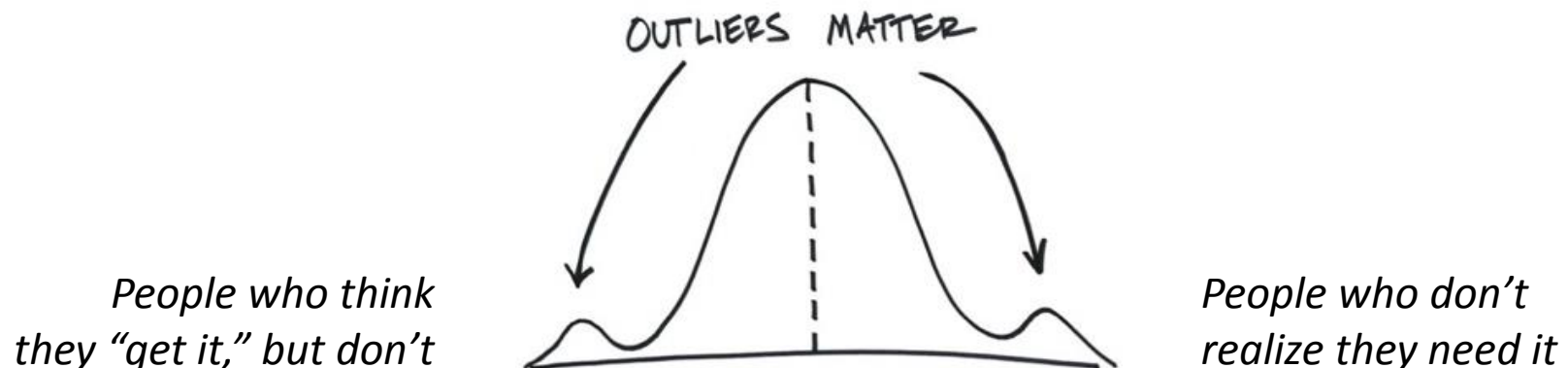
My AHA Moment!

Lessons Learned at the Strategic Level



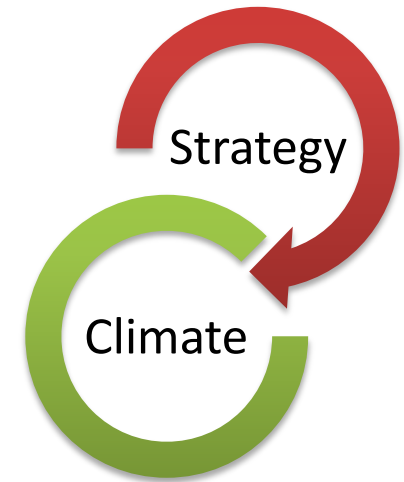
Site 9920 Core Causes

- Failure to effectively implement “safe by design” intent
- Insufficient Work Planning & Control (WP&C) of Test Operations
- Insufficient integration and understanding of the project
- Approach to maturing safety practices and discipline has left some workplaces behind

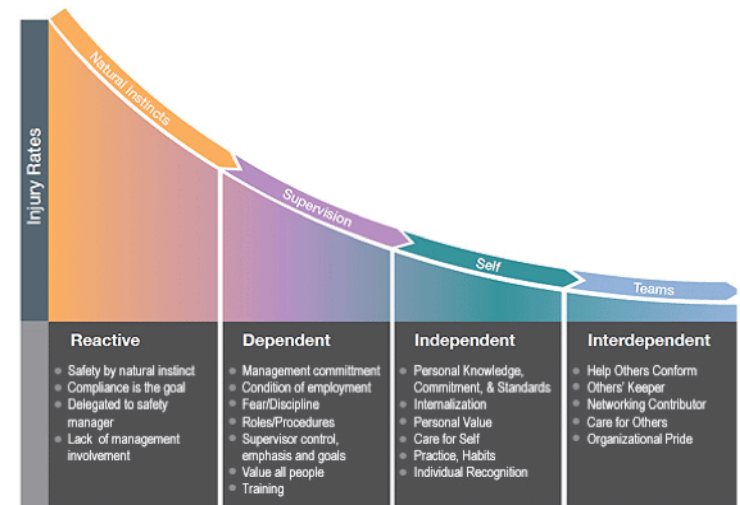


Refining our Strategy for Climate Change

- Learn how to receive/react to bad news
- Engage in difficult conversations
- Use critical thinking for “Everyday Safe”
 - 70% of events during non activity-level work
 - Raise personal awareness and mindfulness
 - Shared understanding of risk and consequences
- Improve awareness about subcultures
- Define how to measure progress
- Use experts in safety case reviews
- Gain insight of external advisory board
- Explore and partner with industry



DUPONT BRADLEY CURVE



Sustainment Plan Ideas/Recommendations

- Treat safety as a system
 - Understand your safety culture and recognize your subcultures
 - Engage leadership to develop and execute a strategy
 - Change the factors in your environment that can influence the culture
- Encourage critical thinking for “Everyday Safe”

