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Utilizing Safety Principles to Achieve World Class Results in Contractor Safety Performance

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Introduction

Achieving world class safety performance is a challenge that requires a tremendous amount of leadership and commitment. Safety competes with cost, schedule, and quality for resources, and many in the international construction industry still believe that an effective safety program has a negative return on investment. While safety in many contractor-managed construction yards and sites may be viewed as important, it is questionable as to whether it is truly a value or maybe even a priority. While safety has clearly improved in the international construction industry over the last decade, the driver for that improvement appears to be driven externally by clients such as ExxonMobil Development versus being internally driven by the contractors. International construction contractors are beginning to recognize that the safety expectations of these clients are driven by a corporate value that reflects the character and commitment of senior management that recognizes how one achieves performance is just as important as the end result. While world class safety performance in itself does not define success for a project, a project cannot be defined as successful without world class safety performance.

Can companies such as ExxonMobil Development make a difference in contractor safety performance? At ExxonMobil Development we believe that not only can we make a difference in safety performance, but the effort that we place on improving safety performance will also positively impact the other business objectives that are important to us... cost, schedule, and quality. During 2002, ExxonMobil Development utilized 58 million man-hours of contract labor with approximately 85 percent of the work taking place on ExxonMobil leases and/or right-of-ways in West Africa and the Middle East. The other 15 percent of the work took place in contractor fabrication yards in Europe and Korea. The total recordable incident rate for 2002 was 0.38 incidents per 200,000 man-hours, and the lost time rate was 0.04 incidents per 200,000 man-hours. This is 16-20 times better performance than the U.S. construction industry in general. While this performance is clearly world class, there is still room for improvement since the statistics do include a fatality.

The purpose of this technical paper is to:

- 1) provide an overview of ExxonMobil Development's fundamental approach to contractor safety,
- 2) introduce some safety principles that lead ExxonMobil Development teams and contractors to higher levels of performance, and
- 3) demonstrate the value of several tools that effectively convert these safety principles into safe behaviors that lead to positive results.

Safety at ExxonMobil is non-proprietary. We hope that by sharing our experiences and processes others in industry will benefit, and ultimately fewer workers will be injured. While it is easy to get wrapped up in the numbers, in the end safety is all about people and enabling those workers who

come to our sites each day to go home to their families each evening unencumbered by an injury. We hope others in industry will share their experiences and processes such that we too can learn how to take that next step in safety.

Establishing the Vision

To understand how safety is managed at ExxonMobil Development, one must first understand their Safety Credo. The Safety Credo (Figure #1) was developed in 1998 to establish a vision that would be accepted and embraced by Company employees and contractors, and lead the combined team to higher levels of performance. The Credo consists of two expectations and several beliefs. The first expectation is that the management and employees of ExxonMobil Development Company ***will relentlessly pursue an ultimate objective of an injury and illness free work place.*** ExxonMobil recognizes that anytime the numbers (e.g., total recordable rate, lost time rate, number of first aids, etc.) are greater than zero, someone has been injured. They also recognize that on any other day the event(s) that lead to this injury could in fact have lead to a more serious disabling injury or multiple injuries. If one is not actively pursuing an injury and illness free workplace then one is accepting that not only is someone going to be injured, but it could even be a serious disabling injury or a fatality. Serious disabling injuries and fatalities are unacceptable, and thus we must actively pursue an injury and illness free workplace.

The second expectation is ***that we will not compromise our focus on safety in order to achieve any other business objective.*** ExxonMobil Development has an expectation that not only do they want their projects built within cost and on time, but also they want outstanding quality and most importantly nobody getting hurt. From ExxonMobil's perspective, this is not an unreasonable expectation because those things that they do to keep people from being injured (e.g., planning and communication) also positively impact their other business objectives... cost, schedule, and quality. For ExxonMobil to be successful, they must aggressively pursue all their objectives in the areas of cost, schedule, quality, and safety. ExxonMobil also recognizes that while all of their objectives are important they must avoid exposing workers to unacceptable risk for any reason. Lack of time, knowledge or resources cannot be used as an excuse. Taking shortcuts or compromising safety is not acceptable.

The first of the three beliefs is that ***our safety actions are most effective when we genuinely care about each other.*** ExxonMobil Development recognizes that safety is about people. Those workers at ExxonMobil construction sites and in contractors' fabrication yards are just like ExxonMobil employees; they want to work, they need to work, and they have families that depend on them. They, like ExxonMobil employees, have family and friends who expect them to return from work uninjured. ExxonMobil has found that their safety actions are most effective when they consider their fellow employees and workers as individuals, not just numbers or statistics. ExxonMobil recognizes that if they genuinely care about each other and make their safety-related decisions accordingly, then their overall safety performance will improve. Statistics are important, but they should not be the sole focus of attention.

ExxonMobil Development's next belief recognizes that ***each of us has a personal responsibility for our own safety and the safety of others -- both on and off the job.*** Safety is not just the responsibility of the safety group. Each ExxonMobil employee and/or representative has a personal responsibility for safety that cannot be delegated, and each of them is expected to take an active role in the safety processes and activities related to their work. They are expected to intervene when

necessary and watch out for each other. Making meaningful contributions to improving safety can be very rewarding. ExxonMobil believes that responsibility for safety does not only apply on the job, but that everyone has a responsibility to use safe work practices off the job as well. Safe behaviors should be the same whether on or off the job.

ExxonMobil Development's third and final belief is that ***all injuries and illnesses can be avoided when we practice safe behaviors***. ExxonMobil's experience has shown that all incidents are attributable to unsafe behaviors, whether it is the behaviors of individuals, or team behaviors, or system behaviors. "Acts of God" are statistically rare and practicing safe behaviors is an effective means of preventing accidents. ExxonMobil recognizes that if they increase their safe behaviors, then they will fundamentally increase the chance of positive consequences which ultimately leads to a greater chance of not having an event which may lead to an injury or illness.

Figure # 1 – ExxonMobil Development Safety Credo



Safety Credo

We, The Management And Employees Of ExxonMobil Development Company :

- ... Will relentlessly pursue our ultimate objective of an injury and illness free work place
- ... Will not compromise our focus on safety in order to achieve any other business objective

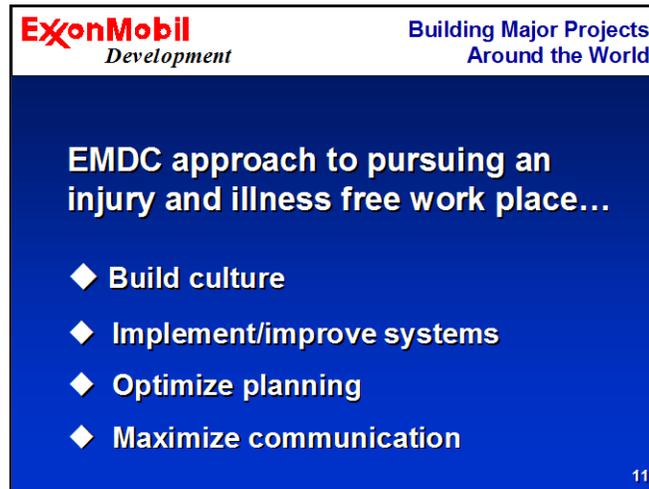
And We Believe:

- ... Our safety actions are most effective when we genuinely care about each other
- ... Each of us has a personal responsibility for our own safety and the safety of others -- both on and off the job
- ... All injuries and illnesses can be avoided when we practice safe behaviors

Fundamental Approach

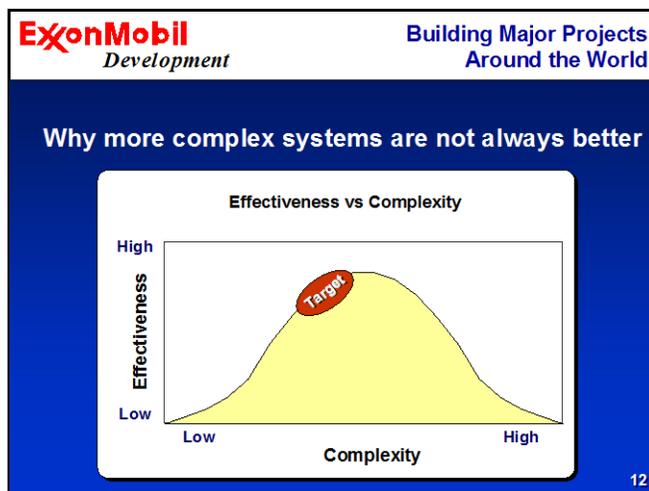
ExxonMobil Development's approach to pursuing an injury and illness free workplace is not complex. As shown in Figure #2, ExxonMobil pursues an injury and illness free workplace by 1) building culture, 2) implementing and/or improving systems, 3) optimizing planning, and 4) maximizing communications. When ExxonMobil speaks of building culture, they mean culture not only within ExxonMobil project teams, but also with the contractor management teams in the home office and at the construction or fabrication site. This requires site management team to make safety a priority just as they would cost, schedule, and quality. When ExxonMobil speaks of building culture, they are referring to the practice of actively caring for individuals and recognizing that by being visible with their care, the workers will try to live up to management's safety expectations.

Figure # 2 – ExxonMobil Development’s High Level Approach to Safety



ExxonMobil Development recognizes that caring about safety is simply not enough, and that to be effective in safety an organization must also take a systematic approach. To that extent, ExxonMobil assists contractors by either working with the contractors to improve the contractors’ existing systems or introducing new safety systems. ExxonMobil works diligently to make sure that ExxonMobil’s safety systems are not overly complex, and recognize that there is a relationship between system complexity and effectiveness (see Figure #3). ExxonMobil’s preference when developing safety systems is to be to the left of the peak versus the right side of the peak. ExxonMobil would rather be in the position of improving a system by slowly adding complexity vs. trying to back up the curve. This approach has been well received by ExxonMobil’s site representatives who are ultimately the primary customers of the system(s).

Figure # 3 – Relationship Between System Complexity and Effectiveness



In the construction business, planning is paramount to success; if it is critical, then it is planned. Safety is no different than any other aspect of the business, and ExxonMobil Development plans for safety just as they plan for executing schedule and assuring quality. The final behavior in pursuing an injury and illness free work place is to maximize communication. Organizations often fail to not only communicate their safety plan but also their expectations and beliefs (e.g., the Safety Credo). The greatest challenge that management teams have is to frame and communicate their safety expectations in a manner that the workers can embrace them, and then assure that their systems allows the workers to live up to their expectations.

Figure # 4 is a model of what ExxonMobil Development believes is a world class approach to safety management. So often as professionals, we are asked by project teams and contractors to give them the magic formula for safety with the understanding that once we deliver it, they will execute it (the formula) better than anyone else will in the world. ExxonMobil recognizes that because of different cultures, as well as many other factors, there is no magic formula for safety. What ExxonMobil does know from their own experiences, the experiences of their competitors within the industry, and reviewing successes outside the construction industry is that there are some common elements to most successes. These common elements include 1) a high level of management commitment and leadership, 2) a workforce that is engaged and involved, 3) resources that are focused on incident prevention (versus incident management), and 4) an incident management process that applies learnings towards continuous improvements. Figure #4 shows that management commitment and leadership drive worker involvement to focus on incident prevention processes, and in the event that an incident does occur, the learnings should be applied to continuously improve the other elements.

Figure # 4 - ExxonMobil Development’s Model Approach to Safety Management

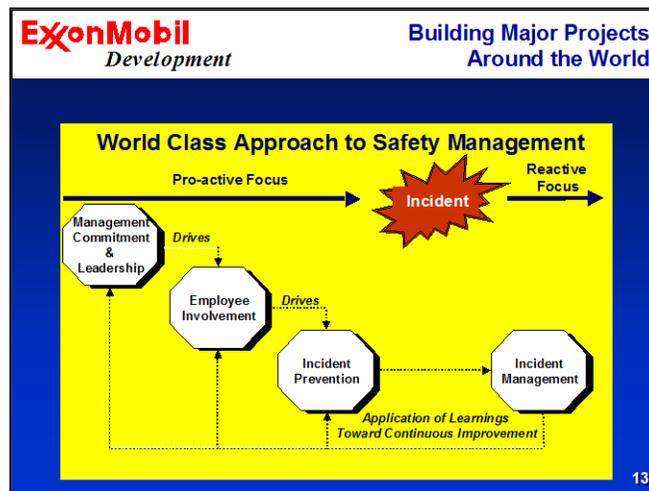
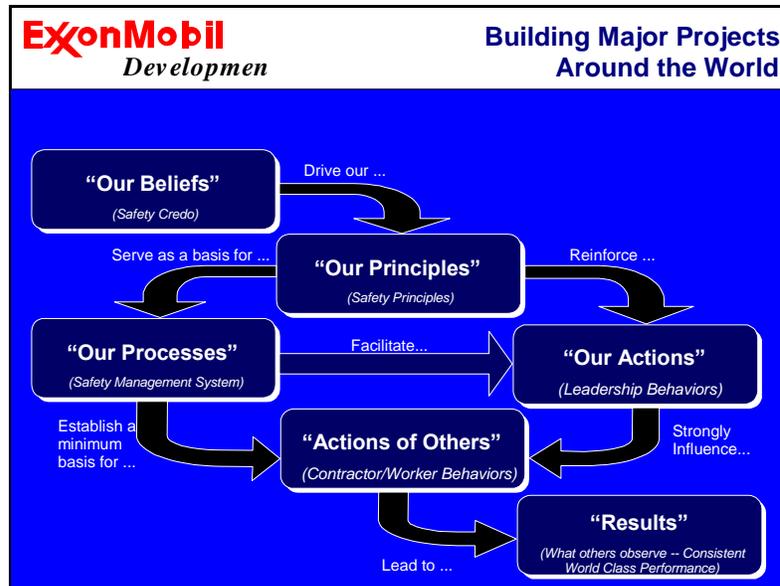


Figure #5 is what ExxonMobil Development refers to as their safety roadmap. In explaining this roadmap, we commonly start at the endpoint labeled “Results”. ExxonMobil has an expectation that their projects reflect world class performance in every aspect of the business, and because ExxonMobil is a construction management company, their reported safety results are a direct reflection of their contractors’ safety performance. While the contractors are ultimately responsible for the safety performance of their personnel, ExxonMobil recognizes that they can positively impact contractors’ safety performance by demonstrating leadership behaviors and requiring a systematic

approach to safety. ExxonMobil recognizes that their leadership behaviors strongly influence the contractors' performance, and that the safety management systems ExxonMobil brings to the project establish a minimum basis for 1) how the contractors' systems should perform and 2) facilitates ExxonMobil's site team's leadership behaviors. ExxonMobil then recognizes that their safety principles, summarized in Table #1, reinforce both their safety management systems and their leadership behaviors. These safety principles are driven by their beliefs, which are reflected in the Safety Credo.

Figure #5 - ExxonMobil Development's Safety Roadmap



ExxonMobil Development's Safety Principles

ExxonMobil Development has 14 safety principles that support their leadership behaviors and safety management systems. These principles are each discussed in detail below.

Principle 1 – Leadership: Effective leadership, especially from senior management, convinces workers that safety is a core value and is never compromised. Safety starts with leadership, and leadership (versus management) is what ultimately makes safety happen. While a project may be able to manage improvement in performance over time, leadership is what ultimately leads to step change improvements in performance. Leadership assures that resources are in place and that systems are being utilized to facilitate continuous improvement. Effective leaders are passionate about safety, sincere, personally involved, and set a positive example.

Principle 2 – Commitment: Success is achieved only when management demonstrates unyielding commitment to safety versus other business objectives. Commitment is what drives an organization to follow through when challenged by multiple objectives. Commitment is what one observes when the project is shut down to resolve safety concerns even though shutting down impacts cost and schedule. Many times in industry this is referred to as “walking the talk”. Management’s level of involvement through personal time and effort as well as management’s behavior during difficult circumstances are true reflections of commitment.

Table #1



Safety Principles

#	Keyword	Principle
1	Leadership	Effective leadership, especially from senior management, convinces workers that safety is a core value and is never compromised.
2	Commitment	Success is achieved only when management demonstrates unyielding commitment to safety versus other business objectives.
3	Responsibility	Individuals are responsible for performing their jobs in a safe manner while line management is accountable for the safety performance of personnel under their supervision.
4	Involvement	High levels of worker involvement lead to better understanding, ownership, and ultimately commitment.
5	Partnership	The collaboration that comes with a “partnership approach” to safety enhances the selection and implementation of initiatives, which yield improved results.
6	Balance	Consistent world-class safety performance requires a balance between establishing a safety culture characterized by passion and caring and utilizing a systematic approach to safety.
7	Diversity	Because of varying cultures, there is no single solution or formula for safety.
8	Prevention	All accidents are the results of hazards created by unsafe behaviors, system deficiencies; or some combination of both.
9	Systematic Approach	Workplace hazards can best be identified assessed, and addressed using a systematic approach.
10	Safe Behaviors	Workers practice safe behaviors when they fully understand the desired behaviors and are motivated to practice them.
11	Competency	Line management and workers must possess the appropriate knowledge, skills, and abilities to plan and execute their work safely.
12	Stewardship	The stewardship of both leading and trailing safety indicators provides discipline to implement initiatives and focus resources on improvement opportunities.
13	Responsiveness	Response to an incident is most effective by demonstrating care for the individual, focusing on the recovery of those impacted, and then maximizing learning.
14	Relentless Pursuit	Regardless of the success achieved, constancy of purpose is required to offset the natural decline in the effectiveness of safety programs.

Principle 3 – Responsibility: Individuals are responsible for performing their jobs in a safe manner; while line management is accountable for the safety performance of personnel under their supervision. Each and every project team member has the individual responsibility to make the safety of themselves and their co-workers a foremost consideration. When one reviews an ExxonMobil Development project safety plan they will find that each member of the project management team has a set of defined behaviors and safety deliverables which cannot be delegated to another team member, nor the safety group. Line management is responsible for assuring that the team is aligned on expectations, adequate resources are provided, actions are consistent with expectations, and controls are in place. The safety group’s role should be focused on coaching and facilitating improvement, and the burden of safety performance should be placed with line management rather than the safety group.

Principle 4 – Involvement: High levels of worker involvement lead to better understanding, ownership, and ultimately commitment. Many times the difference between success and disappointment is simply getting the workers engaged in the safety process. The workers have the best understanding of which safety processes do not work and the system conflicts that prevent the workers from meeting the expectations of the management team. The workers are in the best position to identify hazards; they often have the best solutions and can provide management with further insight into improvement opportunities. One can easily determine whether safety is either a value or priority by simply asking a few workers.

Principle 5 – Partnership: The collaboration that comes with a “partnership approach” to safety enhances the selection and implementation of initiatives. Implementation of safety programs should be based on cooperation rather than conflict. A “partnership approach” benefits not only the Contractor and the Company, but also most importantly the worker. This approach embraces cooperation, teamwork, alignment, sharing, flexibility, and mutual respect. ExxonMobil Development utilizes a partnership approach to contractor safety and rather than change a contractor's safety program for a project, they work with the contractor to improve the contractor’s current processes and implement new processes. This approach not only benefits the current ExxonMobil project but also future projects that the contractor may be involved in, be they ExxonMobil or competitors' projects. Safety partnerships:

- encourage the owner and contractor to discuss safety during the planning stage of the project,
- are an effective means of leveraging resources and knowledge,
- build teamwork between the owner and the contractor,
- foster alignment between owner and contractor management teams,
- allow for diversity between owner and contractor programs,
- allow for synergy of owner and contractor programs,
- make identification of process or system oriented deficiencies more efficient,
- serve to validate existing safety processes,
- improve adaptability of the construction team to real time changes, and
- maximize the inherent sharing of learnings and best practices.

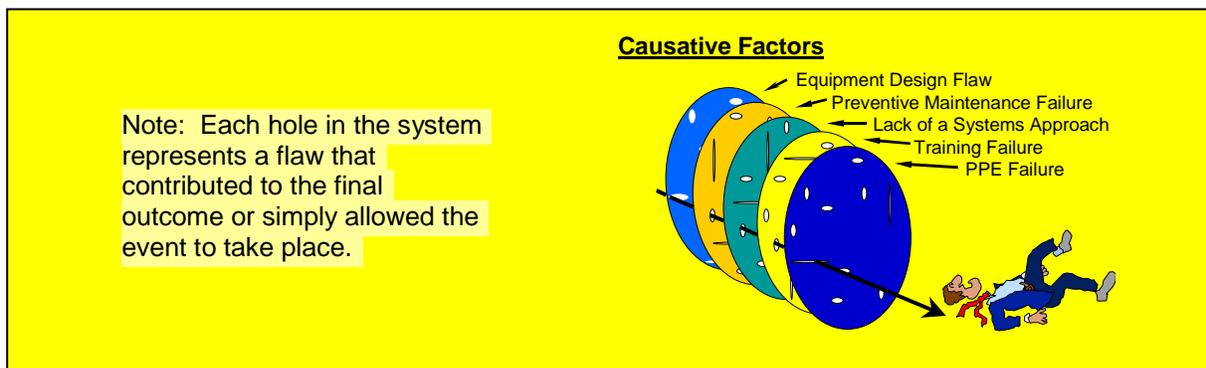
Principle 6 – Balance: Consistent world-class safety performance requires a balance between establishing a safety culture characterized by passion and caring and utilizing a systematic approach to safety. While ExxonMobil has a long history of a safety culture that is

committed to safety, the progress made over the last decade has clearly been linked to the implementation of safety management systems. While a safety culture characterized by passion and caring makes the safety program effective, a systems approach to safety provides efficiency and consistency. Safety systems by themselves are clearly not the answer. Without a safety culture that cares about the workers, the safety system just ends up being another notebook on the shelf and is underutilized.

Principle 7 – Diversity: Because of varying cultures, there is no single solution or formula for safety. So often projects and contractor teams are searching for the magic formula for safety. ExxonMobil Development’s experience has been that there is no magic formula for safety simply because what motivates one group of workers in one part of the world is completely different than what motivates another group of workers in another part of the world. Understanding other cultures leads to better solutions. Changing contractors’ safety programs to simply meet a client’s specific requirements may not optimize safety for the worker.

Principle 8 – Prevention: All accidents are the result of hazards created by unsafe behaviors or system deficiencies, or some combination of both. A tremendous amount of research by industry and the academic world has been performed on accident causation. ExxonMobil Development’s experience has been that unsafe behaviors, not only individual behaviors but also team behaviors, are clearly contributors in 90 plus percent of all accidents. Along with these unsafe behaviors are system(s) failures that are linked to the initiation of events, or contributed to the final outcome, or simply allowed the incident to progress. Typically there are multiple system failures (see Figure # 6) that allow an incident to take place. While sometimes it may not be practical to eliminate all workplace hazards, accidents can be prevented by acknowledging and accounting for unsafe behaviors by building in redundancy and processes/procedures into our systems.

Figure #6 – Example of Multiple System Failures



Principle 9 – Systematic Approach: Workplace hazards can best be identified, assessed, and addressed using a systematic approach. ExxonMobil Development has an expectation that prior to commencement of work, contractors perform hazard assessments for the work to be performed and periodically reassess potential hazards that may be introduced into the work site as the work progresses. A systematic approach will first identify the steps associated with performing the task, and then the potential hazards associated with each step, and finally the way that the hazards will be eliminated or controlled. A systematic approach provides the structure, discipline, and consistency needed to facilitate planning, communication, and execution at a level beyond individual personal experiences.

Principle 10 – Safe Behaviors: Workers practice safe behaviors when they fully understand the desired behaviors and are motivated to practice them. Workers usually behave in the manner that they perceive is expected of them. It is management’s responsibility to properly identify and consistently communicate and reinforce the desired behaviors. Management should:

- emphasize and practice a pro-active approach to safety, thus allowing unsafe workplace behaviors and conditions to be addressed before they turn into incidents,
- promote positive reinforcement and constructive feedback across all levels of project personnel to make the desired workplace behaviors occur more frequently, and
- empower all levels of project personnel to immediately address any unsafe behaviors or conditions that are within their capabilities and established authority levels.

Principle 11 – Competency: Line management and workers must possess the appropriate knowledge, skills, and abilities to plan and execute their work safely. Training can be a significant part of any solution if discipline to the overall training process is applied and followed through. Knowledge, skills, and abilities are developed not only through initial training, but also through opportunities, experience, and refresher training. Management should continually evaluate the need for additional training for all levels of project personnel to ensure that they have the knowledge and skills required to perform their jobs in a safe manner. Training resources are typically focused on skills training for craft workers. While line management is responsible for the safety of the work force, little has been done to provide line management training in the fundamentals of safety and health. Training in safety and health fundamentals will provide management the knowledge and skills to enhance business decisions that positively impact both short-term and long-term safety performance.

Principle 12 – Stewardship: The stewardship of both leading and trailing safety indicators provides discipline to implement initiatives and focus resources on improvement opportunities. Safety metrics fall into two basic areas; leading indicators which are measurements linked to actions taken to prevent accidents, and trailing (or lagging) indicators which are measurements linked to the outcome of an accident. Figure # 7 depicts a worker taking a fall. Those measures of things that could have been done to prevent the slip, whether it be improving housekeeping, providing slip resistant soles, or training the worker to recognize the slipping hazard, could all be defined as leading indicators. Those measurements linked to the outcome of the event, whether it be type of injuries, OSHA recordability, or near miss reporting are all examples of trailing indicators. Trailing indicators are the final measure of the success of the safety process. Leading indicators, however, measure the effectiveness of implementation and prompt line management to take action before accidents happen.

Figure #7 – Types of Safety Metrics



Principle 13 – Responsiveness: Response to an incident is most effective by demonstrating care for the individual, focusing on the recovery of those impacted, and then maximizing learning. How an organization responds to an incident is a direct reflection of the organization’s values. While properly managing incidents to reduce incident statistics is important, it is most important to assure that an organization’s incident management program is focused on maximizing care and recovery of the individual(s) injured. The numbers (e.g., incident statistics) are never more important than the health and welfare of the workers. Excessive pressures to manage incident statistics ultimately drives reporting of incidents and associated injuries underground. Figure # 8 displays the steps in ExxonMobil Development’s incident management model. While each step in the model is important, management sends a positive message by responding first to the needs of individuals, their families, and co-workers before searching for causes and corrective actions.

Figure #8 – ExxonMobil Development’s Incident Management Model



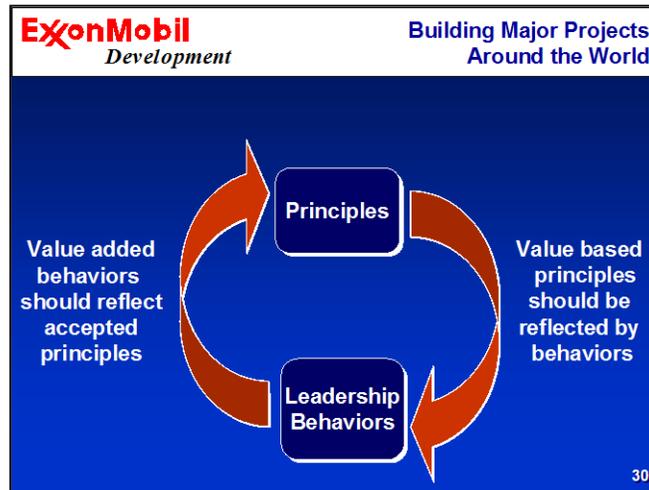
Principle 14 – Relentless Pursuit: Regardless of the success achieved, constancy of purpose is required to offset the natural decline in the effectiveness of safety programs. Constancy of purpose is characterized by a clear focus on objectives, steady progress toward those objectives, unwavering attention, and persistence even in the face of disappointment. Maintaining safety performance is hard work. Those things that contribute to accidents, such as system failures and human error, don’t go away with time, and in fact may creep back into the organization. Taking shortcuts is human nature because it is convenient and has intrinsic value (e.g., saves time). If constant pressure is not applied to the safety program, there is a reasonable expectation that performance will decline.

Tools for Converting Principles into Effective Behaviors

While an accepted set of safety principles can be motivational and valuable, it is difficult for safety principles to impact performance unless the principles are demonstrated by a set of safe behaviors.

Figure # 9 highlights that value based principles should be reflected by behaviors, and that value-added behaviors should reflect accepted principles. Value-added behaviors can be driven into a project either directly (e.g., a listed behavior accompanied with specific deliverables) or indirectly through the use of behavioral safety tools. Table #2 is a list of leadership behaviors derived from ExxonMobil Development’s 14 safety principles.

Figure # 9 – Relationship Between Safety Principles and Behaviors



ExxonMobil Development has also designed many of the tools in their safety toolbox to drive and reinforce those principles discussed above and the leadership behaviors outlined in Table #2. For example, Principle # 5 focuses on building partnerships. Two of the tools which ExxonMobil utilizes to build partnerships with contractors are site safety steering teams and leading safety metrics.

Site Safety Steering Teams

ExxonMobil Development recognizes that there is no magic formula (or silver bullet) for safety, and that different organizations and cultures required different solutions. Discovering and developing these solutions are many times best accomplished by implementation of site safety steering teams. These steering teams consist of representatives from both the contractors’ management teams and ExxonMobil’s management teams. The concept behind the steering teams are that open and frank discussion of successes, disappointments, and ideals ultimately lead to process improvements related to management leadership and commitment, worker involvement, accident prevention processes, and incident management.

Each ExxonMobil Development site steering team is supported with a written charter and typically meets monthly to specifically manage and lead the safety program. Figure # 10 is an example of a safety team charter from one of ExxonMobil’s projects.

A partnership approach with the contractor is utilized to identify hazards, develop systematic solutions, and resource safety. Each charter addressed the mission/purpose of the team and outlines objectives/duties, guidelines, boundaries, and resources. Performance against the charter is stewarded by the site steering team on a frequent basis.

Table # 2



Safety Leadership Behaviors

- | # | Leadership Behavior |
|----|---|
| 1 | Demonstrate commitment and leadership through active participation and the clear communication of expectations. |
| 2 | Define and clearly communicate safety roles, responsibilities, and accountability. |
| 3 | Convince personnel that safety is a core value and establish a work environment that facilitates active caring for individuals. |
| 4 | Establish a work environment which fosters a team approach and embraces mutual respect, open and honest communication, and collaboration. |
| 5 | Provide appropriate resources for effective safety management. |
| 6 | Utilize safety conscious contractors and positively influence their programs so they may progress toward an incident free work environment. |
| 7 | Establish a work environment which engages workers and sets an expectation for seeking out and implementing safety solutions. |
| 8 | Continually evaluate the need for additional training to ensure that personnel have the knowledge and skills to perform their jobs safely. |
| 9 | Use structured hazard analysis processes to identify, assess, and eliminate/mitigate potential hazards. |
| 10 | Utilize structured management of change processes which focus on recognizing and adapting to changes in plans, processes, procedures, and the work environment. |
| 11 | Comply with local regulations and utilize company, industry, and/or reasonable standards where such regulations do not exist. |
| 12 | Measure, analyze, and report safety performance indicators. |
| 13 | Reinforce desirable behaviors and celebrate accomplishments. |
| 14 | Pro-actively communicate and implement a structured incident management processes which focuses on caring for the individual, understanding root causes, and sharing learnings. |
| 15 | Utilize a structured approach to periodically evaluate and upgrade established safety processes. |
| 16 | Facilitate organizational knowledge and growth through the capture, implementation and sharing of safety learnings & best practices. |

Figure #10 – Example Safety Steering Team Charter



TEAM CHARTER

OFFSHORE SAFETY STEERING TEAM

TEAM MEMBERS

Tim Arthur, Pete Altimore, Decie Autin, Doug Boening, Marilyn Tears, Jack Toellner, Larry Ziems, Paul Candies, Ian McGee, Bill McGuire, John Hart, Barry Todd

MEETING ROLES

Leaders: Tim Arthur Facilitators: Jack Toellner, Contractor(s) Equivalent
Timekeeper: Decie Autin Scribes: Rotate every month
Technical Consultants: Jack Toellner, Contractor(s) Equivalent
Observers: TBN (One or more per meeting)

MISSION

To create a positive environment focused on continuous improvement of safety striving toward an injury- free workplace. Make safety happen proactively!

PURPOSE

- + Provide a supportive and stimulating forum to:
 - Promote understanding of expectations
 - Focus on the key elements of an effective safety process
 - Assess the effectiveness of the Site Specific Safety Plan(s)
 - Exchange ideas for improvement
 - Discuss safety philosophies and principles
 - Share learnings
- + Add value by helping line management fulfill their responsibilities relative to safety
- + Foster a common passion for excellence in safety performance

OBJECTIVES/DUTIES

- + Communicate challenging expectations to the Site Specific Safety Teams
- + Ensure adequate resources and support
- + Refine the definition of key elements of an effective safety program
- + Foster consistency of Site Specific Safety Plan(s)
- + Review and monitor effectiveness of safety initiatives and offer opportunities and ideas
- + Charter the Project Specific Safety Teams and evaluate their effectiveness
- + Foster development of proactive safety performance measures
- + Facilitate sharing of learnings with outside organizations
- + Seek out ways for the Offshore Safety Steering Team to become personally involved in the site safety process
- + Positively impact contractor(s) corporate wide safety culture

GUIDELINES

- + Focus on the worker as an individual and foster a genuine caring attitude toward the well-being of all individuals
- + Focus on what the workers need to work safely
- + Strive to understand how or why a safety initiative supports the Objectives
- + Strive to understand the why behind what is working and what is not working
- + Be visible safety champions
- + Behave in a manner that convinces the worker that safety is the top priority
- + Focus on safety philosophy and principles versus day to day implementation of the safety plan
- + Avoid the hasty and indiscriminate application of safety initiatives
- + Be sensitive to Contractor(s) corporate requirements
- + Exhibit a behavior that turns negative occurrences into positive learning experiences

BOUNDARIES

- + Budget and staffing approvals authority is within the team
- + Excludes offsite sub-contractors
- + Team addresses issues through start-up
- + Includes all offshore activities

RESOURCES

- + Team sponsor - Mike Flynn, Diana Project Manager
- + Offshore Coordination Team
- + EUDC Safety Group
- + Site Safety team
- + Contractor (s) HSE Department(s)
- + Diana Project Team Members
- + Outside consultants may be used if necessary
- + Observers



Each steering team typically meets monthly for 1/2 day to address site specific safety issues and the site management team leads the monthly steering team meetings with assistance from the safety staff. Each meeting includes a management walkthrough of the facility where both ExxonMobil Development and contractors managers are expected to participate. Managers are encouraged to take notes on observable hazards and most importantly take opportunities to motivate the workforce. Motivation techniques include:

- brief discussions with the workforce on the importance of safety,
- encouragement to use safe work practices where less than safe practices were observed,
- direct communication that management cares about their personal safety,
- thanking those workers, and their foreman, who were observed practicing safe behaviors, and
- requesting direct feedback on not only what hazards existed at the site, but also what the workers thought the right solution may be.

Each meeting is supported by a written agenda that focuses on both discussions of recent incidents and status of proactive safety measures. Efforts are focused on understanding why incidents are happening, and what ExxonMobil Development and the contractor can do as a team to prevent hazards. Prevention efforts focus first on fixing system (or work process) failures, and then individual behaviors. As part of ExxonMobil's commitment to the safety partnership, ExxonMobil may provide a full time safety advisor at the site to facilitate improvement in the contractor's processes and assist with implementing new processes such as job safety analysis (JSA) and safety walkthroughs.

The use of steering teams clearly facilitates a partnership approach to identifying hazards, developing systematic solutions, and resourcing safety. When utilized properly, safety steering teams can be:

- an opportunity to focus on the big picture and, get past specific issues,
- a means of optimizing existing wisdom & experience,
- a process for demonstrating common support, leadership, and commitment,
- a positive example to employees and contractors,
- a management opportunity to motivate, coach, and facilitate, and
- an opportunity to focus on long-term relationships.

Leading Safety Metrics

Safety metrics fall into two basic areas:

- Leading indicators which are metrics linked to actions taken to prevent incidents, and
- Trailing (or lagging) indicators which are metrics linked to the outcome of an incident.

Leading safety metrics are all about focusing resources on those behaviors associated with accident prevention.

Figure #7 depicts a worker taking a fall. Those measures of things that could have been done to prevent the slip, whether it be improving housekeeping, providing slip resistant soles, or training the worker to recognize the slipping hazard, could all be defined as leading indicators. Those metrics

linked to the outcome of the event, whether it is the type of injury, OSHA recordability, or near miss reporting are all examples of trailing indicators.

Leading indicators are simply the metrics associated with measurable system or individual behaviors linked to preventing incidents. Why leading safety indicators? It is really pretty simple. Businesses and industry typically establish goals and measure those things that are truly important such as cost, quality, schedule, and production rates. If safety is truly important and it is about preventing incidents, should we not be measuring those key actions taken to prevent incidents?

Leading indicators are all about maximizing safety performance by measuring, reporting, and managing positive safe behaviors. ExxonMobil Development's experience has shown that effective leading indicators are those metrics linked to safe behaviors, which are simply those actions taken by the site to prevent accidents. Some examples of safe behaviors include: safety training provided, quality of morning safety meetings (see Figure #11) safety communications performed, level of employees participation in or leading of tool box safety meetings, percentage of supervisors participating in safety walkthroughs (see Figure #12), number of safety audits performed, number of safe behaviors observed, etc. The list of possibilities can be endless, but the ones chosen should be embraced by the site's supervisory and worker safety teams. Ownership is everything!

Figure #11 – Example of Leading Safety Indicator

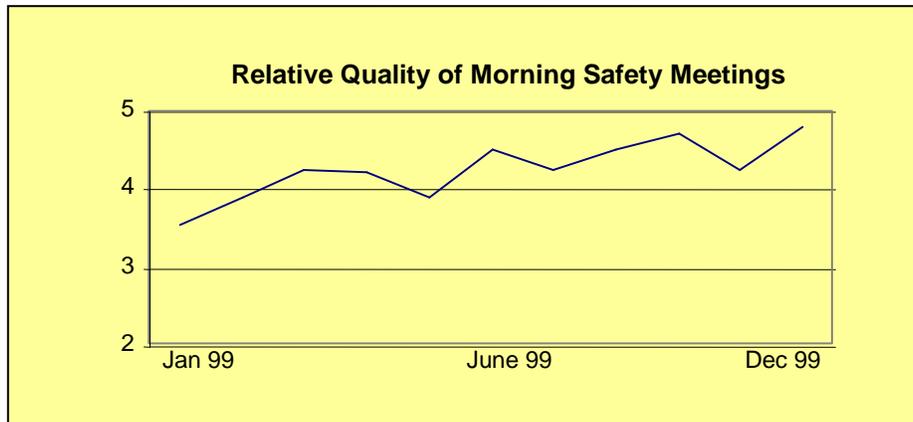
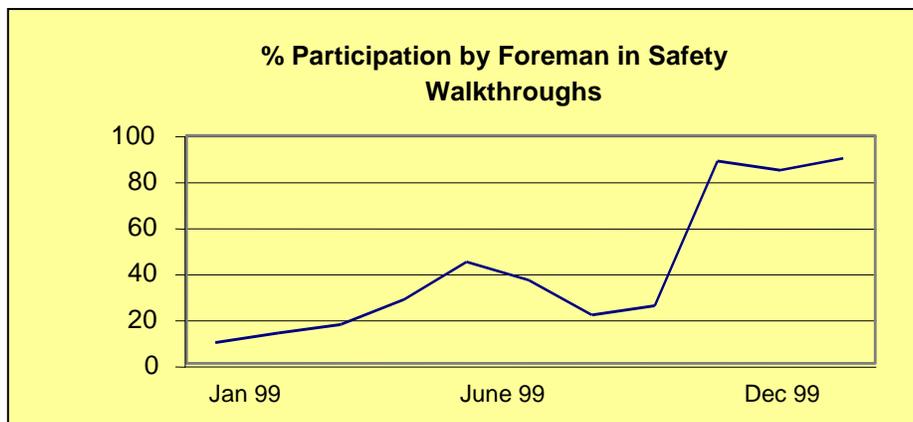
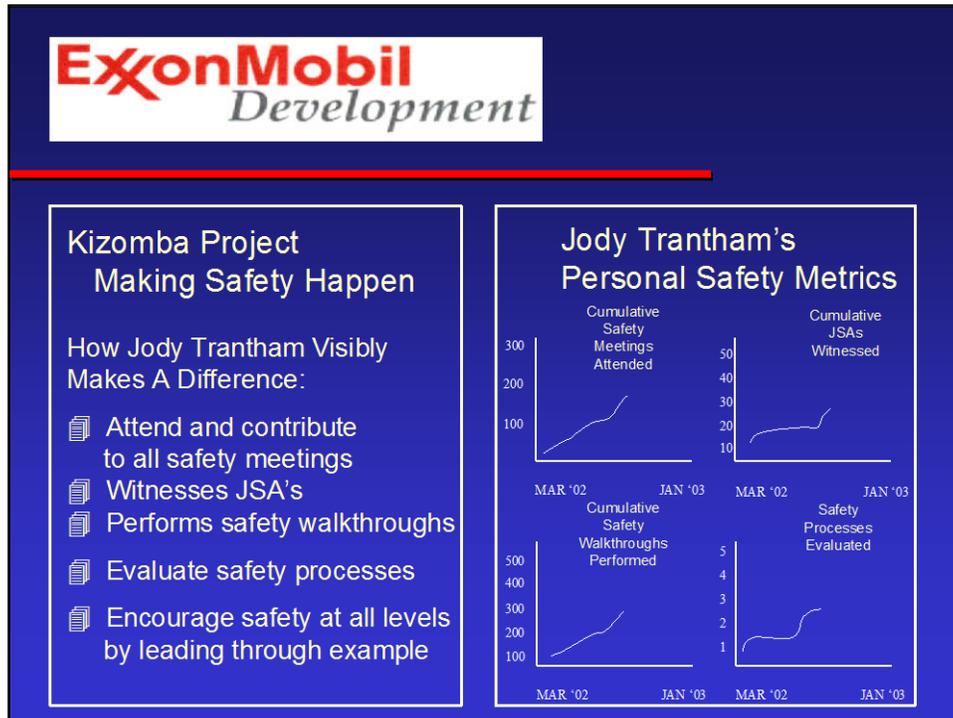


Figure #12 - Example of Leading Safety Indicator



Leading safety metrics can also be useful in defining management leadership behaviors. Figure #13 is an example of one of ExxonMobil Development site engineer's personal safety metrics. When you visit this site engineer's office, there is no doubt as to how this engineer makes a difference in safety, and it is visibly for other ExxonMobil and contractor managers to see.

Figure #13 –Example of Personal Metrics



Leading indicators are all about focusing resources on those things that a site does to prevent accidents. If used correctly, leading indicators:

- allows management to actively demonstrate commitment and leadership,
- allows the workers to get involved with measurable processes, and
- focuses resources on accident prevention processes.

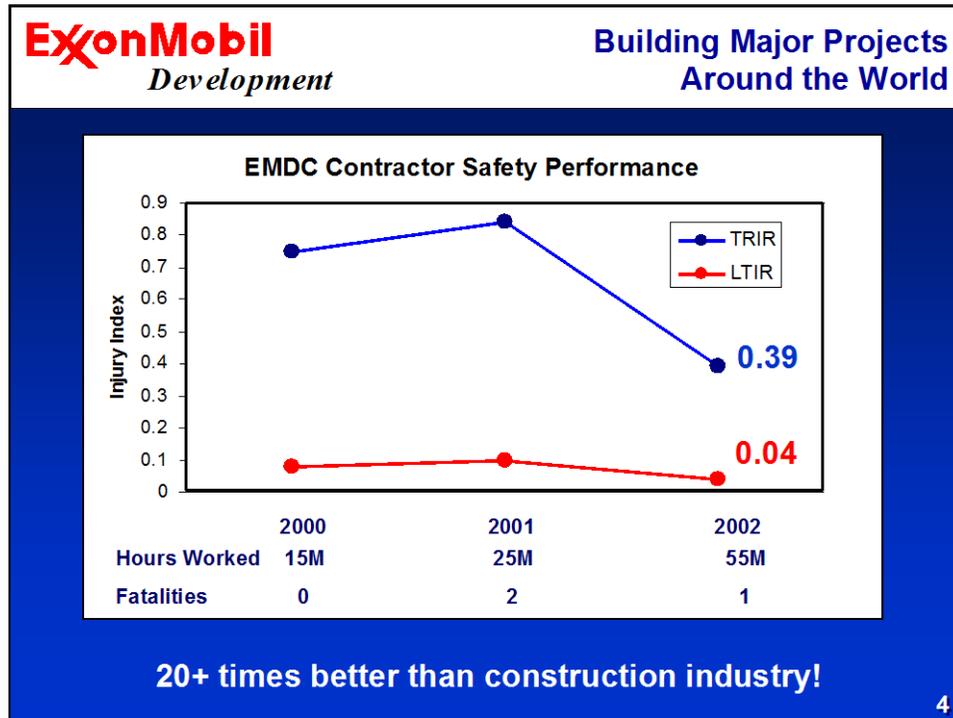
A technical paper dedicated solely to the topic of safety metrics, as applied to construction sites, is available in the proceedings of the 2002 ASSE annual conference and in the September 2001 addition of *Professional Safety*.

Conclusion

Achieving world class performance in safety is difficult in today's competitive international construction environment. Safety competes for resources with cost, schedule, and quality. In addition, many international contractors still challenge the belief that working safe yields a positive return on their investment. Turning safety performance around in an international construction yard is not an overnight exercise, and ExxonMobil Development recognizes that safety, like every other important aspect of the business, is simply hard work requiring not only resources, but management

focus and attention. Can companies like ExxonMobil make a difference? We believe so. Figure #14 summarizes ExxonMobil's international construction contractor safety performance over the last three years. While this performance level is clearly world class, ExxonMobil also recognizes that there is still significant room for improvement.

Figure #14 – Summary of ExxonMobil Development Contractor Safety Performance



Relentlessly pursuing an injury and illness free workplace is an expectation of ExxonMobil Development's safety credo. Part of ExxonMobil's approach in pursuing an injury and illness free workplace is to utilize a set of safety principles to set the stage and reinforce their team's leadership behaviors and safety management systems. These principles serve as a guiding light not only during the best of times, but also during challenging times. ExxonMobil's principles address what they believe to be the key ingredients of any successful safety program:

- Leadership
- Commitment
- Responsibility
- Involvement
- Partnership
- Balance
- Diversity
- Prevention
- Systematic Approach
- Safe Behaviors
- Competency
- Stewardship
- Responsiveness
- Relentless Pursuit

While an accepted set of safety principles can be motivational and valuable, it is difficult for safety principles to impact performance unless the principles are demonstrated by a set of safe behaviors and associated deliverables. ExxonMobil Development follows through on their safety

principles with a well-defined set of safe behaviors and deliverables that are an integral part of their safety toolbox. These tools include not only the examples provided in this technical paper, safety steering teams and leading metrics, but also many other project and contractor deliverables that are spelled out in ExxonMobil's safety specifications. These specifications are designed to impact not only individual behaviors, but also team behaviors and system behaviors. These specifications define expectations for not only the workers but also the management team. Achieving world class safety performance is a team effort that 1) starts with management leadership and commitment, and then 2) follows through with a high level of worker involvement, a focus on accident prevention, and learning from both successes and disappointments.

ExxonMobil Development defines safety success not only in terms of short-term gains, but long-term improvements, and how success is achieved is just as important as the end result. While world class safety performance in itself does not define success for a project, a project cannot be defined as successful without world class safety performance. ExxonMobil recognizes that safety is all about people and maximizing performance for not only the benefit of the project owner and the contractor, but also the workers. Utilizing a principles based approach to safety is an effective means of treating the workers with care and respect, and no matter where you are in the world, the impact of caring and treating people with respect is the same.

Acknowledgments

Special thanks to the ExxonMobil Development and contractor management teams. They clearly demonstrate that:

- safety starts with management leadership and commitment,
- actively caring for the workers is rewarding for both the Project Team and the workers, and
- projects can achieve a high level of safety performance without sacrificing cost, quality, and schedule.

Special recognition is given to ExxonMobil Development's Construction Management team and the Construction Safety Group. The safety principles and approach to safety management presented in this paper are truly a reflection of their daily behaviors in leading a very complex and challenging business. The 14 safety principles were developed by both the Construction Managers and the Safety Group in many meetings with much debate. The process took in excess of a year, but the end result was a set of safety principles that was accepted and embraced by both the Management team and the Safety Group. Those people who made significant contributions in developing ExxonMobil's safety principals include:

Doug Boening

Glenn Mannina

Tim Arthur

Yarami Pena

Al Laechelin

Larry Phillips

Mike Bigler

Craig Simmons

Additional recognition must be given to many individuals in the academic community. As a Professional Engineer and a Certified Safety Professional, I have the responsibility for maintaining and continuously building my knowledge base. I do this by reading published material, and attending seminars/conferences. Dr. Dan Petersen has written much about human error reduction, safety by objectives, and techniques of safety management throughout the years. Much of what we do within ExxonMobil Development relative to system safety is a direct reflection on Dr. Petersen's knowledge

and his willingness to share that knowledge in many books and publications. The other individual in the academic community that has had a profound impact is Dr. Scott Geller. Dr. Geller has researched and published many of his articles and books on the topic of the psychology of safety. His work and advocacy on actively caring for the workers is reflected in our approach to safety management. Both Dr. Petersen and Dr. Geller have impacted the performance of many of our contractors throughout the world. Whether they realize it or not, there are many workers in far away places like Africa and Southeast Asia who go home to their families each evening unencumbered by an injury because they took both the time to research and publish their work. ExxonMobil appreciates their personal efforts and those of many others who perform research and publish the results. Individuals can and do make a difference!

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