THE FUNDAMENTALS OF SAFETY SUCCESS

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ABSTRACT

Since 1995, through 2002 the Combined OSHA recordable rate for Alyeska Pipeline Service Company and its contractors working on the Trans Alaskan Pipeline System (TAPS) has ranged between 1.66 and 2.12 recordable accidents per 200,000 labor hours. (The eight year average is 1.95.) This recorded rate ranked the TAPS workforce near the bottom-third in safety performance of liquid pipeline carries in the nation. In 2002 Alyeska Pipeline Service Company developed a safety training course for managers and supervisors. As a part of their performance measure, Alyeska required all of its managers and supervisors to attend this training in 2003.

The Fundamentals of Safety for Supervisors and Managers provides a base philosophy and concepts to the key fundamentals required to understand and manage Safety on TAPS. The course is comprised of 18 modules. Each module covers a particular aspect of safety management and provides supervisors and managers with the skills, knowledge, and desire to lead their workforce in achieving an injury-free environment. This is done through developing strong leadership, promoting Alyeska's core values and safety culture in all parts of the company and striving to continuously improve our safety performance. Fundamentals of Safety modules focus on making Safety Management practical for Supervisors and Managers; focusing more on the ***why*** *than the how.*

In 2003, the combined OSHA recordable rate for TAPS was cut in half, resulting in 0.86 accidents per 200,000 labor hours. This paper will discuss how the principles taught in the Fundamentals of Safety training can help response organizations prepare their workforces—especially the managers and supervisors—in advance of an emergency response.

DISCUSSION

Alyeska Pipeline Service Company is a not-for-profit service company created in 1974 for the sole purpose of designing, building, operating and maintaining the Trans Alaska Pipeline System (TAPS) on behalf of the owners of TAPS. TAPS is a liquid pipeline system that carries Alaska North Slope crude oil from Prudhoe Bay to refineries in North Pole and Valdez and to the Valdez Marine Terminal. From here the oil is transported on tankers to US refineries on the west coast.

Since inception, the top priorities of Alyeska Pipeline Service Company were safety and oil spill prevention and response. In 1989, Alyeska took on additional responsibilities for marine oil spill prevention and response in establishing the Ship Escort Response Vessel System (SERVS). In the last fifteen years, Alyeska, in conjunction with it contractors, has learned a good deal about safety management and preventing and responding to marine oil spills. Regardless of this experience, Alyeska's track record in its top priority—safety—was not where Alyeska wanted it to be. For example, since 1995, through 2002 the OSHA recordable rate for Alyeska Pipeline Service Company and its contractors working on the Trans Alaskan Pipeline System (TAPS) has ranged between 1.66 and 2.12 recordable accidents per 200,000 labor hours. (The eight year average is 1.95.) This recorded rate ranked the TAPS workforce near the bottom-third in safety performance of liquid pipeline carries in the nation. In 2002 Alyeska Pipeline Service Company developed safety management training for managers and supervisors, The Fundamentals of Safety for Supervisors and Manager. In 2003, the combined OSHA recordable rate on TAPS was cut in half, resulting in 0.86 accidents per 200,000 labor hours.

There are lessons within this safety training that are easy to apply to spill response. Specifically, this paper will explore the following modules in Alyeska's Fundamentals of Safety training; Understanding the Fundamentals of Safety, Short Service Workers, Managing Interfaces, and Contractor Safety Performance. To begin, however, this paper will start with a discussion about Alyeska's safety management plan.

Alyeska's Safety Management Program

Contractors, not Alyeska employees, perform the majority of work hours on TAPS. Therefore, it is vitally important to Alyeska that

its contractors and subcontractors have in place rigorous safety programs. Alyeska management has established safety principles relating to Alyeska, its Contractors and Subcontractors.

Alyeska—in contract language—communicates to all contractors that *the contracting company* is responsible for providing trained, and where required, qualified personnel. It is Alyeska's expectation that all contractor personnel—including union employees—performing work and services for Alyeska will be fully trained and qualified for their jobs ***prior*** to coming to work. Alyeska makes it clear that the Contractor is responsible for maintaining training records. To assist with safety training, Contractors have authorization to use the Alyeska training courses, overview presentations, and test out courses.

The Corporate Safety Manual and the Safety Management Plan at Alyeska and on TAPS are living documents: they are changed and amended. One of the goals at Alyeska is to change safety management from a ***priority*** of the company to a ***character trait*** of the company; thereby engaging the TAPS workforce to perform daily and emergency response tasks while remaining true to the core values of TAPS.

Sugar Ray Robinson once stated, "The mark of a good fighter is how he acts when he is getting licked." All responsible companies view safety as a high priority. Alyeska's view regarding safety is changing. Safety should not be our company's priority: safety must be a character trait of our company. There are many statements regarding the relationship to stress and character, which mainly follow along these lines: stress does not build character, it reveals it. Emergencies will quickly re-align a company's priorities and will—with equal swiftness—reveal a companies true character. Safety must be a character trait—a core value—of a company, not a priority.

Fundamentals of Safety Training

This section discusses how Fundamentals of Safety meets Alyeska's over-all safety objectives. In 2002 Alyeska Pipeline Service Company developed a safety training course for managers and supervisors. As a part of their performance measure, Alyeska required all of its manager and supervisor to attend this training in 2003.

The Fundamentals of Safety for Supervisors and Managers is training that provides a base philosophy and concepts to the key fundamentals required to understand and manage safety within the company. Each of the course's 18 modules covers a particular aspect of safety and provides Supervisors and Managers with the skills, knowledge, and desire to lead their workforce in achieving an injury-free environment. This is done through: developing strong leadership, promoting Alyeska's core value and safety culture across TAPS. Fundamentals of Safety modules focus more on the ***why*** than the how.

This paper looks at four of the eighteen modules—which are most applicable to spill response. The modules explained in this paper are: Understanding the Fundamentals of Safety, Short Service Workers, Managing Interfaces, and Contractor Safety Performance.

Module – 1: Understanding the Fundamentals of Safety

This module introduces a conceptual model of the attributes of people: Knowledge, Skill and Desire. This module describes why managers and supervisors are receiving this training and outlines why it is important for them to understand their role in safety management. Their behavior and leadership are the basic and vital factors to safety performance.

In the book, "First Break All the Rules: What the World's Great Managers Do Differently" Buckingham and Coffman talk about the important relationship between supervisors and managers and their employees. Buckingham and Coffman state that people quit supervisors or managers; they do not quit companies.[1] Congruently, the keys to safety performance are in the hands of supervisors and managers. If there are issues with safety performance, then the first place to look is at the interface between the workforce and their supervisors and managers. The supervisors and managers must have safe behavior as a character trait for safety to become ingrained in the work place.

The other concepts addressed in this module are: System Factors, Safety Filters, Incident Triangle and the Attributes of People.

System Factors looks at and explains why it is important to understand the interaction of facilities, management systems and people. There are three types of incident causes. Facilities or working conditions—all are things around us where we work which, includes the condition and design of tools, equipment and the workplace. Management Systems—interrelated management systems for achieving business results; including standards, processes and procedures for getting those results. People or Human Behaviors—how we act; such things as how people respond to changing conditions, how people interact with machines/ technology or how people use their memories at work.

In the past it was thought that a single event triggered an incident. It is now known that incidents can have many causes. As systems, processes and personnel have become more sophisticated, several failures are usually identified as triggering events in an incident. What is also known is that different people can affect different incident causes. In the past, the thought was incidents were caused by either unsafe working conditions or human behaviors. However, there is now an acknowledgement that supervisors and managers control management systems and working conditions. The way to manage safety today is not to look just at the triggering event(s) which immediately precedes an incident, rather it is important to understand the interaction between system factors.

Safety filters exist between the work and a potential hazard or risk. In reality, any single filter will not be perfect and as a result, numerous filters are in place to manage safety.

Successful safety management understands that processes, facilities and people are integral in a Safety Management Plan. One notable factor is that the people circle is broken down into three areas. Attributes of People are the components of an individual. People have three factors of influence: Desire, Knowledge, and Skill. All individuals must have a desire in creating and maintaining a safe workplace. Knowledge is being aware of our environment and what's going on in it—all day—everyday. This includes, knowing what can injure people, knowing how to prevent the injury and acting to prevent the injury. An integral part of work is Skill: an important part of all business decisions. Skill is the application of knowledge. A balance between all three components (Desire, Knowledge and Skill) is required for a safe operation.

It is the Supervisors and Managers responsibility, not the safety professionals, to ensure that their employees are working in a safe environment. The safety professionals are resources for the supervisors and managers to utilize their expertise when the supervisors and managers need assistance in addressing safety issues in the work place.

Module – 3: Short Service Workers

By definition, a short service worker is a person who is new to the position, or has less then six months with the company, or less than six months in a work location. Major cleanup activities on most spills are concluded with in six months; thus the makeup of most oil spill response organizations primarily consist of short service workers.

A short service worker is at greater risk as they will typically be aggressive with their desire to do a good job. The primary reason for this is because every time a person is placed in a new position there is a perception—whether real or perceived—that

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they are being evaluated immediately on their performance. In the process of jumping in and trying to perform the task, they discount the need for greater skills and knowledge. Their perception is that if they did not know how to do the job or weren't capable, the supervisor or manager would not have hired them. Because the short service worker does not have a complete knowledge of the job they typically cannot recognize the hazards. They will commonly discount the consequences when a hazard is recognized. Additionally, the short service worker may lack an understanding of the safety culture.

Each spill response has a unique safety culture. Furthermore, within the context of each spill response there are sub-cultures; each division, group and task force will develop their own attitude toward safety. When the short service worker is in doubt or unsure of what to do, these cultures provide the links to how, where, when and most importantly, why the job function must be performed safely. Each culture also provides the mentoring or coaching system that builds the understanding of what is expected on the site. Core values regarding safety—character traits—are reflected at the site and represented by each site individually.

Therefore, the short service worker program builds on the existing desire of a short service worker by providing them with the skills and knowledge to become competent in performing the job safely. To manage safety and effectively use the desire of the short service worker to acquire the knowledge and skill, workers, supervisors and managers must understand where the greatest degree of risk and highest exposure is with a short service worker.

Risk and exposure are highest when the worker first arrives on site. During this first period, the worker is "unconsciously not competent", or in other words, they don't know what they don't know.

The risks and exposure decrease as the worker receives training and experience. This decrease takes place as the worker progresses to the "consciously not competent stage" (they know what they don't know), then to the "consciously competent stage" (they have a full understanding of what the job is, why they do it, and how it is done).

A Short Service Worker program is designed to manage the higher risk and exposure when the worker first begins to work on site, and continues until it can be verified that the worker has obtained the knowledge and skills necessary to perform the job safely.

Each short service worker will differ in the risks and exposure for the position, and as such, the supervisor or manager must develop a plan to manage each worker in accordance with the unique circumstances. There are many components of a Short Service Worker program, and each component is a building block to the next. A good short service worker program should address: control, orientation, training, work roles, mentorship/stewardship, identification, and decision.

Control – Understanding Controlled Entry of a short service worker on a spill cleanup operation. With each new worker on site there is a higher associated risk and exposure.

Orientation – Industry, Corporate and Site Specific—all new workers to the site must complete all site specific safety orientations.

Training – A worker's training skills profile/road map should be completed and provided to supervisors prior to arrival. The supervisor will use this information to determine if the worker will need to be put on a short service program and what limitations or restrictions should be put on the worker's activities.

Work Roles – Clearly define the work role of the short service worker and accompany that with a skills profile/road map. The skills profile/road map should indicate all skills required to perform the work role, including the skills not currently possessed. Also, two short service workers are not to be working alone together without special approval.

Mentorship/Stewardship – The short service worker should be under the observation of a competent mentor, (an experienced person) at all times. (Being a mentor is not a task that every employee is capable of performing.) This continues until they have demonstrated competence and are able to perform to safety expectations.

Identification – Distinguishing articles of clothing for new workers should be required, e.g., unique colored hardhat, shirt or coveralls. This allows all site personnel to easily identify a new worker.

Decision – The decision on the retention of the worker based on the worker's actual performance.

There is another risk that short service workers introduce. This risk is the degradation of the overall competency of the team. Collective competence is the level of skills and knowledge of an individual, or group of individuals, which is equal to or greater than that required by the task. The risk further increases with multiple short service workers in a work group. When completing the risk review and risk mitigation plan, consider the following: What is the complexity of the work? Is the work taking place in a controlled area or is it spread over a large area? What other activities will be taking place at the same time in the area? What management systems and processes are in place to protect the worksite and the workers? How many new people will be assigned to the work team? What skills do the new people bring with them? Do the collective competencies of the team meet the job requirements?

The degree of supervision that is required depends on the risk associated with the job. The level of risk is determined by the number of new team members and the work being performed. In short, all inexperienced personnel will need some form of supervision.

Module – 13: Managing Interfaces

This module speaks to the need of effectively managing multiple means of communication or interfaces. Each individual brings different levels of the knowledge, skills and desire components to the worksite. As individual workers become groups or multiple groups, these groups develop a set of competencies. When a group is working in someone else's area of responsibility, or there are new workers who are not fully familiar, conversant, and might not previously have performed the task, the overall group competency fluctuates. These competencies create group dynamics; variations in competencies lead to variations in dynamics among different groups. The complexity of managing these interfaces increases or decreases in relation to the number of people or groups of people involved in the interface: its complexity relates directly to the skills, knowledge, and desire of all the individuals involved.

Critical interfaces are the interaction between two or more groups of people. (The more times communication is relayed, the greater the chance of misunderstanding or mistaken intent.) Thus, the risk in activities increases as the complexity of the interfaces increases. As such, being aware of when and where the interface process provides greater exposure—increased risk—enables one to mitigate that increased risk. Supervisors and managers must ensure that there are processes and systems in place to manage this increased risk.

The highest risks during interfaces are when there is increased ambiguity due to the communication process becoming unclear, vague or causing uncertainty. At Alyeska, although there is a direct link between planning and execution, not all parties are involved in both. As well, there are a number of steps in the handing

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down or relaying of instructions. While this is necessary due to the 800-mile operating area, what Alyeska is working hard to avoid is having one group involved in planning and a totally separate group is responsible for executing the plan. Those managers and supervisors who are responsible for the supervision of the work are involved in the planning process; thus decreasing the gap between planning and execution.

It has become very clear to Alyeska that the highest risk exposures are tasks that require multiple interface management. Commonly there are four types of interface management methods: Verbal, Written, Physical and Structural. Verbal is talking about safety issues and potential problems with the involved parties. Written is communicating safety issues and potential problems in a written document. Physical interfaces control manage using barriers, locks or other means of physical restrictions that reduce the possibility of one person or group impacting the safety of another. Structural interfaces are controls that manage a workplace or organizational using structure that establishes responsibilities and authority for safety management.

Each interface has pros and cons and must be facilitated at the proper times and places to ensure success. Mitigation plans reduce exposure to a risk. Documenting a risk mitigation plan helps to confirm that all parties receive consistent and accurate information for protecting themselves from any identified hazards. However, as with all types of risk, interface mitigation plans require follow-up in order to verify an actual reduction to exposure.

Module – 14: Contractor Safety Performance

Alyeska will only work with contractors who are aligned with Alyeska's core values and have a robust Safety Management Plan. Regular feedback sessions with the contract management provide the contractor with opportunities to identify gaps and improve safety management performance.

Safety success begins with a thorough contractor evaluation process. The contractor evaluation process and criteria make certain that only contractors that meet the required standards work on TAPS.

The contractor evaluation is the first step in this important process. The following minimum criteria must be in place before the contractor bids on work. The contractor has a documented safety program that meets Alyeska standards. The contractor provides a documented safety performance history, which indicates the risks associated with the contractor. The contractor management demonstrates their commitment to safety; management's views on safety and their willingness to close performance gaps are good indicators of this commitment.

At Alyeska, supervisors and managers are responsible and held accountable for safety at their work locations. Therefore, supervisors and managers must ensure the contractor clearly understands and meet the expectations of the contract. The contractor and their employees must comply with all Alyeska standards and expectations outlined in the corporate safety manual, as well as all governmental safety, health and environmental regulations and laws. (This includes proper training.) Contractors must report all hazards, near misses and incidents to Alyeska supervision immediately, even if they have no authority to correct the situation. Not reporting any of these items to Alyeska is a breach of safety standards; thus a breach of contract. Contractors must pre-screen all employees for alcohol and drug testing, safety background, medical history and work experience. Alyeska supervision can, upon review of an individual's records or performance, reject any crewmembers not deemed qualified for the work. Contractors should obtain approval from an Alyeska supervisor prior to changing or substituting personnel on Alyeska work sites. The contractor must identify all short service workers at the time of the change request.

Contract and bid documents will have a statement that the contractor will be required to submit a Safety Management Plan. Alyeska may disqualify contractors based upon prior safety performance, poor safety record or evidence of a lack of management focus on safety. *Alyeska considers any breach of the safety standards to be a breach of contract.* When this occurs, Alyeska has the right to remove the contractor from the workplace and terminate the contract, or seek other remedies, as so deemed by Alyeska.

CONCLUSIONS

Alyeska Pipeline Service Company and its contractors working on the Trans Alaskan Pipeline System (TAPS) had an incident rate ranging between 1.66 and 2.12 recordable accidents per 200,000 labor hours. This recorded rate ranked the TAPS workforce near the bottom-third in safety performance of liquid pipeline carries in the nation. In 2002 Alyeska Pipeline Service Company developed safety management training for managers and supervisors. In 2003, the combined OSHA recordable rate on TAPS was cut in half, resulting in 0.86 accidents per 200,000 labor hours. One of the goals at Alyeska is to change safety management from a priority of the company to a character trait of the company; thus enhancing safety as a core value for all TAPS employees. Emergencies will quickly re-align a company's priorities and will—with equal swiftness—reveal a companies true character. Safety must be a character trait—a core value—of a company, not a priority.

The indictment of New York City's director of ferry operations for the October 2003 fatal crash provides stark commentary on the importance of safety management. Using a law dating back to 1838, the Seaman's Manslaughter Statute, the United States Attorney for the Eastern District of New York is charging that the director of ferry operations "knowingly and willfully" allowed negligence to take place. In a 10-month investigation, federal prosecutors concluded that, over a period of years, managers failed to distribute and enforce written safety rules and failed to train employees in regard to them, leaving a gaping hole in the safety net protecting customers.

There is, in the United States, a growing expectation that industry will provide a safe work environment for all employees. In recent years there are more and more examples of criminal charges brought against supervisors and managers for safety violations. Those companies and organization that are able to make safety management a core value of it culture-a character trait—will not find themselves defendants of criminal complaints.

ENDNOTES

[1] Marcus Buckingham and Curt Coffman, "First, Break All the Rules : What the World's Greatest Managers Do Differently", Simon & Schuster, 1999

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