Gaining and Sustaining Commitment to a Zero Injury Philosophy

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Abstract

This paper examines the processes Bechtel Australia uses to foster the commitment of all employees and contractors to the company's Zero Injury Philosophy. The overall strategy is to use a multi-pronged approach that targets senior managers, front line leaders and supervisors, and the workforce at large. There are four main components, starting with the Safety Leadership Workshop. Participants are taken through the theory and background of the Zero Injury Philosophy and then through a series of discussions and exercises aimed at building commitment and developing group and personal action plans. The second component involves the use of daily pre-start and weekly "toolbox" safety talks. These are short, focused sessions held at the crew level and led by the supervisor, where safety is the primary topic. The third element is the formation of safety teams, focused on proactive identification of hazards and their removal. The final component is a behaviour-based safety program, using peer-to-peer observation and feedback. To increase ownership and commitment, all aspects of the program are open to input from all employees and the exact program that results will be unique to each site. The support of dedicated professional safety personnel on the project is also essential to success.

Introduction

Many companies have adopted a philosophy towards health and safety that embraces, implicitly or explicitly, a belief that all workplace injuries and illnesses are preventable. Within Bechtel, this is summed up in the corporate statement as "Zero Incident Philosophy", or until recently "Zero Accident Philosophy." This philosophy, adopted in 1992, is based on a belief that all injuries and illnesses are preventable and therefore the only logical target is zero. Any other target would be tantamount to saying that it is acceptable to hurt people as part of getting the job done, which would be inconsistent with our values.

Many companies have a health and safety program based on some form of "zero injury" concept. Several commentators have observed that a zero injury target is impossible to achieve. Notable among these is Dr Geller, who has argued in his book *Working Safe*, that only two of the three basic causes of injuries can be controlled – that is, plant conditions and human behaviour (1996, p55). The third he describes as "internal human factors", or "brain cramps", and he argues that it is uncontrollable. Examples of "brain cramps" that he uses include: forgetting what you came into a room to get; failing to notice a sign post; daydreaming when you should be paying attention; dropping things. There are everyday occurrences, but could similar mental lapses also contribute to injury? If so, Geller continues, a zero injury target is unattainable and therefore will be a de-motivator and could actually be counter-productive of establishing a sound safety culture. (1996, p38).

Geller's argument is compelling. There is no sure way of controlled or eliminating the human factor. Yet, every injury or illness that the current author has seen, even if due to human factors, could have been prevented. That is, the specific human factor that was the primary cause, such as forgetting to tie off while working at height, may not have been avoided but something in the system, the environment or the plant could have been modified or removed to make the environment more "forgiving", as discussed by Reason (ref.). For example, fixed edge protection can be provided, or openings can be covered over. That is, with the benefit of hindsight admittedly, it is possible to identify at least one practicable preventative action for every injury or illness.

This may appear to some as a contradiction. On the one hand, we cannot control human factors and are unable to even predict the myriad ways they can be manifested, so we cannot prevent them from causing injuries. On the other hand, every injury that has occurred could have been prevented in some way, or at the very least the level of injury substantially reduced.

Bechtel's "Zero Incident Philosophy" implicitly recognises this dichotomy. Two of the stated objectives derived from the policy are "strive to eliminate all injuries and illnesses", and to ensure the use of "continuous improvement" to learn when injuries or illnesses do occur. The fundamental belief, or core value, behind the statement is that it is not acceptable for people to get hurt working for us.

When introducing and discussing the "Zero Incident Philosophy" it is important to address concerns over its meaning and validity. If people misinterpret it as some sort of feel good statement without real meaning it will be impossible to gain their commitment, which is the key to success of any program. For a company like Bechtel, that commitment must be present in the corporate management group and in every project manager and project team. It is one thing to say "we are committed", but how to we go about achieving and maintaining that commitment?

In this paper, we will concentrate on the efforts made to gain and sustain commitment at the project level. There are four distinct elements used here: the Safety Leadership Workshop; daily pre-start meetings and weekly toolbox meetings; a collaborative incident prevention team; and a behaviour-based safety program. Each element will be discussed in turn.

Safety Leadership Workshop

This workshop focuses on front line supervision and management on a project. Run as a highly interactive mix of learning modules and group work, it combines set material with information about the current reality of the project. Participants are encouraged to examine what they do as they lead the safety effort in their area and are challenged to see if there may be a better way.

The Safety Leadership Workshop consists of eight modules, usually run as two four hour sessions over two days, allowing participants to spend some time in the day doing their normal job. Each module consists, typically, of some basic presentation material following by one or more workshop exercises, conducted in small groups. All the ideas generated come from the participants, not from a text book or academic paper, with the facilitator drawing out ideas and building on them only when necessary. The modules are:

- Leadership Qualities, Behaviours and Responsibilities, where participants themselves identify the attributes of good leadership, discuss them and identify areas of their own leadership that could be developed
- Zero Incident Philosophy, in which the philosophy is discussed and participants debate whether or not all injuries are preventable. They then identify specific actions that can be taken on their project or area to help move towards a zero injury performance standard
- Safety Culture. The concept of "culture" is introduced and some stereotypes presented. Using these, the participants evaluate their project or area, following which they identify further actions that can be taken to move towards "world class" culture
- Impact of Injuries. This rounds out the first session by getting the participants to identify and hence realise the wider and longer term impacts of injuries to the injured person (including their family), the project itself, including costs, and on the community.
- Cause and Effect starts the second session and is a simple model to assist with incident investigation. Use of the model helps people identify the real or underlying ("root") causes of the incident so that they can make more effective recommendations
- Behaviour-Based Safety. In this session, participants are introduced to the A-B-C of human behaviour (activator-behaviour-consequences) and the need to manage consequences in order to drive safe behaviour is discussed at length. The application of the BBS program within the workplace is also discussed, if it is being used or soon to be implemented
- Personal Communications is the last formal learning module, and focuses on effective ways for leaders and supervisors to get the message about health and safety across to their people.

The workshop concludes with each participant developing a personal Leaders Plan for Change. Each person is challenged to make a difference by taking on board at least one change or improvement they will commit to as a result of the workshop. Some pick up a leadership skill to develop, for example, while others may identify a particular workplace practice that they will modify. It is emphasised, throughout the workshop, that for improvement in safety performance to occur, people must start doing something differently. The Leaders' Plan is their opportunity to take such action and become a catalyst for change in their area.

Through the SLW, we aim to ensure that all project leaders clearly understand the foundations of the Bechtel safety program. Leadership is covered specifically in the first topic only, but pervades the rest of the workshop. Throughout it, the participants – all leaders – are encouraged to examine their own approach, share their experiences, and identify changes they can make to improve safety.

While the workshop is a one day event, it is not intended to end there. With the leaders plan, each participants takes responsibility for change within their sphere of influence. Through further follow up work by site management and the use of performance evaluation and assessment, feedback and continued encouragement is provided. The underlying message – and challenge – is to take personal responsibility for health and safety and demonstrate this commitment through sustained and consistent actions.

Employee-Focused Health and Safety Meetings

The SLW focus is on front line leadership, enabling them to better lead the health and safety efforts in the field. A significant aspect of leadership at this level is how to best involve and empower the workforce in health and safety. One of the primary tools used here is the "STARRT" process – Safety Task Analysis Risk Reduction Talk. In this process, the crew leader (supervisor, foreman, leading hand) leads a short, focused discussion on health and safety at the start of the shift. The duration is typically five minutes, and the talk involves three basic components. First, how did we do yesterday? The leader encourages input from the crew on things that went well or not so well, and in either case works with the crew to see what can be learned. Of course, each crew member is encouraged to bring up any safety issue with the leader – or others in management – at any time during the day. However, this deliberate pause before a new work day starts provides a clear prompt to discuss any issues that may have been overlooked.

Second, the leader will go over the work for the day and ensure that each person understands their assignment, the work going on around them. This is the normal task assignment session that many work crews already undertake. It gets the crew looking forward after their brief review of the previous day. Third, then, the supervisor makes sure that all crew members understand the controls in place to ensure their safety and are satisfied with them. When the task is new or involves some new activities or changed conditions, the leader may use the "STARRT Card" (double-sided, see Figure 1) as a checklist to identify the hazards that may be present. The crew can then discuss the hazards present in the day's work and, most importantly, review the measures in place to control them. Crew members are encouraged to raise any concerns that they see and these are generally dealt with immediately by the supervisor and the crew working together.

Finally, the STARRT session ends with the supervisor checking for understanding among the crew members. Any issues that have been raised and need further attention or response, the leader will endeavour to resolve during the day. Where possible, feedback is given to the appropriate crew member(s) during that shift, or at the next STARRT meeting.

Supporting the aim of the STARRT process to involve and empower the workforce is the weekly Toolbox Safety Talk. This forum, which may run up to thirty minutes, has as its primary aim education and reinforcement. Each week, a new topic is presented relevant to safety on or off the job. Some key topics are repeated several times during the year, while others are seasonal or relate to the phase of the project. Employees are encouraged during toolbox meetings to ask questions and make suggestions. In some situations, crew members may take a lead role in presenting the topic for the talk.

SAFETY TASK ANALYSIS RISK REDUCTION TALK (STARRT) CARD

Supervisor:	Date:
Job Description:	
Primary Hazards:	
Location:	

ELECTRICAL				**EXCAVATION**				
Locked & Tagged	N/A	Y	N	Shored/Sloped	N/A	Y	N	
Try & Test	N/A	Y	N	Ladder Provided	N/A	Y	N	
Disconnected	N/A	Y	N	Daily Inspection	N/A	Y	N	
HAZARDS (BODY)				**PERMITS**				
Fall Potential	N/A	Y	N	Hot Work	N/A	Y	N	
Pinch Points	N/A	Y	N	Confined Space	N/A	Y	N	
Electrical Shock	N/A	Y	N	Breaking Process	N/A	Y	N	
Housekeeping	N/A	Y	N	Excavation	N/A	Y	N	
Slip-Trip	N/A	Y	N	Critical Lift Plan	N/A	Y	N	
Flying Particles	N/A	Y	N	Personnel Basket	N/A	Y	N	
Thermal Burns	N/A	Y	N					
Manual Lifting	N/A	Y	N	**EMERGENCY EQUIPMENT**				
Sharp Object	N/A	Y	N	Fire Extinguisher	N/A	Y	N	
				Safety Shower	N/A	Y	N	
HAZARDS (ENVIRONMENTAL)				Eyewash	N/A	Y	N	
Airborne Particles	N/A	Y	N	Permit Displayed	N/A	Y	N	
Vapours	N/A	Y	N	All Conditions Met	N/A	Y	N	
Hot/Cold Surfaces	N/A	Y	N	Evacuation	N/A	Y	N	
Hot/Cold Materials	N/A	Y	N	Assembly Area	N/A	Y	N	
Noise	N/A	Y	N					
Heat Stress	N/A	Y	N	**OVERHEAD WORK/FLOOR OPENING**				
				Fixed Barricades	N/A	Y	N	
PROPER EQUIPMENT				(Tape) Danger	N/A	Y	N	
Man Lift	N/A	Y	N	(Tape) Caution	N/A	Y	N	
Personal Basket	N/A	Y	N	Barricade Tags	N/A	Y	N	
Forklift	N/A	Y	N	Signs	N/A	Y	N	
JLG Lift	N/A	Y	N	Hole Cover/Cleat	N/A	Y	N	
Crane	N/A	Y	N	Handrail/Toe-board	N/A	Y	N	
Chainfall	N/A	Y	N					
Hand Tools	N/A	Y	N	**PROCESS EQUIPMENT**				
Hand Power Tools	N/A	Y	N	Valves Locked	N/A	Y	N	
Good Conditions	N/A	Y	N	Tags Hung	N/A	Y	N	
Operator Certificates	N/A	Y	N	Blinds Installed –	N/A	Y	N	
Proper Rigging	N/A	Y	N	– And Tagged	N/A	Y	N	
Current Inspection	N/A	Y	N	Isolations Tested	N/A	Y	N	
Trucks, Tractors, etc	N/A	Y	N					

STANDBY PERSON				**PPE**			
Confined Space	N/A	Y	N	Work Gloves	N/A	Y	N
Fire Watch	N/A	Y	N	Chemical Gloves	N/A	Y	N
Sandblast Person	N/A	Y	N	Anti-vibration Gloves	N/A	Y	N
Traffic Watch	N/A	Y	N	Slicker Suits	N/A	Y	N
				Foot Guards	N/A	Y	N
HAZARDS (CHEMICAL)				Rubber Boots	N/A	Y	N
MSDS's Reviewed	N/A	Y	N	Mono Goggles	N/A	Y	N
Chemical Burn	N/A	Y	N	Face Shield	N/A	Y	N
Skin/Eye Irritant	N/A	Y	N	Fresh Air	N/A	Y	N
Inhalation	N/A	Y	N	Ear Protection	N/A	Y	N
				Safety Harness	N/A	Y	N
WELDING				Burning Goggles	N/A	Y	N
Shields	N/A	Y	N	Hard Hat	N/A	Y	N
Fire Blanket	N/A	Y	N	Safety Glasses	N/A	Y	N
Fire Extinguisher	N/A	Y	N	Respirator	N/A	Y	N
Cylinders Secured	N/A	Y	N	Other	N/A	Y	N
Combustibles	N/A	Y	N				
Moved Sparks	N/A	Y	N				
Sparks Contained	N/A	Y	N				

PRINT EMPLOYEE NAME	EMPLOYEE SIGNATURE
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
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13.	
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15.	

Figure 1 - STARRT Card (front and back)

For both the STARRT and Toolbox talks, the key focus is on the prevention of injuries, illnesses and other losses through the active identification of hazards and implementation of appropriate controls. Employees – at all levels – are encouraged to challenge the status quo and ask whether there is a better, safer way. This openness is supported by leaders who are receptive to ideas and suggestions, willing to listen and to challenge the system themselves, and who provide timely feedback on the ideas given to them.

Zero Injury Team

Most sites – be they operations or construction – have some form of workplace health and safety committee. In some States they are compulsory under the applicable health and safety Act. For example, s86 of the Queensland Workplace Health and Safety Act requires an employer or principal contractor to establish a committee if request by a workplace health and safety representative or directed by the Chief Inspector. All too often, however, workplace health and safety committees become (or start out as) ineffective and marginalised. Reasons are many and varied – lack of management support, lack of training of committee members, disinterest among members, hidden agendas (union or management), lack of follow through by the committee members.

Health and safety committees (indeed, committees generally) have a bad name. Therefore we prefer not to have them. Instead, we form a "Zero Incident Team." This itself as a generic name, and sites are encouraged to develop their own more meaningful name. Regardless of the name, the makeup, intent and approach of the Team is different to the typical safety committee – it is not just a question of semantics.

With regard to make up, it takes a vertical slice through the organisation. The chair is usually the most senior manager on the site. It includes middle management representation, and of course representation from the front line workforce. The site safety professional may participate, but only in an advisory or facilitation role. This mix provides the "clout" that senior management bring, so that decisions and commitments (for example, to train or spend money) can be made on the spot. It

includes middle management in the process, which aids communication and builds trust (too often this group can feel alienated from both those above and those below). And it includes workplace representatives who ensure that the process stays grounded in reality and focused on the things that actually matter.

The objective is to keep the Team always focused on practical prevention and true process improvement. With the right mix on the team, decisions can be reached quickly and implemented immediately.

One of the concerns that front line workers often express is that no one ever listens or takes any action when they raise health and safety issues. Perception being reality, it is no good telling them that people do listen! To address this concern, teams like the Zero Incident Team need to ensure that they publicise their activities – frequently and loudly. Two examples of when this is necessary and how it impacts on gaining and sustaining commitment. First, it is important that people feel that it is worthwhile bringing an issue to the attention of the Team. Assume someone raises an issue with the team, which when they discuss it they decide – for sound reasons – to take no action on. If the person receives no feedback on this, he or she will assume the Team is a waste of time, just like any other safety committee anywhere else. That person tells a few others, who tell a few others, and the credibility of the Zero Incident Team is lost very quickly. On the other hand, if the issue is acknowledged – publicly or at least in private with the individual concerned – and the sound reasons for taking no action are discussed, at least the person will feel heard and, most likely, valued.

The other example is when someone raises an issue and action is taken, but nothing is immediately apparent. This may be due to a range of valid reasons, including issues of design, cost or schedule. There may be a need to undertake further study to determine the best way of solving the problem. However, although there may be much behind-the-scenes activity, nothing is apparent in the field. Those in the field again feel "waste of time" and when action is finally taken they may not associated it as a result of their idea or suggestion. Or, after a time, they start to agitate over the issue, which then gets fixed quickly, because the design (or other) issues had been solved in the interim. However, the perception in this case is that management only listens when you agitate. Again, letting people – not just the originator – know what is happening and how issues are being addressed gives immediate validation of the issue and recognition to the originator, while giving people a sense of the work required and being undertaken to fix the problem.

Thus the Zero Incident Team – or any safety team ("committee") – should provide clear communication of their activities, in terms of ideas raised and rejected, ideas implemented, and work in progress.

Behaviour-Based Safety

This element of the program is not unique to Bechtel and has been the subject of many recent conferences and papers. It is assumed that the reader knows the basics of the BBS approach, however an excellent text on the subject is Geller's book *Working Safe* (1996). Another good reference is Krause's work *The Behaviour-Based Safety Process* (1996).

In implementing BBS on a project, Bechtel world-wide uses the approach defined by Geller using material and techniques developed by his company Safety Performance Solutions, Inc (SPS). In this discussion, we will focus on the way Bechtel uses BBS on a site and integrates it into the rest of the health and safety program.

First it must be recognised that implementing BBS on any site involves a significant investment in training and the time of people to undertake observations and support the overall process. In the construction environment, characterised by high turnover and an average duration on site for any one person of less than one year, this is a substantial commitment. The full training program for an observer is around two days, with an expectation that each observer will spend anything up to half an hour a day, on average, doing observations.

Bechtel uses a peer-to-peer observation process, drawing observers from the trades and labour ranks. The physical act of observing – and being observed – coupled with the immediate feedback and discussion of safe and at-risk behaviours is the key part of the program. This is where the basics of human behavioural psychology are applied – in providing positive consequences soon after the behaviour occurs. Observers record safe and at-risk behaviours, as well as information about why the person believes they behaved that way.

It does not stop there, however. The observers themselves form a team (generically the Behaviour Observation Team) that meets regularly to review the data coming out of the observation process. In particular, the team looks for "barriers" to safe behaviour, as revealed by the comments of the people observed. For example, observers may note concerns with some manual handling practice and find that the response from those observed points to a training deficiency. The reality of many at-risk behaviours is that they are either "non-enabled" or "difficult" (Krause, 2000). A non-enabled at-risk behaviour would be failure to hold a handrail when, in fact, no handrail was provided. A difficult one would be using a ladder that was too short, as the right ladder was locked away elsewhere. In the author's experience, and in the research carried out by Krause, difficult and non-enabled behaviours occur at least as frequently as enabled at-risk behaviours (for example, failing to hold the handrail when it is provided). Within Bechtel, we consider factors that make safe behaviour difficult – or impossible – as barriers and it is our objective to identify and remove these. The behaviour observation team, by examining the data that they collect, assists with this.

To support the team of observers, we provide a "champion" from among the senior managers on site. This person lends support, guidance and, as required, authority to the team. The champion will attend team meetings where they try to identify trends and patterns that can point to barriers. The ES&H staff on the site, or other appropriate personnel, assist with basic analysis of the data and generally support the process. However, the observers themselves – representatives of the workforce at large – are the ones charged with developing recommendations for improvement based on the observation data. Once the observation team has identified an issue – a barrier – and developed a recommendation to deal with it, they take the idea to the Zero Incident Team. As discussed above, this team has the clout and representation from all levels to be able to turn recommendations into concrete action.

In conjunction with the formal peer-to-peer observations happening under the BBS process, all supervisors and managers on the site need to be familiar with the basic principles of behavioural safety. Training is provided to these people – ideally to all staff who may spend time in the field – so that they understand the basic behaviour model (Activator – Behavior – Consequences) and the importance role of consequences in motivating behaviour. All supervisory staff at all levels are encouraged to manage consequences as a way of driving behaviour, and the training ensures they understand that soon, certain and positive consequences are far more effective than discipline or punishment. It is also imperative that supervisors openly support the formal BBS program and actively help the observers to develop their skills in observation and feedback. The BBS program cannot work on its own.

Pulling it all Together

The above discussion has described four separate activities or tools. Each on its own can have an impact on the safety culture on a site. However, the key in gaining and sustaining commitment is to have all these initiatives – and any others – perceived as inter-related aspects of one factor – senior management commitment to the health and safety of all employees. It is not sufficient to talk the talk about safety. People must experience, and thereby believe – that their senior management truly care about health and safety for the sake of the people. This is a significant step and one that cannot be reduce to a simple formula. At the heart of it is honesty and integrity. The average person – or construction worker – will know when someone is insincere. All members of the management team, from the senior site manager to the front line supervisor, must demonstrate by their actions and their words that they are truly committed to safety.

How do we achieve this? First, it is not an easy task. There are people in construction, just as in any other industry, that pay lip service to safety. Build the plant, get the production, get the end result – this is all some people think about. But it is essential that we strive to get this clear alignment and

commitment at the management level. The Safety Leadership Workshop helps, and it is particularly helpful to run this early in the project just for the senior leadership/management team. However, it can really only be achieved through strong leadership and commitment from the top – the project manager or site manager. If the person in this position it not commitment, not really serious about health and safety, then it is virtually impossible to succeed.

When the people in the field and in lower ranks see that their senior leaders are truly committed, are prepared to listen and help solve problems, are prepared to support safety over production in the short term, then the above initiatives can really work. If, on the other hand, people see that what their senior leaders are really interested in and only ever talk about is production, no amount of rhetoric or program initiatives will convince them that safety is important. People need to see – and will respond to – consistency between words and actions. Management must "walk the talk."

This is the important battle. Get the senior management team – preferably all without exception, but at the very least a very substantial majority – truly committed to health and safety, then the rest will flow naturally. How do we gain and sustain commitment at this level? There is no easy or straightforward answer. Consistency of message from the corporate level; reinforcement of the desired behaviours and demonstrated values; support from above for all actions that demonstrate that health and safety is important; establishing clear policy and guidance for health and safety; reward for performance consistent with the expressed company values. All of these are necessary and appropriate. In essence, senior corporate management needs to "walk the talk" also.

At the corporate level, health and safety are consistently on the agenda. Our aim is to ensure that all employees understand the value that the company places on health and safety. At the simplest level, we strive to have all departments start each meeting with a health or safety message or topic. The people in the finance department, for example, have taken this to heart and start all internal meetings with a brief message on safety or health.

At another level, we have the corporate "ES&H Leadership Team." This is comprised of the most senior leaders in the company, a site manager and a site ES&H adviser, supported and facilitated by the corporate ES&H manager. The Leadership Team is responsible for policy and strategy direction. Kind of a corporate "think tank" on safety always looking forward, but grounded in reality by virtue of the site representation. The Leadership Team, for example, decided that the monthly safety report – originally distributed to a select group of managers – should be circulated to all employees. This has been happening for nearly one year, with the result that more people in the company are now aware of the importance we place on health and safety, what our current performance is like, and the proactive – and reactive, when necessary – steps that are being taken to improve safety.

Conclusion

The message is actually quite simple – as the saying goes, this is not rocket science. Simply demonstrate commitment through consistency of action, from the highest corporate level down through individual project and site management to the front line supervisor. However, "simply demonstrate commitment" is a deceptively simple phrase. It requires a degree of diligence and, initially at least, conscious effort to achieve.

Once the commitment is there and demonstrated a the highest level, it is enabled at the next level down. In fact, if a manager does not see commitment to health and safety in subordinate staff, the first question should be "what am I doing wrong?", not "what's wrong with them?"!

Gaining and sustaining the commitment of employees to health and safety starts – and ends – with senior management and their leadership style and approach. If that style demonstrates their sustained commitment to health and safety, under all circumstances, then those below them will usually respond in kind.

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