ZERO ACCIDENT PROGRAM

US Army Corps
of Engineers®
Albuquerque District

Zero Accidents
Zero Tolerance

APRIL 2014

Together we can achieve excellence in safety

Introduction

The construction industry in the United States accounts for approximately 10 percent of the GNP with an annual dollar volume of about $450 billion. Five percent of the nation's workforce is employed in the construction industry, yet that 5 percent experiences a disproportionate 20 percent of all traumatic occupational fatalities and 12 percent of the total number of disabling injuries. This corresponds to 6 to 10 fatalities on construction sites every working day throughout the U.S.

Estimates of the total cost of injury for the $450 billion U.S. construction industry range from $7 billion to be as high as $17 billion annually.

Most contractors understand that a worker's injury has a direct effect on insurance premium cost, but there are also "indirect" costs that result. These indirect costs, which are often overlooked, have been found to be more detrimental to the overall expense picture than the direct expenses.

The problem of not knowing how to eliminate worker injury, has been pervasive until recent times. A new concept is emerging called **zero injury.** Zero injury means that, essentially, all serious injury to workers can be successfully prevented. The obvious benefits to owners and contractors are the elimination of unnecessary indirect costs and reduction of worker's compensation insurance premiums by as much as 80 percent. That translates to lower construction costs for owners and higher profit margins for contractors.

The Albuquerque District, U.S. Army Corps of Engineers established a construction Safety "Zero Accident" Task Force to develop a plan for implementing a strong safety program for Corps of Engineers construction. This pamphlet explains the background and implementation plan for a Zero Accident Program in the Albuquerque District.

This pamphlet utilized research and reports published by the Construction Industries Institute's Zero Accidents Task Force.

Contents

Chapter 1: The Zero Injury Concept

Why use "Zero" Lost Workday Cases?

Many examples can be found in the U.S. where millions of hours are worked with no resulting "lost workday" injuries. This being the case, "Why not set your goal at zero lost workday cases?"

The continual rise in premium rates for workers' compensation insurance in many states is alarming. Workers' compensation premium rates, as a percentage of direct labor, are extremely high.

Striving for the goal of zero injuries can provide immediate rewards. One of the problems in eliminating injury is that often the workers simply do not believe that the company is truly serious about safety. When management clearly sets forth the *expectation* for zero injuries, the workers can then begin to believe that the company is truly serious about safety. From the standpoint of worker psychology, zero is the only supportable goal. Any other goal leaves the subtle message that injuries will occur and that injuries are acceptable. All would agree that the importance of the psychological aspects of a safety program is paramount in reducing injury frequency.

Employers need to ensure that employees have a clear understanding that the safety goal of each employee, each crew, each project, and the corporation, is zero injuries.

Set a Zero Goal for Recordables

Employees should clearly understand that the goal is to eliminate injury, not hide injury for the appearance of reaching zero. The better one's true safety results become, the lower the recordable rate will be.

The New Safety Attitude

An employee safety performance mentality of zero injury is a worthy objective. A significant safety attitude change in the worker comes with the goal of zero injuries. The concept is a socially responsible management attitude toward the ongoing health of a business's most important asset, its employees.

More and more owners and contractors are realizing that zero lost workday injury is achievable, and they are taking that first step - telling their employees that zero injury is the expectation.

Chapter 2: Who Pays?

In evaluating the total cost of injury one can readily conclude that most Safety Programs more than pay their own way. In fact, experience has shown the more successful programs for the larger projects or work crews return profits up to 10 times the cost to the contractor .

Chapter 3: The Cost of Accidents

As a matter of business survival, every contractor must understand the cost implications of a poor safety and health program.

The Direct Expense

Worker's compensation insurance purchased by the employer usually is the principle device used to cover the direct expense of injury. These include:

Medical treatment
Hospitalization where required
Prescription drugs
A weekly wage replacement sum (indemnity)
Insurance company administrative costs and profit
Rehabilitation expenses

The Indirect Expense

Researchers have found that indirect expenses are often more detrimental to the overall expense picture than direct expenses. The Construction Industries Institute Safety Task Force found in an earlier study that the indirect expense of injury ranged from 2 to 20 times the direct expense.

In the Construction Industries Institute research, the indirect costs were found to average $21,000 (including legal expense) for a lost workday case and $1,100 for a recordable.

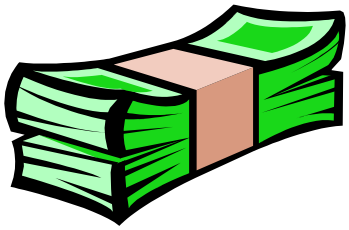


Table 1. Indirect Expense

THE HIDDEN COSTS of ACCIDENTS

DIRECT COSTS	Medical
	Compensation
	Time lost from work by injured
	Loss in earning power
	Economic loss to injured's family
	Lost time by fellow workmen
	Loss of efficiency due to break-up of crew
	Lost time by supervision
INCIDENTAL AND HIDDEN COSTS OF ACCIDENTS	Cost of breaking in new man
	Damage to tools and equipment
	Damage to tools and equipment
	Time damaged equipment is out of service
	Spoiled work
	Loss of production
	Spoilage-fire, water, chemical, explosives, etc.
	Failure to fill orders
	Overhead cost (while work was disrupted)
	Miscellaneous *(There are at least 100 other items of cost that appear one or more times with every accident.)*

"Like the iceberg, hidden costs of accidents are not visible on the surface, but are there just the same."

Chapter 4: Calculating the Cost of Injuries

No standardized methods are available to determine the total expense of worker injury. The total costs include the following expenses:

Necessary
Unnecessary
Direct
Indirect

The following paragraphs explain the important features of the total cost calculation.

Direct Wages

Worker's compensation premiums are calculated using only the direct portion of wage expense. This excludes the cost of any fringe benefits.

Experience Modification Rate (EMR)

Experience rating is a procedure utilizing past insurance experience of the policyholder to forecast or predict future losses. The result of the rating is an EMR which is simply a multiplier that is applied to the base premium resulting in one of the following three outcomes:

a. Base premium will increase (EMR> 1.0, poor experience history);
b. Base premium will remain the same (EMR of 1.0); or
c. Base premium will decrease (EMR< 1.0, good experience history).

In recent times some owners and contractors have adopted the policy of limiting bidders to those who have an EMR below a certain threshold level. (See Appendix A for a detailed explanation of EMR). Table 2 shows EMR ratings for contractors in the construction industry based on a study by Stanford University.

Table 2. EMR Ranges and Ratings

EMR	RATING	% OF TOTAL
1.30 - 2.05	Poor	16
1.05 - 1.29	Inadequate	20
0.82 - 1.04	Fair	29
0.72 - 0.81	Effective	20
0.50 - 0.71	Superior	15

Users of EMR should realize that the calculation reflects losses for a three-year period after excluding the most recent year. For a 1994 EMR, losses for 1990, 1991, and 1992 are used. Losses for 1993 will not be used until the next determination, when the year 1990 will be dropped.

Impact of Injuries on Workers' Compensation Premiums

To illustrate the cost savings of preventing worker injury, the following example is provided (see Table 3). In this example we compare the Unsafe Construction Company to the Safe Construction Company.

Both contractors perform the same type of work and therefore have the same manual rating. The manual rating simply means that all insureds are grouped according to their business operation or classification; the losses of the group are added together; and an average cost obtained. Applying the manual rate (cost of insurance per $100 of payroll) a premium of $90,000 is obtained for both companies. The EMR is then applied, creating a sizeable difference between the two companies. In some states insurers can offer a downward adjustment to the premium, called a Deviation, for companies with good accident histories. In this case, the Safe Construction Company received a 10% Deviation. The gap continues to widen. Schedule Rating is another adjustment that is offered in some states, to contractors with good safety programs. Here, the Safe Construction Company received an additional 12% reduction to their premium - the Unsafe Construction Company received none. A Premium Discount is applied to both contractor's premiums. This discount is based on premium size only (the larger the premium, the greater the discount). Dividend Plans return money back to the insured at the expiration of their policies if the insured's actual loss experience was good. No Dividends would be paid for bad loss experience. Again, the Safe Construction Company received a 15% reduction to their premium, whereas the Unsafe Construction Company received none.

In the end, the Unsafe Construction Company will pay $45,800 more in worker's compensation premiums per year. If the Unsafe Construction Company is to stay competitive with the Safe Construction Company, the $45,800 will come out of his profit. Also keep in mind that these are <u>direct</u> costs only!

Table 3

UNSAFE CONSTRUCTION COMPANY	SAFE CONSTRUCTION COMPANY
Manual Premium $3.00 Manual Rate $90,000 Premium	*Manual Premium* $3.00 Manual Rate $90,000 Premium
EMR = 1.15 $3.45 Manual Rate $103,500 Premium	*EMR = 0.85* $2.55 Manual Rate $76,500 Premium
Deviation – None $3.45 Manual Rate $103,500 Premium	*Deviation - 10% deduct* $2.29 Manual Rate $68,850 Premium
Schedule Rating – None $3.45 Manual Rate $103,500 Premium	*Schedule Rating - 12% deduct* $2.02 Manual Rate $60,500 Premium
Premium Discount $3.11 Manual Rate $93,300 Premium	*Premium Discount* $1.87 Manual Rate $56,000 Premium
Dividend – None $3.11 Manual Rate $93,300 Premium	*Dividend - 15% deduct* $1.58 Manual Rate $47,500 Premium
FINAL RATE - $3.11 *FINAL PREMIUM - $93,300*	*FINAL RATE - $1.58* *FINAL PREMIUM - $47,500*

Note: Payroll size for both companies is $3,000,000.

Chapter 5: Albuquerque District Corps of Engineers' Support and Promotion of the Zero Injury Concept

Why?

Obviously as an owner or a representative of an owner, the Albuquerque District essentially funds the construction costs. As it was proven earlier, as a contractor works less safely, our costs are higher. Needless to say, if we utilize safer contractors, our construction costs will be significantly less.

How?

The Albuquerque District Corps of Engineers in its continual pursuit of excellence in safety, is taking steps to incorporate recommendations of the Construction Industries Institute Safety Task Force into its Civil and Military construction programs.

As a result, our construction contract documents will contain implementation adjustments. In addition, the specifications as well as the plans will be clearly marked to indicate that the Zero Injury Program will be utilized on the contract.

The contract may include new bid items for safety incentives.

The safety technical provision of the contract specifications will incorporate the Zero Injury Program.

The Albuquerque District will use each contractor's Experience Modification Rate (EMR) and OSHA/Bureau of Labor Statistics incidence and severity rates in the contractor selection process for competitively bid as well as Small Business Administration, 8(a) negotiated contracts.

Prior to awarding any subcontract, the prime contractor will be required to furnish to the contracting officer, the EMR of the proposed subcontractor. Should a prime contractor or subcontractor (at any tier) have an EMR of 1.05 to 1.29, a meeting with the Contracting Officer prior to award will be required to explain how they intend to maintain an accident-free work site.

Finally, after completion of the contract the contractor will be evaluated on its ability to meet the Zero Injury goal.

In Conclusion

Zero injury performance is achievable. Owners, contractors, sub contractors and labor representatives must establish and maintain an expectation that all injury can be eliminated.

CHAPTER 6: Recommendations for Contractors

- ❑ *Adopt the "Zero Injury" philosophy, beginning with the CEO who sets the expectation that worker injury is unacceptable on all work.*
- ❑ *Create a culture where all employees at all levels accept ownership of the safety performance objective of "Zero Injuries." The CEO sets the expectation and empowers all employees to do what is necessary to reach zero injury performance.*
- ❑ *Recognize that profit lost through worker injury is not covered by insurance.*
- ❑ *Institutionalize a comprehensive basic safety process using some of the 170 safety techniques identified by the research.* ***See Appendix B.***
- ❑ *Establish specific contract requirements defining the roles and responsibilities of all sub contractors involved in reaching the goal of zero injury.*
- ❑ *Define explicitly the authorities and responsibilities regarding workplace safety of all personnel (leaders and workers) involved in the project.*
- ❑ *Implement the five High-Impact Zero Injury Safety Techniques.* ***See Appendix C.***
- ❑ *Understand the high cost of worker's compensation is driven by worker injury and that achieving zero injury performance is a key component of responsible management for profit. Understand EMR and how to interpret it. Refer to* ***Appendix D*** *for steps to reduce your EMR.*
- ❑ *Implement a "Return-to-Work" Program to eliminate or reduce lost time due to injuries.*
- ❑ ***See Appendix E****.*
- ❑ *Conduct a safety self-assessment. See Construction Industries Institute Source Document 88, Construction Safety Self-Assessment Process.*
- ❑ *Embrace the "Zero Injury" philosophy with the owner becoming an active participant and promoter of the concept.*
- ❑ *Insure that subcontractors are active participants and supporters.*

References

The following Construction Industries Institute (CII) publications were used to develop this pamphlet. More detailed information on the subjects presented in this pamphlet can be obtained from these documents. To obtain copies, send your requests to:

Construction Industry Institute (CII)3
3208 Red River, Suite 300
Austin, Texas 78705-2650
Phone (512) 471-8155
Fax (512) 499-8101

- **Special Publication 32-2**
- **entitled Zero Injury Economics**
- **Source Document 38**
- **entitled Subcontractor Safety as Influenced by General Contractors on Small and Medium Sized Projects**
- **Source Document 86**
- **entitled Zero Accident Techniques**
- **Source Document 88**
- **entitled Construction Safety Self-Assessment Process**
- **Publication 32-1**
- **entitled Zero Injury Techniques**
- **Publication 13-1**
- **entitled Managing Subcontractor Safety**

Contractors can obtain the following publications from the following web addresses:

U.S. Dept. of Labor, Occupational Safety and Health Administration publication entitled Construction Cost-Time Injuries: The U.S. Army Corps of Engineers Data Base 1984-1988.
http://www.osha-slc.gov/Publications/100most.pdf

U.S. Dept. of Labor, Occupational Safety and Health Admin publication entitled The 100 Most Frequently Cited OSHA Construction Standards in 1991: A Guide for the Abatement of the Top 25 Associated Physical Hazards.
http://www.osh.net/directory/safety/safety_02.htm

Appendix A*

Experience Modification Rates

Introduction

The Experience Rating Plan is an integral part of your final cost for workers' compensation. It offers a method for tailoring the cost of insurance to match the characteristics of an employer. It gives the employer an opportunity to affect his own cost through measurable and meaningful cost saving programs. Since the plan is intended to measure departures from the average, it must make an actuarially valid comparison of the individual employer's experience with that expected for others of the same classification.

What is experience rating?

This question is often asked by various parties, especially the policyholder who is the ultimate beneficiary of experience rating. Simply stated, experience rating is a procedure utilizing past insurance experience of the individual policyholder to forecast or predict future losses.

Since experience rating offers the prospect of a premium reduction, it provides an incentive for employers to develop safety programs and accident prevention procedures. Thus, experience rating benefits employers by promoting occupational safety.

How the plan operates

Experience rating is a *mandatory* plan that applies to all insured that qualify for experience rating. The experience ratings are not made by the insurance carriers, but are computed by the appropriate rate service organization, such as the National Council on Compensation Insurance. Experience rating is therefore a standard measure which can be used by all.

Generally speaking, the employer must have been in business for at least two consecutive policy years to be experience rated. For example, an employer with a policy that renews on January 1, 1994 will have an experience rating that uses the injury experience arising under policies for the three years ending December 31, 1992. Data on injuries which occurred during the 1993 policy are not available to the rate service organization when the 1995 modification is being calculated. The next renewal, on January 1, 1995, will use these 1993 claims, while dropping the oldest of the three-year period mentioned above. This constant updating assures a stable historical record for the individual employer, while also using the most recent available reflection of operating characteristics. In this way, meaningful changes in safety programs or improved technology can be reflected in the costs paid by an employer.

What does experience rating do?

Basically, insurance is the spreading, or sharing, of the cost of a loss by members of a group who are likely to experience the loss. While the cost and probability of injuries for the *whole* group can be predicted with a fair degree of accuracy, it is impossible to determine which member of the group will actually be responsible for these costs. This is why insurance exists.

Manual rating simply means that all insureds are grouped according to their business operation, or classification; the losses of the group are added together, and an average cost is obtained. Since by design, manual rating does not recognize the individual quality of each employer, the technique of experience rating is utilized to improve the prediction of future costs for the employer.

Consequently, the two primary benefits of experience rating are:

1. It tailors the cost prediction and, hence, final premium cost to the individual insured more closely than does the manual rating, and;

2. It provides an incentive for loss prevention which is absent in manual rating.

Characteristics of experience rating

One of the significant features of experience rating is that the *cost* of a specific accident is often fortuitous and statistically less predictable than the fact that the accident *occurred*. For example, the survivor benefits for a young worker in his 20's leaving a widow and three children would be considerably greater than the survivor benefits for a worker in his 50's leaving no dependents. The important fact is that the accident did occur, thus the experience rating plan ***gives greater weight to accident frequency than to accident severity.***

This reliance on accident frequency also measures risk desirability. For example, compare the employer with one loss of $40,000 during the rating period with another employer of about the same size with 15 accidents, each of $3,000 per claim, totaling $45,000. Which business is a better insurance risk and which one would be expected to develop more claims in the future?

Thus through experience rating one can develop a clear picture of one’s past accident frequency of claims.

****From ABC's of Revised Experience Rating, 1993, National Council on Compensation Insurance, Inc. Reprinted Inc. Reprinted with permission.***

Appendix B

Zero Injury Techniques Checklist

Total Commitment to Zero Accidents

- ❑ Construction company management's commitment to safety has visibility
- ❑ Project safety goals and objectives developed
- ❑ Project safety goals communicated to all employees
- ❑ Funds allocated for project safety
- ❑ Construction company has corporate safety manual
- ❑ Construction company has corporate safety committee
- ❑ Regular meetings of corporate safety committee
- ❑ Formal project safety program required by owner
- ❑ Active participation of owner in construction company safety program
- ❑ Construction company has project safety committee
- ❑ Regular meetings of project safety committee
- ❑ Participation of owner in project safety meetings
- ❑ Owner compliance with project safety rules
- ❑ Other contractor compliance with project safety rules
- ❑ Safety suggestion system implemented on project
- ❑ Effective communications amongst personnel on project
- ❑ Communication through bulletin boards
- ❑ Communication through posters
- ❑ Communication through newsletters
- ❑ Project well coordinated
- ❑ Work permit systems used on the project
- ❑ Project emergency plan generated

Project Safety Manual

- ❑ Project safety manual provided
- ❑ Project safety rules developed
- ❑ Handbook of project safety rules
    - ❑ Separate book for project safety policies and procedures

Pre-hire and Pre-assignment Screening and Placement to Match Need

- ❑ Pre-hire screening done to match to job requirements
- ❑ Pre-placement physical screening done
    - ❑ Partial physical screening done on project site

- ❑ Complete physical screening done on the project site
- ❑ Partial physical screening done off-site
- ❑ Complete physical screening done off-site

- ❑ Past safety performance used to select managers
- ❑ Past safety performance used to select supervisors

Safety Responsibility and Accountability

- ❑ Managers held accountable for safety on the project
- ❑ Supervisors held accountable for safety on the project
- ❑ Workers held accountable for safety on the project
- ❑ Safety responsibilities in writing for managers
- ❑ Safety responsibilities in writing for supervisors
- ❑ Safety responsibilities in writing for workers
- ❑ Construction company has disciplinary policy
  - ❑ Different levels of discipline used
- ❑ Written warning system
- ❑ Verbal warning system

Use of Safety Statistics for Awareness, Accountability and Process

- ❑ Knowledge of workers, compensation premium
- ❑ Knowledge of OSHA recordable incident rate
- ❑ Knowledge of OSHA Lost Work Day Rate
- ❑ Knowledge of construction company EMR
- ❑ Knowledge of lower tier contractors' EMR
- ❑ Knowledge of most frequent injuries on the project
- ❑ Policy for written project safety records
- ❑ Review of OSHA records of lower tier contractors
- ❑ Records kept of certification of personnel
- ❑ Records kept of safety training
- ❑ Records kept of danger tags/locks
- ❑ Records kept of safety inspections

Awareness and Tracking of Direct and Indirect Safety Related Costs

- ❑ Safety related costs tracked
- ❑ Accident costs tracked
- ❑ Accident costs reported to top management
- ❑ Knowledge of costs of accidents with injury
- ❑ Knowledge of costs of accident without injury

Safety Related Meetings

- ❑ Safety discussed at project review meetings
- ❑ Safety meetings held on the project for supervisors only
- ❑ Safety toolbox talks held on the project
  - ❑ Tool box talks held weekly
  - ❑ Agenda made for tool box talks
  - ❑ Attendance taken for tool box talks
- ❑ Involvement in other contractors' safety meetings

Hazard Analysis Prior to Project, Work, Task

- ❑ Hazard analysis conducted prior to beginning of project
- ❑ Hazard analysis conducted prior to new work of the day

Designated Person On Site to Coordinate Safety

- ❑ Full time safety director
- ❑ Full time designated person for safety on the project

Contractor Safety Prequalification (Including subcontractors)

- ❑ Contractors on the job pre-qualified based on safety records
- ❑ Safety provisions part of contract between construction company and owner
- ❑ Safety provisions part of contract between construction company and other contractors

Safety Incentive Program

- ❑ Written incentive program includes project safety
  - ❑ Incentives-provided by construction company
- ❑ Monetary incentives awarded on the project
- ❑ Other incentives awarded on the project
- ❑ Spot incentives awarded by construction company
  - ❑ Spot incentives received by managers
  - ❑ Spot incentives received by supervisors
  - ❑ Spot incentives received by workers
- ❑ Milestone incentives awarded by construction company
  - ❑ Milestone incentives received by managers
  - ❑ Milestone incentives received by supervisors
  - ❑ Milestone incentives received by workers
- ❑ End of project incentives awarded by construction company
  - ❑ End of project incentives received by manager

- ❑ End of project incentives received by supervisors
- ❑ End of project incentives received by workers

❑ Cents per work-hour incentives awarded by construction

- ❑ Cents per work hour incentives received by managers
- ❑ Cents per work hour incentives received by supervisors
- ❑ Cents per work hour incentives received by workers

New Employee Orientation

- ❑ New Employee safety orientation conducted on the project
- ❑ Owner involved in the new employee safety orientation
- ❑ Safety orientation held once before going to work area
- ❑ Periodic safety orientation conducted during the project
- ❑ Video taped presentation made during safety orientation
- ❑ Face-to-face presentation made during safety orientation
- ❑ After orientation safety handbooks are given to participants
  - ❑ Participants required to sign an acknowledgment of receipt and understanding
- ❑ Orientation includes information on disciplinary policies
- ❑ Orientation includes information on reporting insurance claims
- ❑ Orientation includes information on safety meetings
- ❑ Orientation includes information on job site fire prevention
- ❑ Different safety orientations held for different levels of persons

Formal Classroom Safety Training

- ❑ Managers receive formal safety training on the project
- ❑ Supervisors receive formal safety training on the project
- ❑ Workers receive formal safety training on the project
- ❑ Lower tier contractors receive formal safety training on the project

Accident/Near Miss Investigations

- ❑ Accident investigations conducted on the project
  - ❑ Investigation done of accidents with injury
  - ❑ Investigation done of accidents without injury
  - ❑ Investigation done of Near Misses
  - ❑ Investigations done of first aid cases
  - ❑ Investigation done of exposure hours
  - ❑ Investigation done of property damage
- ❑ Line management reviews results of accident investigation on the project
- ❑ Top site management reviews results of accident investigation on the project
- ❑ Safety department reviews results of accident investigation on the project

- ❑ Accident with injury reported to home office
- ❑ Accidents without injury reported to home office
- ❑ Near misses reported to home office
- ❑ First aid cases reported to home office
- ❑ Exposure hours reported to home office (work-hours/injuries and incident rates)
- ❑ Property damage reported to home office
- ❑ Project accident review team established for all accidents and near misses
    - ❑ Lower tier contractors participate in project accident review team
- ❑ Accident findings communicated to all projects

Substance and Alcohol Abuse Program

- ❑ Substance and Alcohol Abuse Policy developed for the projects
    - ❑ Substance and Alcohol Abuse Policy administered to all employees
- ❑ Lower tier contractors required to have substance and alcohol abuse program
- ❑ Screening done for alcohol
- ❑ Screening done for drugs
- ❑ Screening done at pre-hire
- ❑ Screening done for cause
- ❑ Screening done at random
- ❑ Screening done post-accident
- ❑ Inspections conducted for contraband
- ❑ Employee assistance program exists for the project

Safety Performance Reviews, Inspections and Audits

- ❑ Manager safety performance evaluated at regular intervals
- ❑ Supervisor safety performance evaluated at regular intervals
- ❑ Worker safety performance evaluated at regular intervals
- ❑ Safety performance evaluations communicated at regular intervals to mangers
- ❑ Safety performance evaluations communicated at regular intervals to supervisors
- ❑ Safety performance evaluations communicated at regular intervals to workers
- ❑ Review of improvements of safety performance on the project
- ❑ Safety inspections other than audits performed
    - ❑ Safety inspections other than audits performed daily
    - ❑ Safety inspections other than audits performed weekly
    - ❑ Safety inspections other than audits performed monthly
    - ❑ Safety inspections other than audits performed as needed
- ❑ Safety inspections conducted of lower tier contractors
- ❑ Safety audits on project conducted by owner only
- ❑ Safety audits on project conducted by construction company
- ❑ Safety audits on project conducted by insurance company

- ❑ Safety audits on project conducted by consultants
- ❑ Lower tier contractors required to conduct safety audits

Empowerment of Employee to Act on Safety

- ❑ Work stopped by employee for safety reasons. Employee supported and protected by management.
- ❑ Employees encouraged to make recommendations concerning safety policy and procedure

Post-Injury Case Management

- ❑ Injured employee escorted to medical facilities by construction company
- ❑ Medical facilities provided on project site
  - ❑ Medical facilities provided on project site by owner
  - ❑ Medical facilities provided on project site by construction company
  - ❑ Medical provided on project site are contracted
- ❑ Designated medical facilities available offsite
- ❑ Designated medical facilities available offsite are contracted
- ❑ Post injury follow-up done by construction company
- ❑ "Return to Work" policy established for the project by the construction company

Appendix C

Research conducted by the Construction Industry Institute's (CII) Zero Accident Task Force identified techniques used by those contractors achieving zero accidents in project work. Twenty-five projects were examined and 482 project personnel were interviewed, resulting in three databases. The CII found five "High-Impact Zero Injury Techniques" that were dominate in the group of projects achieving safety excellence. These techniques have the potential to produce the greatest influence in achieving zero injury safety performance. The techniques and the most significant sub-elements are as follows:

1. Safety Pre-Project/Pre-Task Planning

Pre-Project

- ❑ Safety goals
- ❑ Safety person/personnel
- ❑ Pre-placement employee evaluation

Pre- Task

- ❑ Task hazard analysis
- ❑ Task training

2. Safety Orientation and Training

- ❑ Site orientation
- ❑ Owner involved in orientation
- ❑ Safety policies and procedures
- ❑ Project specific orientation
- ❑ Formal safety training

3. Written Safety Incentive Program

- ❑ Cents per hour for workers
- ❑ Spot cash incentives used with workers
- ❑ Milestone cash incentives given to workers
- ❑ End of project incentives given to workers

4. Alcohol and Substance Abuse Program (ASAP)

- ❑ Screening done for alcohol and drugs
- ❑ Screening conducted at random
- ❑ Inspections for contraband conducted
- ❑ Post accident screening done for all employees
- ❑ All project contractors have ASAPs

5. Accidents/Incidents Investigations

- ❑ Incidents investigated

- ❑ Incidents reported to home office
- ❑ Accidents without injury investigated
- ❑ Project accident review team established for all accidents or incidents
- ❑ Project work exposure hours and safety statistics reported to home office

Appendix D

Steps to Gain Control

Contractors having a higher than desirable EMR can take a number of steps to reduce the EMR. In addition to setting out to reduce injury frequency, which is vital, a number of other steps will assist the process.

First Step: Get With Your Carrier

Request a copy of your experience rating form. You may well be the first client who ever asked an insurance agent for this information. At first they may want to defer you by saying that they are doing all they can. They then may want to know just what it is you want. They may be getting an education as you go along. Just repeat your request, explaining what you are looking for and ask them to get the information for you. They may have to call the regional office and get back to you.

Second Step: Audit Your Loss Run

Obtain a copy of your current injury loss history. In the insurance industry, this is known as a "loss run." Audit this information for accuracy and reasonableness of loss reserves on a case by case basis. Review in detail all cases where injured employees are drawing workers' compensation wage benefits.

Further analyze:

*Types of injuries
*Cases that are still open
*The injured currently working
*The reserves set aside, and determine if they're reasonable based on case details
*The final costs, which should be reflected in each closed case rather than an estimate of the reserves needed. Closed cases need no reserves.

Third Step: Review Your Experience Rating Form

*Review your most recent year Experience Rating Form. This is the information used by the insurance company to calculate your current EMR.
*Ensure that all losses recorded reflect the latest information regarding injuries.
*Ensure that you understand how the EMR was calculated and that it accurately reflects the trades involved in your work.
*Calculate the average cost per disabling injury.
*In calculating your average, consider a disabling injury as one where the injured employee drew workers' compensation wage replacement benefits (known as indemnity). This average will provide an idea of how much profit will be lost when the next disabling injury occurs. Nothing is

more sobering than to know that on the occurrence of the next disabling injury an average of $30,000 to $60,000 will be taken from the bottom line. Your cost will be 30 to 40 percent more than the average when you allow for insurance company expenses of handling claims, overhead, and profit.

Fourth Step: Establish the Zero Goal in Your Company

Obtain all the information you can from the Construction Industry Institute's zero injury research. Have a meeting with your key personnel and explain what needs to be done. Give them the material to read and schedule another meeting to address what new things your company will be needing to do to begin a cultural change. Communicate these new goals to your employees.

Fifth Step: Install A Case Management Program

When an injury occurs, have a specific plan in place to handle each injury.

The starting place is found in the work "care." Treat an injured employee just as you would treat a member of your immediate family.

1. Establish a relationship with a local doctor. Express the fact that you care about the injured. Let the doctor know:

   -That you have insurance.
   -That you want the best of care.
   -That you want your employees to be working if they possibly can without jeopardizing their health.
   -Insure that the doctor is willing to work with you in achieving your objectives.

2. Have a management representative take the injured employee for medical treatment or accompany the injured if an ambulance is used. Inform the family. Stay with the injured, if permissible, as treatment is administered.

3. Understand what any activity restrictions really mean in practical terms and provide alternative productive work for the injured if they are physically able.

4. Insure that the injured adheres to the doctor's directives regarding follow-up treatment. Assist in all ways possible. Remember, doctors frequently advise that workers will recover faster by working, even if the work activity is restricted.

5. Be alert to the opportunity for employees in the past to return to work doing a job where their physical impairment will not hamper their ability to do the work. Be careful not to expose the employee to a condition where injury may occur due to the impairment. Many employees would rather be working than drawing only a partial wage from workers' compensation. In some cases, employers have recovered millions of dollars in reserves by following this procedure.

6. If an employee cannot return to work, maintain frequent contact with the injured employee and monitor their progress.

7. Refer to Appendix E on how to establish a "Return-to-Work" program.

8. The Workers' Compensation Administration of the State of New Mexico provides several publications, free of charge, covering all aspects of the state workers' compensation system for employers and workers. To obtain the free publications write to:

Workers' Compensation Administration
P0 Box 27198
Albuquerque, New Mexico 87125

Sixth Step: Implement the Zero Injury Techniques

Insure that you are implementing the recommendations in Construction Industry Institute's Publication 32-I, Zero Injury Techniques.

Appendix E

Return-To-Work Program

Introduction

A Return-to-Work program is a coordinated effort to return an injured employee to work as soon as possible after an injury. This effort involves your company for providing work for the injured worker; a designated physician for providing appropriate and timely releases for work; rehabilitation providers for performing job analyses of newly assigned and "regular" jobs and for solving problems as they occur. The injured employee benefits by returning to work at your company as soon as possible thus minimizing the disruption of his/her life while maintaining seniority and any benefits such as vacation time and paid holidays, which would be lost in a placement at another job.

The company benefits by being able to keep a trained employee and to keep the costs charged against the injury low, thus controlling insurance premium expenses.

There Are Three Components to a Return-To-Work Program

A. A designated physician provides good treatment to the claimant and information to the employer and the insurer regarding restrictions. A list of occupational health physicians near your project may be obtained from the Albuquerque District Office upon written request.

B. Rehabilitation providers coordinate the return to work, solve communication problems and meet any statutory requirements regarding the provision of rehabilitation.

C. Your company needs to communicate the need to the immediate supervisor, who is expected to treat the returning employee properly and to provide work within restrictions.

Attached are sample forms your company may use as a guide in implementing this program.

Prerequisites For a Return-To-Work Program

JOB DESCRIPTIONS. Often overlooked in the Return-to-Work Program is the creation of an accurate and current job description for each and every worker. The description should be detailed enough to cover the essential physical functions of the job, equipment and tools to be used, and environmental conditions to be encountered. In the event that an injury occurs, this information would be provided to the designated physician and rehabilitation provider giving them all the essential information needed to effect a return-to-work plan.

Attached are sample Job Information Sheets, both completed and blank, for use as a guide in establishing your own job descriptions.

RECOMMENDED HIRING PROCEDURES. As discussed above, employers should establish a proper job description, detailing the essential functions of the job for each employee. Prior to hiring, the employee should sign the job description indicating that they are capable of performing the functions.

It is recommended that a drug screen policy be in place by the company doing work for the Corps of Engineers. This program should include the following:

**Pre-employment drug screening.*

**Drug screen whenever an accident occurs ca using injury to oneself or others and/or damage to property.*

**Random drug testing in instances of theft on site; increase infrequency of accidents/near misses; and increase frequency of absenteeism, etc.*

It is recommended that the program be reviewed by legal counsel before implementing to insure that it is not discriminatory.

It is recommended that any employee that is going to be operating equipment on the road, have a previous driving record check. Your company should establish standards of acceptability for the driving record. A suggested standard would be no more than eight(8) points in one calendar year; no more than twelve(12) points in a three year period; and no DUI's or DWI's in a three(3) year period.

Each new employee should go through an orientation process that explains your company's safety program, hazard assessments, and procedures for safety meetings and documenting of incidents that may occur.

SAMPLE

EMPLOYEE NOTIFICATION
Workers' Compensation Claims

For work related injuries, **NAME OF COMPANY** uses the **NAME OF MEDICAL CLINIC** The enclosed wallet card may be carried for ready reference.

The **NAME OF MEDICAL CLINIC** provides the following service and requests that individuals comply with the procedures:

1. The above clinic will provide treatment for the "walking injured". This includes patients with lacerations, sprains, foreign bodies in the eye, smashed fingers, etc.

2. If a person has a severe injury or illness (severed finger, profuse bleeding, unconsciousness, heart attack, etc.) he/she should be taken to a hospital emergency room.

3. No appointment is needed for acutely injured patients. However, it is advisable to call the hospital first to let them know a patient is on the way.

4. If an emergency occurs after regular office hours, one of the clinic's physicians is available "on call" 24 hours a day. Patients are usually referred to **NAME OF PHYSICIAN .**

SAMPLE

RETURN-TO-WORK PROPOSAL

TO: Supervisor

RE: Work Limitations

DATE:

DUTIES:

TOOLS:

WORK HOURS:

WORK BREAKS:

Please be advised that:_____, has received a return-to-work release with the following limitations:

Work Environment
Physical Demand
Lifting
Climbing
Walking
Standing
Sitting
Driving
Bending
Squatting
Crawling

If asked to perform a task outside of these limitations,_____, is expected to decline.

As Supervisor, you are required to respect these limitations and to provide work for which _____, is physically qualified.

If _____, has questions regarding his assigned tasks, or has physical difficulties in performing these tasks, he should immediately discuss the problem with the Superintendent or call one of the people listed below:

SAMPLE

RETURN-TO-WORK
Signature Sheet

Employee	Date
Supervisor	Date
Owner/Manager	Date

SAMPLE

JOB INFORMATION SHEET

EMPLOYER NAME:_____ DATE:_____

COMPANY:_____

JOB TITLE: 5183 – Plumbing NOC & Drivers Steam Pipe or Boiler Insulating & Drivers, & Welders

JOB DESCRIPTION: PLUMBERS

Assembles, installs, and repairs pipes, fittings, and fixtures of heating, water, and drainage systems, according to specifications and plumbing codes: Studies building plans and working drawings to determine work aids required and sequence of installations. Inspects structure to ascertain obstructions to be avoided to prevent weakening of structure resulting from installation of pipe. Locates and marks position of pipe and pipe connections and passage holes for pipes in walls and floors to accommodate pipe and pipe fittings, using handtools and power tools. Cuts and threads pipe, using pipe cutters, cutting torch, and pipethreading machine. Bends pipe to required angle by use of pipe-bending machine or by placing pipe over block and bending it by hand. Assembles and installs valves, pipe fittings, and pipes composed of metals, such as iron, steel, brass, and lead, and nonmetals, such as glass, vitrified clay, and plastic, using handtools and power tools. Joins pipes by use of screws, bolts, fittings, solder, plastic solvent, and caulks joints. Fills pipe system with water or air and reads pressure gauges to determine whether system is leaking. Installs and repairs plumbing fixtures, such as sinks, commodes, bathtubs, water heaters, hot water tanks, garbage disposal units, dishwashers, and water softeners. Repairs and maintains plumbing by replacing washers in leaky faucets, mending burst pipes, and opening clogged dreains. May weld holding fixtures to steel structural members. Wen specializing in maintenance and repair of heating, water, and drainage systems, in industrical or commercial establishments, is designated plumber, maintenance.

WORK HOURS: Length of work shift 8 hrs.
Overtime: (Yes) No Varies hrs.

WORK OBJECTIVE (S): Installing piping, plumbing, fixtures, and equipment for residential, industrial, and commercial buildings, including underground utilities.

EQUIPMENT USED: Hand tools, Ladders, Scaffolding, Shoring, Manlifts, Welding Equipment, Forklifts, Bobcat, or Backhoe.

ESSENTIAL PHYSICAL TASKS:

1. Ladder climbing and stair climbing. Climbing in and out of excavations.
2. Overhead reaching and lifting, overhead user of arms, wrists, hands, and shoulders.
3. Bending and lifting from floor of bench.

4. Carrying material and equipment while walking or climbing stairs or ladders.
5. Lifting material and equipment and able to twist or bend at waist.
6. Gripping tools, rotating wrist with force. Tool work above head.
7. Able to crawl in confined spaces 36" x 36".
8. Bending at waist and walking 25 ft.
9. Gripping and holding pipe and fittings.

PHYSICAL DEMANDS OF ESSENTIAL JOB FUNCTIONS

POSTURAL CONSIDERATIONS

1. Walking: Maximum continuous time 200 ft. @ time Total Distance during shift 2 mile .
2. Sitting: Maximum continuous time 15 min
3. Standing: Maximum continuous time 2.5 hours

LIFTING

Object Being Lifted	Weight of Object	Height of Object at Start	Height of Object at Finish	Number of Lifts Per Hour	Carry Distance of Object
Soil Pipe 4"	75 lbs	Ground	36"-72"	10x/hour	25 ft.
Pipe 2" x 21'	75 lbs	Ground	36"-72"	10x/hour	25 ft.
Fittings	40 lbs	Ground	72"	5x/hour	25 ft.
Equipment	75 lbs	Ground	72"	2x/hour	50 ft.
Tools	10 lbs	Ground	80"	5x/hour	25 ft.

CLIMBING

	Stairs	Ladder	Frequency of Climbing
1. # of steps	26 (two floors)	12	5 times an hour
2. Height of steps	8"	12	5 times an hour

PUSHING/PULLING

Object Pushed/Pulled	Push Only	Pull Only	Both	Weight of Push/ Pull	Distance Of Push/Pull	Number of Push/Pull per Hour
Tools & Equipment			X	200 lbs	100 feet	5x/hour

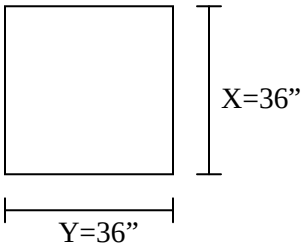
SAMPLE

GRIP

Object Gripped	One Handed Grip	Two Handed Grip	Twist with Grip	Force Required To Grip	Times Object gripped (per hour)	Pinch Grip?
Air Wrench	X			40 lbs	6x/hour	No
Pipe Wrench	X		X	75 lbs	10x/hour	No
Pliers & Channel Locks	X		X	40 lbs	10x/hour	No
Screw Drivers	X		X	10 lbs	10x/hour	Yes

CONFINED ACCESS/LIMITED HEADROOM

For the following questions, assume:



1. To complete task, must employee enter a limited entry space? Yes x No____
2. If yes, what are the dimensions of the space? X= 36 in. Y= 36 in.
3. To complete task, must the employee remain in a space that does not allow standing? Yes x No____
4. If yes, what are the dimensions of the space? X= 36 in. Y= 36 in.
5. Total elapsed time in limited space? 30 min. (Sometimes longer)

ENVIRONMETAL CONDITIONS

1. Do the essential functions require (near) (far) color vision? (Circle those that apply)
   Specify_____
2. Do the essential functions require hearing? No____ Yes x
   Specify Must be able to communicate with employees not in immediate work area. (i.e. in trench and employee above ground.
3. Is the employee required to work in extreme hot/cold environments? No____ Yes x
   Specify Both summer and winter (indoor and outdoor)
4. Is the employee exposed to chemicals? No____ Yes x
   Specify Many

SAMPLE

JOB INFORMATION SHEET

EMPLOYER NAME: _____ DATE: _____

COMPANY: _____

JOB TITLE: _____

_____

JOB DESCRIPTION: _____

_____

_____

_____

_____

_____

WORK HOURS: Length of work shift _____ Hours

Overtime: Yes No _____ Hours

WORK OBJECTIVES: _____

_____

_____

EQUIPMENT USED: _____

_____

_____

ESSENTIAL PHYSICAL TASKS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

SAMPLE

PHYSICAL DEMANDS OF ESSENTIAL JOB FUNCTIONS

POSTURAL CONSIDERATIONS

4. Walking: Maximum continuous time_____Total Distance during shift_____
5. Sitting: Maximum continuous time_____
6. Standing: Maximum continuous time_____

LIFTING

Object Being Lifted	Weight of Object	Height of Object at Start	Height of Object at Finish	Number of Lifts Per Hour	Carry Distance of Object

CLIMBING

	Stairs	Ladder	Frequency of Climbing
3. # of steps			
4. Height of steps			

PUSHING/PULLING

Object Pushed/Pulled	Push Only	Pull Only	Both	Weight of Push/ Pull	Distance Of Push/Pull	Number of Push/Pull per Hour

GRIP

Object Gripped	One Handed Grip	Two Handed Grip	Twist with Grip	Force Required To Grip	Times Object gripped (per hour)	Pinch Grip?

SAMPLE

CONFINED ACCESS/LIMITED HEADROOM

6. To complete task, must employee enter a limited entry space?
   Yes__ No____
7. If yes, what are the dimensions of the space? X=____in. Y=____in.
8. To complete task, must the employee remain in a space that does not allow standing?
   Yes__ No____
9. If yes, what are the dimensions of the space? X=____in. Y=____in.
10. Total elapsed time in limited space? _____min. (Sometimes longer)

ENVIRONMETAL CONDITIONS

5. Do the essential functions require near / far / color vision? (Circle those that apply)
   Specify_____
   _____
6. Do the essential functions require hearing? No____ Yes____
   Specify_____
   _____
7. Is the employee required to work in extreme hot/cold environments? No____ Yes____
   Specify_____
   _____
8. Is the employee exposed to chemicals? No____ Yes____
   Specify_____
   _____