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Papers Delivered in the CEMENT, QUARRY & MINERAL AGGREGATES SESSIONS

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Cement, Quarry & Mineral Aggregates Sessions

CORPORATE DRUG AND ALCOHOLISM PROGRAMS

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Like all complex industrial problems which are considered detrimental to society and individuals, there is a variety of views and assumptions about the proper way to deal with drug dependency and alcoholism.

As a basis for questions and discussion which I hope will follow, I would like to make two statements and briefly elaborate upon them. For the sake of stimulating discussion, I am deliberately phrasing these statements in an axiomatic tone, although it will be obvious to anyone that he can raise some exceptions to the following generalizations:

1. It is difficult, if not impossible, to install and continue to operate an effective industrial alcoholism and/or drug abuse program which excludes the other behavioral-medical problems or which has not been integrated with standard personnel practices unless the corporation is willing to define "effectiveness" as being limited to case-finding of only the more advanced and obvious stages of alcoholism and drug dependency.

2. Conversely, it makes little difference, per se, what name is chosen for the program or what name it acquires as its label throughout the company; rather, the factors of crucial importance are: (a) what functions are performed through the program? (b) how well do these fit the corporate situation, and (c) how consistently is the program designed and implemented?

To simplify our discussion, I shall elaborate upon these statements under the topics of (1) the scope of the problems and the program, and (2) the game and the name of the game.

The Scope of the Problems and the Program

Suppose a corporation decides to implement a rehabilitative control system which deals only with alcoholism and drug dependency, and management places the coordination of this program in the hands of a person whose specialty is one or both of these problems. Let us further suppose that an employee is referred by a supervisor or seeks help from this coordinator. In the confidential interview or the further diagnostic process which may follow, it is found that the employee has neither alcoholism nor drug dependency, but instead suffers from acute and periodic depressions. Should the coordinator tell the employee, "I'm sorry, but our company program only deals with alcoholism and drug problems, we are not able to assist you?" Or, more realistically, will the drug and alcoholism specialist have the knowledge and the sensitivity to recognize acute depression?

Early in my career in this field, a general practitioner referred the daughter of an employee to me for counseling after his examinations had revealed no physical cause for a collection of puzzling symptoms. Fortunately, after a couple of interviews and a small battery of psychological tests, I concluded that her symptoms and behaviors could not be accounted for solely by emotional disturbances, so I referred her back through her physician to a neuro-surgeon for further tests. Diagnosis: a brain tumor.

To use another illustration, suppose a small group of employees, having otherwise good work records, are found to have taken a marijuana break, along with their coffee break. In many areas this would legally be considered a misdemeanor, at most. Suppose the company immediately discharges these employees. Is the corporation thereafter prepared to summarily discharge on the first offense every employee found walking out the gate with $20 worth of company property? Or, what kind of penalties, if any,

accrued to the employees involved in the most recent case of out-of-wedlock pregnancy which occurred at an office party on company premises?

What are the implications of establishing a so-called nondiscriminatory hiring policy for persons recovered from drug dependency, alcoholism, or emotional disturbances and in part implementing this by "red-circling" a group of positions intended to be filled only with applicants recovered from drug abuse? Has the corporation not established a practice which discriminates against all applicants who do not have the "foresight" to become addicted to a drug and subsequently recover before applying for a position with the company?

You will note that all of the illustrations given stress one or both of two important considerations: first, the especially great need for consistency in personnel practices if a corporation is to deal effectively with stigmatized behavioral-medical problems; and second, the obvious but often ignored fact that behavioral-medical problems come in people, not in bottles, capsules, syringes, categories, diagnoses, or neat, separate classifications.

The behavioral-medical illnesses and conditions have many things in common with all types of human illnesses and frailties. One of these similarities is that there is no law specifying that an individual should only suffer from one illness at a time. Another similarity is that these stigmatized illnesses are not limited to the weak, the stupid, the improvident, the successful, or the unsuccessful, much as our prejudices and insecurities would encourage us to think so.

In so far as we can determine, what are the boundaries and extent of these problems in industry?

First, when we speak of alcoholism, we are not talking about drinking, per se, but rather of the loss of control to any degree of one's serious intentions about drinking. Also, in connection with employees, alcoholism is limited to its early and middle stages.

Prevalences vary from around one per cent of a plant population up to 10 or 12 per cent, depending upon average age, male/female ratio, and the length of time company practices have been retaining untreated alcoholics on the payroll. This latter factor, based upon in-plant surveys on which I have worked at the National Council on Alcoholism and for the National Loss Control Service Corporation, will vary from 12 to 17 years.

Other drug dependencies are more difficult to estimate, since it has only been recently that more companies have been collecting retrievable data on this. Those few of us who have administered broad-gauge behavioral-medical controls and collected case-finding data seem to agree in general that in the 1950's the ratio of alcoholism to other drug dependencies ran about 10:1. In the 'sixties the other drugs may have increased that share to a ratio of 10:1.5, and in the 1970's to around 10:2.

In rank order, the other drugs involved are tranquilizers, barbiturates, amphetamines, and all other chemicals. In terms of use frequency, marijuana among employed persons under age 35 probably ranks somewhere between 25 per cent and 40 per cent of the number using alcohol, depending upon local customs. However, when referring to "use" we are talking about everything from occasional use to what might be called heavy and continuous use, whatever that means.

Aside from its illegal aspects and the usual corporate need to prohibit intoxication on the job involving any chemical, marijuana gives us few problems work-performance-wise.

Cross-dependencies in individual cases between alcoholism and other chemicals have greatly increased in recent years among all employee age groups. With middle-aged alcoholics, for instance, the cross-dependencies are usually involving tranquilizers and/or barbiturates. Among younger employees, the pattern seems to differ only with respect to a wider diversity of chemicals.

All behavioral-medical problems have detrimental effects upon work performance and/or occupational longevity, if permitted to go untreated for significant periods and if they are progressive. It is wise to include this qualification, since there are some static emotional conditions which do not appear to affect work, or may even contribute to work effectiveness in certain jobs.

With the majority of the problems, however, and especially those such as alcoholism and drug dependency which grow progressively worse when not treated, the earlier cases are identified and referred for help, the better for both the employee's and the corporate welfare.

The Game and the Name of the Game

We are great people for euphemisms. If an unpleasant or odious noun is presented, we give it a less offensive name. In the minds of many, alcoholism and drug abuse are not simply difficult problems, but offensive words. In the memory of persons my age, "hopelessdrunk" was all one word, like "damnyankee."

Stigmatizing illnesses is not a new phenomena. We have forgotten that only 50 years ago tuberculosis was so closely associated with dirt, poverty, and ignorance that many physicians would avoid treating it for fear it would drive away their patients. Forty years ago, cancer was also a word for which we coined euphemisms if we spoke of it at all.

Stigmas do disappear, but it takes a long time. Meanwhile, we must live with them.

In a rather vain and futile effort to circumvent the effects of existing stereotypes regarding alcoholism and drug abuse, some corporations have adopted various names for their in-plant programs. Some of the more common labels are "program for problem drinkers," "employee assistance program," "personnel counseling service," "problem employee or troubled employee program."

As far as I can observe, the name one uses has little or no influence one way or another upon program effectiveness. The society is permeated with the mystique —the stereotypes, stigma, prejudice, fear, and misinformation—regarding the behavioral-medical problems. The effects of this mystique upon our economic and administrative judgments perpetuates the people-killing and profit-reducing conditions within our so-called well-managed corporate organizations. I presented a paper entitled "Breaking the Alibi Barrier to Alcoholism and Accident Control" to this Congress in 1971, in which I illustrated from company studies the in-plant camouflage and mishandling systems typical with the stigmatized illnesses. Calling waste and inefficiency by other names does not solve problems, and coining euphemisms for alcoholism and drug dependency does not solve those problems either. It is not the name of the game, but the nature of the game which is crucial.

So, what functions are essential to effective control of drug dependency and alcoholism?

The first thing required is an approach which will steadily and increasingly elicit the support and involvement of all segments of an industrial community. Both line and staff have roles to play appropriate to their normal functions. If it is a shop where employees are union-represented, there must be cooperation and mutual action at levels of planning, installation, and appropriate aspects of implementation.

Second, at some early point, routes of referral for diagnosis, treatment, and follow-up must be established.

Third, general and specific policies, whether written or verbal, should be developed and announced.

Fourth, suitable staff orientation and supervisory training should be developed and plans made for renewal courses as personnel turnover occurs.

Fifth, provision should be made for periodic evaluation of the program to pinpoint management by objective targets, trouble spots, and ways in which the flexibility necessary for improvements can be assured.

I mentioned the criteria earlier of asking how well does the program fit the corporate situation. I observe companies and government employers all over the U.S. landscape which are violating this cardinal rule of sound program development. In initiating a consulting relationship with a company I am frequently asked, "Suppose we were to develop a behavioral-medical program; what would you advise we do about supervisory training?"

Usually I respond to this question by saying, "At the moment, I haven't the foggiest notion." Then, when the shock fades, I explain that until we know what, if anything, the supervisors may be doing wrong in handling the correction of performance problems, I could not advise what should be changed or the type of

training which might contribute best to that change.

As a result of mystique, every company already has an unwritten, unrecognized set of behavioral policies in operation. So, when a firm starts to initiate a written policy, they are not writing on a clean, uncluttered "corporate slate."

Yet, I find in my travels that so-called drug and alcohol specialists are selling all kinds of packaged supervisory training courses—and some very highly placed executives are buying. Copying some other company's successful behavioral-medical program is even less desirable in that field than merely copying another firm's safety program would be in that field.

Finally, consistency in program design and implementation should be stressed again. Nothing will kill a program in this stigmatized field as quickly as inconsistency. Over and over again, when reading the policies and procedures developed by various companies and/or unions, I will see a phrase, such as "We will handle these problems administratively in a manner consistent with the way other illnesses are handled." Then, in the succeeding procedure I will find point after point where special procedures have been set up which are obviously different from standard accepted practices.

In conclusion, it is well to remind ourselves of the often quoted phrase, "We have met the enemy, and he is us!"

When we are dealing with such problems as alcoholism and drug addiction, stigma is ever-present. In the minds of many, the phrase "drug addiction" triggers fears, stereotypes, and the notion that once an addict, always an addict. The word "alcoholism" conjures up the picture of the late stage, drunken sot type of case, or perhaps a father or mother whose untreated illness caused behavior acutely painful to the family.

With such images in our minds, it is not surprising that we tend at the corporate level to forget our tested problem-analyzing and solution-development systems when confronted with alcoholism and drug dependency. It is also not surprising that so many newcomers to the field continue to reinvent the square wheel.

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WHAT IS SAFETY, REALLY?

By WILLIAM C. DENEEN
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Safety is People! True! But safety is really understanding people and what turns them on. If more employers really worked as hard at trying to understand people as they work at getting out production, I believe that the production would really zoom! There would be fewer accidents and morale would be better.

Why have a safety program? Of course, the first reason all of us think of is to keep people from being hurt. No question. This is the important reason. The loss of life, the amount of human suffering because of accidents, both at work and at play, is a real tragedy. In fact, I almost feel guilty when I talk about the other reason why we must have better safety programs. But, there is another important reason: Money!

When an employee gets seriously hurt, not only does the company lose money, but think of what it can mean to an employee and his family financially. Sure workmen's compensation helps, but it will never make-up to the seriously hurt employee what he might have earned if he had not been injured.

Then there is the employer. Too many employers look at workmen's compensation as just another cost of doing business. Actually, I believe it is a controllable cost and should be handled accordingly. Any way you look at it, the cost of workmen's compensation comes straight off the top of the profit sheet, and profit is the name of the game. While there may be some who say profit is a dirty word, I say without it, regardless of our job, we could not survive. Preventing injuries is important, but controlling costs and saving money follows a close second.

To illustrate, let me tell you of two companies and what it is costing them today for workmen's compensation. Both of these companies are in the same industry, heavy manufacturing, both have about four hundred employees, and both are operating in old buildings. In other words, almost identical conditions. One established an effective safety program a few years ago, and brought their compensation cost down from over $100,000 per year to about $1,700 per year. The other company did nothing and today is spending about $250,000 per year on direct cost alone. Fantastic, but true.

If the reason we have safety programs is to prevent injuries and save money, how do we do it? Well, you've no doubt heard most of this before, but let's start at the beginning.

First, what top management wants is what top management gets, usually. In other words, if they want it, truly, they can usually get it. Top management must be interested and involved, or it will not happen. This is not anything new, you've heard it before a hundred times, but it still remains a prime requirement. Notice that I said interested *and* involved. Too many top managers say they are interested, but don't want to become involved. These men are masters of the art of delegation of authority. Of course, those of us who have worked for such men quickly find out what they really want, and safety soon fades into nothing.

The problem then falls to the safety director, whoever he may be. This is, in my experience, the personnel man, maintenance man, or the part time job of some other member of the salaried group. Too often, then, it's the part time job of someone who usually doesn't want it, let alone understand it, or have the time for safety.

Since the so called safety director knows that his boss doesn't really care about safety, he quickly learns to say that middle managers and first line supervisors are the guys who are responsible for the poor safety record. Again of course, these people quickly learn that nobody really cares, so they spend their time doing the things that they know their bosses really want.

Finally, there is the worker. I can't remember the number of times I have been told workers today just don't want to work. Frankly, I'm not surprised. Who *does* want to work in the atmosphere too many managers create in their organizations?

Let's talk a little bit about workers today! One of the things I do in my meetings with first line supervisors is to ask them this question: "What percentage of the workers today are basically good people, don't create problems, usually at work, not late, etc.?" The answer invariably is 95 per cent, on the average. This really means that five per cent of our work force today may not want to work. Or, five per cent of our work force are creating our problems and we're reacting too often and too much to that five per cent and forgetting that 95 per cent. One foreman told me, "I spend 95 per cent of my time with five per cent of my people." Sad isn't it? Sure, we need to spend more time with those that need help, but don't forget the 95 per cent.

With these ideas in mind, what is the key to a successful safety program? Well, let's start with top management again. I believe that most top managers have what I call the three key ingredients of any successful program: integrity, attitude, and understanding. Unfortunately, they don't always reflect these qualities or sell, if you will, these qualities, and people, therefore, don't understand. A top manager is really a salesman, selling his people on what he wants them to do. Equally important, he has to become involved. Sure, he can delegate, but he must want to help, to insist that things be done right. And he must try to understand his people and to work at creating an atmosphere where people will be happy to work. He must show his concern, and people will quickly understand and react properly. Of course, this is easy said and hard done. But if managers work harder at this production will increase. Accidents will stop and morale will improve. Workers spend a lot of time

reading managers. Managers need to spend more time understanding workers.

Then there is the safety director. Who should he be? The company today, with three or four hundred people, that doesn't have a full time safety and training director is really missing the boat. This person should be a people-person who works hard at trying to understand people and their needs. He is what I call the sales manager for safety. The successful sales manager for safety can be a true asset to any company because a true safety program not only prevents accidents, it is the vehicle that good managers use to tell and sell people (workers) that management does care and recognizes them as people and that they (workers) are vitally important to the success of the company.

How is this done? Well, there isn't any simple answer to that one. The safety director has a tough but interesting job. The one trap that too many Safety Directors today are letting themselves fall into is to spend too much of their time inspecting and not enough time promoting and training. I believe that the problem of seeing that all the new safety laws or standards of today are implemented should not fall to the safety director. These are engineering and maintenance problems and should be placed there. Let's get the safety director back to being a promoter and trainer.

Then we come to first line supervisors, or the foreman—in my opinion, the most "turned off" of all management people. Not appreciated by higher management, and not looked up to by workers because they quickly find out he is not appreciated and respected by higher management, so he can't truly represent them. The guy in the middle.

I believe the time is fast coming when progressive companies are really going to take a look at first line supervisors and do something to help them. Somehow the status of the supervisor must be raised. One way would be to pay them properly. I know of companies where the worker is paid more than the supervisors. Why? Well to quote one personnel director, "The wheel that squeaks the loudest gets the most grease." Well, I wouldn't be surprised if that personnel director soon has more than one squeaking wheel. But money is not usually the problem! I believe it's respect. It seems that too many managers and companies just don't realize that the first line supervisor is the key to better production, better quality, and lower costs. Managers just don't respect them for what they mean to the company. Since managers and companies don't really respect supervisors, it's almost impossible for the supervisor to put forth the effort he should and could, since he's so turned off.

Now we come to the workers.

If I were a trained psychologist and wanted to measure the attitudes and feelings of workers in an organization, I would simply measure the attitude and feelings of first line supervisors, because I believe the attitude and feelings of workers are truly a reflection of what their bosses feel and think. If the supervisor is turned off, chances are the worker is turned off. In my work, I give first line supervisors a quiz which asks the question, "What do employees want from their jobs?" Another way to say this is, "What keeps people happy in their work?" Ten things that affect people and keep them happy are: help on personal problems; interesting work; high wages; job security; personal loyalty of supervisor; tactful disciplining; full appreciation of work done; feeling of belonging; good work conditions; and promotion in the work.

The majority of supervisors will check "high wages" and "job security" as most important to the people who work for them. But in almost every meeting one or two people who will pick "full appreciation of work done" and "feeling of belonging" as most important. Of course, as you can imagine, some pretty heated discussions evolve from this quiz. I encourage the people to argue their side, with comments from myself to encourage the discussion.

I then disclose the results of a survey taken in a large company (10,000 employees) in 1955. In that survey "full appreciation of work done" was first and "feeling of belonging" was second to that group of people. "Job security" came in fourth and "high wages" fifth. Obviously, all of these things are closely related, and there may be some change of position from another group under another condi-

tion. However, I feel that when employees say, as they do so often, "Give me more money and I'll do the job," or, "All I want is job security," I don't believe that is what they are really saying. I believe they are saying, indirectly, you don't appreciate me, and you don't make me feel a part of the organization. These things are difficult to say so people say instead, give me money or job security since you don't really respect me and recognize me as a person.

Interesting isn't it? What really keeps people happy? Well, every situation is different, but I feel if all of the management team of any organization was made to understand that respecting people and recognizing everyone's importance is necessary to the success of the organization, the entire attitude of many employees would change.

The next problem I see too often is poor communications. We read a lot about communications today, but I wonder how many of us really understand what *good* communications really are. Let me give my simple version.

First of all, good communications are understanding that when mistakes are made it too often is the result of not understanding what we've been told. Too often, managers jump to the conclusion that somebody is stupid when things get fouled up, when in reality the person who made the mistake made an honest mistake. He did what he thought he was told to do. Mistakes are not always because we (workers) don't care, have no ability and a poor attitude.

Next, good communication is not trying to place blame when something goes wrong. Placing blame blocks good communication or ends all communication. Again, too often, when a mistake happens the first reaction of many of us is, "I'll get the guy that did that." Even if we don't say that we'll get the guy, but show our feelings, people quickly catch on and cover-up what really happened. Never forget: people (workers) are constantly putting their own interpretations on things that happen, and most of the time these interpretations are not the same as the bosses'.

Even more important, good communications are telling people what is going on. It's really that simple. The rumor mill is guessing as to what's going on and too many managements today are abdicating their rights to tell employees what is going on to the rumor mill and even sometimes to their union. If these two places don't know, the janitor will.

What do I mean by "telling workers what is going on"? Well, again it's so simple it's funny. I mean the little things. The things that may be an every day occurrence to the staff, but to the workers it's big news. The new machine that's been ordered that will increase the number of workers, not decrease the number. The increase in orders received. The new vending machines coming in. The plans to pave the parking lot. And on and on and on. It may mean a couple of hours a week on someone's part to keep this important line of communications working properly, but it will pay real dividends in increased morale. Communications are difficult. But the most difficult thing is that most companies are not teaching their people what good communication is, what must be done to improve it, and most of all to be tolerant of honest mistakes. In other words, to work at trying to understand what this thing called communication really is.

You will remember I mentioned that every organization of three or four hundred people ought to have a safety and *training* director. In effect, safety could be properly classified, in my opinion, as training. In other words, if the worker is correctly trained he certainly stands a much better chance of being a safe worker. My experience is that most companies just don't have training programs. Not only do they fail to train workers, they do nothing at all, really, to train supervisors and then hold the supervisor responsible to do a job he doesn't really understand. Let's face it! Too many supervisors are picked because they are the best workers. That may be ok, but they are not trained in what the job of supervision really is, what their responsibilities are, and what it takes to be a leader. Too many companies again just wave the magic wand and say, "Go forth and be a supervisor." Sometimes they don't even say, "Good Luck."

After all this discussion, what is safety—really?

It is really two major things. The first

is salesmanship! Safety is a product that is costing money. Therefore, we need to control the cost and sell it to our people. We need to make it interesting! To do things that attract attention! To make people aware! The things we can do in this respect are unlimited, or limited only by our imagination. But mostly we need to do it. One safety-personnel man in a union plant told me he spends 80 per cent of his time selling safety and 20 per cent of his time with union-personnel work. Of course, what he's really doing is spending 80 per cent of his time with his people. Therefore, they know he's interested and concerned, and he has far less people problems.

The second thing we really need to do is train. It wasn't too many years ago when most plants didn't have anyone with even the title of Safety Director. Well, that's changing, and we are making progress in the field of safety. Wonderful. But now, how about training?

As I said earlier, every organization of any size at all needs a safety director and training director. Actually, since safety and training are so closely related and have such common goals, I feel that a safety and training director could, and in most cases should, be the same person. Training needs the attention in the next five years that safety has received in the last five.

So, safety is salesmanship and safety is training—really. Of course, doing these things would require more time spent with people, and people are the key to real safety progress.

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FREE SILICA— DETECTION, SAMPLING, AND ANALYSIS

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The Occupational Safety and Health Act of 1970, commonly referred to as OSHA, has created increased awareness and concern on the industrial scene. To implement this Act, certain rules and regulations pertaining to occupational health and environmental control have been promulgated by OSHA. These rules and regulations state specific limits of employees' exposure to toxic and hazardous substances and what action must be taken to achieve compliance as related to acceptable industrial hygiene practices.

The Mining Enforcement and Safety Administration (MESA) administers certain functions under the Federal Metal and Nonmetallic Mine Safety Act and establishes other rules and regulations pertaining to air quality standards; MESA references the threshold limit value adopted by the American Conference of Governmental Industrial Hygienists. Additional standards on air quality exist under the Coal Mine Health and Safety standards and at state and local levels.

Recently the Occupational Safety and Health Administration and the Mining Enforcement and Safety Administration entered into an agreement to tentatively clarify the authority of each agency regarding areas of employee safety and health. Essentially, MESA has authority in facilities used in mining and milling as defined in the document. All regulations are available from the *Federal Register* and other reference files. It is essential that every employer become fully acquainted with these mandatory health standards as they may pertain to their particular operation.

Our subject is the detection, sampling, and analysis of mineral dusts for crystalline free silica as they relate to recognized standards. The free silicas are specific mineral forms of silicon dioxide, more commonly referred to as SiO_2. This

group consists of quartz, cristobalite, and tridymite, with quartz being the most common form of SiO_2 found among the usually used minerals.

In the mining, milling, processing, handling of minerals, and in operations which depend upon minerals in the manufacture of finished products, certain amounts of dust are available for release to the atmosphere as an air contaminant. It is the quantity and quality of these dust emissions that are of interest to the plants involved. It is generally considered that those mineral dusts which contain less than one per cent crystalline silica fall within the nuisance dust classification unless there are other threshold limit values established for those minerals. Threshold limit values (TLV) are those guide limits of air contaminant concentrations to which workers can be exposed, on a seven- or eight-hour workday and 40-hour workweek time-weighted average basis, with reasonable assurance that they are not being exposed to harmful levels. There are also threshold limit values for nuisance or inert mineral dusts.

In the event mineral dusts contain over one per cent crystalline silica, a formula is used to establish the TLV for that particular substance. Threshold limit values are expressed in mg of dust per cubic meter of air being sampled.

The operator of a manufacturing facility must first of all be acquainted with the laws, particularly as they relate to his operation. If mineral dusts are involved in his operation, he should automatically undertake to determine if he complies with the laws. In some cases the plant operator has sufficient knowledge and skills to make this assessment of air quality. In most cases, the plant operator will not possess the equipment to conduct the program nor the expertise which is required. At this point, he must consult with and engage someone in the industrial hygiene field to make this assessment. There are several sources for such services and let us assume, then, that the testing services have been procured or contracted.

It is most important that the first point of business be the complete review of the operator's process, the minerals involved, the number of people exposed to a suspect environment, and any peculiarities of the operation which must be considered. Generally, a program can be resolved by telephone, but in large, complex operations a preliminary walk-through may be desirable for the industrial hygienist to plan his sampling strategy.

As will be seen later in this discussion, the identity of the mineral substances is a critical factor in developing full assessment of air quality. It is equally important that all parties insist and agree to conduct as near to a full shift monitoring of the selected employees to provide for a realistic and factual time-weighted average of worker exposure. Too often we find that short term spot checks are made in the interest of time and economy, only to find that the effort is invalid since the data was not representative of a full shift exposure.

It is highly desirable to make a thorough initial monitoring study at any facility. This would include points of operation which do not appear dusty, as well as those points which are obviously dusty. An employer would be less vulnerable to criticism for using judicial judgment in selecting test sites. Once a complete base line study is made through the operation, subsequent spot checks could be limited to areas where excess exposure was originally detected and/or where engineering corrections have been made to alleviate a condition.

The individual who is ultimately responsible for the monitoring program will arrive at the plant or mining operation with an array of sampling equipment. He will be prepared to monitor as many employees as practical, utilizing personal monitoring devices, and he will be prepared to obtain separate total dust and respirable dust samples, since the laws cover both fractions. In addition, he may use high volume samplers to obtain larger quantities of atmospheric dust for analytical purposes.

In the optimum program, the industrial hygienist or technician will afix the precalibrated pumps to the worker in the change house at the beginning of the shift and remove these devices at the termination of the shift, again to insure long period sampling. Depending on the conditions encountered, the filters on which the dust is collected may be changed numerous times during the pe-

riod to preclude the potential of dust drop-off. The sampler will circuit the operation frequently to be certain the equipment is functioning properly and to make any necessary adjustments. It is important to maintain a good record of the exposure times, filter numbers, and work duties associated with each employee, by name and identifying number, being monitored.

The monitoring pumps are those commercially available from numerous equipment manufacturers. A list of approved monitoring pumps can be obtained from the National Institute of Occupational Safety and Health. The pump or pumps are pre-calibrated and standardized at a flow rate of 1.8 liters per minute. The filters through which the air is drawn are housed in plastic filter holders connected to the pumps by a flexible plastic tube. As previously mentioned, two samples are taken. In the case of the total dust sample, the air is drawn through the filter in an open face-down position. In the case of respirable dust, the air is drawn through a miniature cyclone which expels the coarse particles, and only the minus 10 micron particles are drawn onto the filter. Care must be taken so that the employee will follow through his normal workday habit and not disrupt or damage the filters.

High volume samplers are located at strategic points of operation to obtain larger samples for analysis. Although these samples may not be used, it is always good insurance to take additional samples while at the plant or mining site. These pumps are normally operated at nine liters per minute, with or without a cyclone.

The samples thus collected are returned to the base laboratory for analysis. The first procedure is to disassemble the filter holders and extract the filters onto which the dust is adhered. I wish to point out here that the filters most commonly used for collection of mineral dust samples are the 37 mm diameter, 5.0 micron pore size polyvinyl chloride filters. The filters are weighed on a micro- or semi-micro-balance before and after the dust sampling procedures. The difference in weight represents the mass of dust collected, and by relating this to the flow rate and time, the dust concentrations in the work place atmosphere are calculated in mg/m³.

The project does not end this simply. We know at this point the quantity of dust, but not the quality. We must further extend the testing to determine if the dust is classified as nuisance dust or, if crystalline silica is present, to what extent it is present. Thus, we are faced with analyzing small quantities of collected dust in the low range of 1 mg. To this end we must resort to the most suitable instrumentation and techniques possible, for if the break point between nuisance dust and siliceous dust is one per cent crystalline silica, we will be looking forward to the task of detecting quantities of crystalline silica in the range of 10 μg.

There are three generally proposed techniques for determining trace quantities of crystalline silica, and many fine papers have been prepared on this subject. Infrared spectroscopy has been used to quantify trace quantities of quartz. The colorimetric method depends upon the phosphoric acid digestion of the sample and the ultimate silica determination as molybdisilicic acid by spectrophotometric means. The x-ray diffraction method has been used by us to great extent for the determination of quartz in mineral dust, and it is this procedure that will be covered in some detail.

The x-ray diffraction method is specific and selective in identifying the three forms of SiO_2 which may be present. The filter and sample to be analyzed for quartz content are placed into a beaker containing about 50 mL of alcohol. If the matrix consists of readily acid-soluble substances such as gypsum, limestone, cement, etc., a few drops of 1.1 HCl are added to eliminate the matrix effect. The sample is subjected to ultrasonic vibration for periods of 5-10 minutes in order to remove all the dust particles from the filter. Care should be taken to keep the filter intact to facilitate extraction from the beaker. The residual matter in the beaker is then transferred to a 25 mm 0.8 micron silver membrane filter which is held in a standard vacuum filtration assembly. This results in a random distribution of the sample over a standard area, which is then compared with standard quartz on the x-ray diffractometer.

The standard quartz samples are prepared by aliquoting acid-digested minus 10 micron quartz and transferring these aliquots to silver membrane filters. X-ray diffraction peaks are established at the 3.34 Å d spacing of quartz, and the secondary line of 4.26 Å d spacing. By comparing peak heights from the test sample with the standard curve, the quartz content in micrograms is determined and the per cent quartz readily calculated from the known weight of the sample.

It is known that other minerals or substances such as mica and graphite interfere with the determination of quartz. Generally, we check the 10.0 Å d spacing mica line to detect its presence. Graphite can be eliminated by heating. The elimination of mica requires chemical treatment.

We use a potassium pyrosulfate fusion to eliminate the silicates and leave the free quartz. A brief description of this technique follows:

Weigh out approximately 2 grams of potassium pyrosulfate into a 15 ml platinum crucible. Fold the polyvinyl chloride or silver membrane filter to an appropriate size and insert under the pyrosulfate level. Cover the crucible on an open element electric heater. Heat the crucible for 12 minutes. This will melt the pyrosulfate at a low temperature and digest the filter membrane so a clear liquid remains.

Without cooling, transfer the platinum crucible from the heater to the tripod, using the porcelain triangle to support the crucible. Ignite the crucible and contents to a high temperature over a Fisher burner; the approximate temperature should be 850°C (bright red, almost orange color), for exactly one minute. The cover should be slightly ajar.

Remove the crucible and cool it to about room temperature. After the crucible has cooled, place it and the cover in a 150 ml beaker and just cover with hot water. Heat until the pyrosulfates are dissolved, then remove the crucible and cover. The sample is now ready for dispersion with ultrasonic vibration, mounting on the silver membrane filter, and x-ray diffraction analysis.

It is recognized that free quartz is slightly fusable with pyrosulfate, but relatively much less than the contaminating minerals usually found with it. Our experience has shown that the proper application of the pyrosulfate fusion to mineral dusts collected during field monitoring programs will result in no more than 15 per cent loss in quartz content. From a practical standpoint, this becomes a relatively insignificant factor when applied to the calculation of the threshold limit value.

Further tests have shown that quartz with sizing less than 0.5 microns will undergo a loss in the range of 25 per cent during the pyrosulfate fusion. We have found the pyrosulfate fusion treatment to be highly reliable in the practical determination of quartz. The fusion step is used only when mica or other silicate interferences are present.

We have now established the quartz content. This is now applied to the formula to determine threshold limit values. For example, the formula for respirable dust and total dust is referenced in MESA regulations as:

$$\text{Total} = \frac{30 \text{ mg/m}^3}{\%\text{ quartz} + 3}$$

$$\text{Respirable} = \frac{10 \text{ mg/m}^3}{\%\text{ respirable quartz} + 2}$$

Example: (Assume two percent crystalline quartz)

TLV Total Dust $= 6.0$ mg/m³

TLV Respirable Dust $= 2.5$ mg/m³

This shows that the allowable limit of airborne dust in the sampled workplace atmosphere should not exceed 6.0 and 2.5 mg/m³ respectively for the total and respirable dust fractions. The determined air contaminant levels are compared to the calculated TLV to establish compliance. To repeat, the allowable limits are dependent upon the crystalline silica content, if over one per cent.

Reports of findings prepared by the testing laboratory should be kept in the operator's files for reference purposes.

A brief excursion has been given on the detection, sampling, and analysis of free silica in airborne dust. In summary:

1. It is most important that the test laboratory be fully aware of the minerals to be encountered in any survey so that interferences can be compensated for during analysis.

2. Sampling strategy must be so regulated to enable long sampling times to establish reliable time-weighted average exposure to airborne contaminants; time and costs should be secondary considerations.

3. Proper analytical and instrumentation techniques must be applied for the true assessment of air contaminant quality and quantity, and it should be recognized that considerable research and method developments may be required to achieve this.

4. There is a growing awareness of health, and it is anticipated that there will be enlarged emphasis in the near future on the levels of airborne contaminants in the workplace and a correlation of these facts with medical history.

5. It is most important that a permanent record be maintained by the plant operators as to the air contaminant levels prevailing in their plant, mine, or quarry. All employers are responsible by law to establish these levels and to take engineering, administrative, and/or other protective measures if the allowable levels are exceeded.

75 1300

WIRE ROPE AND OSHA REQUIREMENTS

By JOHN V. SULLIVAN
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We are all aware by now of the Williams-Steiger Occupational Safety and Health Act of 1970. The agency responsible for administering the Act is the Occupational Safety and Health Administration (OSHA) of the United States Department of Labor. Congress declared the purpose of the Act, and hence the Labor Department and OSHA's mission, is "to assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources." The Act covers every employer in a business affecting commerce who has one or more employees, but does not affect workplaces covered under other Federal laws, such as the Coal Mine Health and Safety Act and the Federal Metal and Non-Metallic Safety Act.

As an employer you are required to:

1. Provide a place of employment free from recognized hazards that complies with Occupational Safety and Health Standards as spelled out under the Act.

2. Familiarize yourself with mandatory Occupational Safety and Health Standards and make sure your employees know about OSHA.

3. Examine conditions in your work place to make sure they conform to applicable safety and health standards.

4. Remove or guard hazards.

5. Make sure your employees have and use safe tools and equipment, including required personal protective gear, and be certain that these are properly maintained.

6. Establish or update operating procedures and communicate them so that employees follow safety and health requirements for their own protection.

7. Keep OSHA records of work-related injuries and illnesses and post the annual summary during the entire month of February each year, and report to the nearest OSHA area office each injury or health hazard that results in a fatality or hospitalization of five or more employees.

8. Post in the workplace the OSHA poster informing employees of their rights and responsibilities.

9. Advise OSHA compliance officers of authorized employee representatives to permit their participation in the inspection walk-around, or if there are no such representatives allow a reasonable number of employees to confer with the compliance officer during the inspection.

10. Not discriminate against employees who properly exercise their rights under the Act.

11. Post OSHA citations of violations of standards at the work site involved.

There are other requirements, so if you need further advice or counsultation you may get this by calling or visiting the nearest OSHA office. OSHA will not inspect your operation just because you call for assistance.

Along with all of the employer responsibilities there are certain rights that the employer also has. Here are a few:

1. You may request and receive proper identification of all OSHA personnel prior to inspection of your workplace.

2. You may be advised by OSHA personnel of the reason for the inspection.

3. You may participate in the inspection of your workplace with the compliance officer and in the opening and closing conferences with him.

4. You may file a notice of contest with the OSHA assistant regional director nearest you within 15 working days of receipt of a citation and notice of penalty if you disagree with the citation or the penalty proposed.

5. You may apply to OSHA for temporary variance from a standard if you are unable to comply because of the unavailability of material or equipment.

6. You may apply to OSHA for a permanent variance from a standard if you can prove your facilities or method of operation provide protection for your employees that is at least as effective as that required by OSHA, and you may be assured of the confidential nature of any trade secrets observed by an OSHA compliance officer during an inspection.

7. You may also participate in developing job safety and health standards by working with OSHA's Standards Advisory Committee.

Basically, OSHA adopts standards for safe working conditions and then conducts inspections of workplaces to determine whether the standards are being met. A safety or health standard is a legally enforceable regulation governing conditions, practices, or operations to assure safe and healthful work places. Compliance with these national safety and health standards is what a compliance officer looks for when he inspects a work place. The standards are published in the *Federal Register* along with all amendments, corrections, insertions, or deletions involving standards. At present, the standards are divided into three major categories: general industry, maritime, and construction. Since OSHA began its inspection program, it is written that in more than one out of every three work places inspected all of the required standards were met, so no citations were issued; however, I understand that during the first 18 months $2.3 million in fines were levied. As employers become more familiar with their responsibilities and recognize the positive benefits from compliance with OSHA standards, less fines will be levied. These benefits include reduced job injuries and illness rates, less downtime, improved morale, and savings in workmen's compensation insurance.

The big question in most people's minds is, When will you have an OSHA inspection? Obviously, not all 5 million workplaces covering some 60 million workers can or will be inspected immediately. The worst situations will receive attention first, so the OSHA system of priorities has been established. You will be inspected if you come under one of the following: (1) should you have a catastrophe or other fatal accident; (2) if your employee registers a complaint because of an unsafe working condition with the OSHA office; (3) OSHA has put special emphasis on target industries and target health hazards. Emphases are being placed first on investigating those industries called "target health hazards" where toxic substances are the most hazardous, and target industries have been selected with injury frequency rates more than double the national average. The Target Health Hazard program is focused on five of the most commonly used and hazardous of the more than 15,000 toxic substances. These are asbestos, carbon monoxide, cotton dust, lead, and silica.

The OSHA inspectors are professionals in the occupational safety and health field—men and women with years of experience and professional training. To be sure they meet OSHA requirements, each has received a highly specialized training course before moving into the field to make inspections, and at least once a year each compliance officer and industrial hygienist takes a refresher course plus additional training in specialized fields.

When an inspection is to be made, the compliance officer presents himself at your operation, displays his credentials,

and asks to meet the appropriate employer representative. He informs the employer of the reason for his visit and outlines in general terms the scope of his inspection. He will give you copies of applicable laws and safety and health standards and a copy of the Employee Complaint form, if one is involved. The employees name is withheld if he so requests. The compliance officer asks the employer to designate his representative for the inspection walk-around. The employer does not select the employee representative; this is done by the employee organization itself. If there are no employee groups, the compliance officer discusses the conditions with the individual employees during his inspection walk-around. The compliance officer and the employer, plus the employee representative, then proceed through the establishment and each work area is inspected for compliance with OSHA standards. He also inspects the OSHA records of deaths, injuries, and illnesses that employers of eight or more employees are required to keep and determines if the annual summary has been posted.

Numerous apparent violations may be found that can be corrected immediately. These could include blocked walkways, unsafe floor surfaces, etc. The employer representative may and should direct that they be corrected at once. Such corrections are recorded to help in judging employer good faith in compliance. During the walk-around, any employee may bring to the attention of the compliance officer any condition he believes to be a violation. After the walk-around, the compliance officer discusses with the employer what he has seen and reviews probable violations. Also discussed is the time you believe you will need to eliminate hazards.

The compliance officer then returns to his office, files his report, and discusses it with his area director. The area director or his superiors determine what citations should be issued and what penalties, if any, will be proposed. The compliance officer may not on his own impose a penalty nor can he shut down an establishment. However, OSHA can act quickly in the courts to deal with imminent danger. There are several types of violations, ranging in severity from a minor situation up to what is classified as an "imminent danger." This is a condition where a hazard exists that can be expected to cause death or serious physical harm. In this case, if the employer fails to correct such conditions immediately, the compliance officer through his director can go directly to the nearest Federal District Court for legal action as necessary. Other citations may be issued for failure to post or maintain proper OSHA records. OSHA requires employers of eight or more employees to keep certain records of job related fatalities, injuries, and illnesses. OSHA requires that only three simple forms be maintained: OSHA 100—log on which each reportable case is entered on a single line; OSHA 101—a supplementary record with details on each individual case; OSHA 102—an annual summary to be posted in the work place by February 1st of each year and kept there for one month for employee examination. If there are no recordable deaths, injuries, or illnesses, there is nothing to fill in. All employers not exempt from record keeping requirements must have the forms available when an OSHA compliance officer makes an inspection. The forms do not, however, have to be mailed to any OSHA office.

There has been a great deal of confusion among wire rope users as to the interpretation of OSHA standards as they apply to wire rope. The Occupational Safety and Health Act encompasses a great number of previous acts which were in effect in various industries for the purpose of encouraging and enforcing safety. Prior to OSHA there were specific safety rules under the Bureau of Mines which were and still are supervised by the U. S. Department of Interior. There were also gear certification regulations and longshoring regulations which applied to equipment used on dockside and on water that came under the jurisdiction of the U. S. Coast Guard. These laws have been incorporated into OSHA.

To determine which regulations apply, we must consider the location of the operating equipment; as an example, at our Armco Kansas City Works we have river docks where raw materials are brought in and finished steel products are shipped. A crane operating on this dock comes under the jurisdiction of the Coast Guard. Consequently, applicable safety regulations are listed under longshoring. Normally, in our plant we assume that general industrial safety specifications apply. If a crane is used in one of our plants, it falls under general federal regulations; if it is used for construction, it falls under those regulations written specifically for construction. This situation is also true of ropes operating on various applications in a mine or quarry.

There are several regulations which may apply to you, depending on where your equipment is operating. These are:

1. Code of Federal Regulations, Title 29, Chapter 17, Part 1910, "Occupational Safety and Health Standards," *Federal Register*, Volume 37, Number 202, Part II. (General Industry)
2. Code of Federal Regulations, Title 29, Chapter 17, Part 1926, "Safety and Health Regulations for Construction," *Federal Register*, Volume 37, Number 243, Part II.
3. Code of Federal Regulations, Title 29, Chapter 17, Part 1915, "Safety and Health Regulations for Ship Repairing"; Part 1916, "Ship Building"; Part 1917, "Ship Breaking"; Part 1918, Longshoring"; Part 1919, "Gear Certification"; *Federal Register*, Volume 37, Number 203, Part II.
4. Code of Federal Regulations, Title 30, Chapter 1, Subchapter N, Part 55, "Federal Metal and Non-Metallic Mine Safety Act." Part 56, "Health and Safety Standards, Sand, Gravel, Crushed Stone Operations," and Part 57, "Health and Safety Standards, Metal and Non-Metallic Underground Mines."
5. Code of Federal Regulations, Title 30, Chapter 1, Subchapter 0, Part 70, "Federal Coal Mine Health and Safety Act." Also "Mandatory Health Standards for Underground Coal Mines," Part 71; "Health Standards for Coal Mines, Surface Work Areas," Part 75; "Mandatory Safety Standards, Underground Coal Mines," Part 77; and "Mandatory Safety Standards, Surface Coal Mines and Surface Work Areas of Underground Coal Mines."

Obviously, considerable duplication exists among the various federal safety regulations. Practically speaking, we can break the regulations into five areas (in terms of their application to wire rope use). The five areas are: (1) wire rope for general industrial use; (2) wire rope for use in construction; (3) wire rope used in longshoring, shipbuilding, ship repairing, and gear certification; (4) wire rope used in mining; and (5) wire rope slings, regardless of where they are used.

I've discussed this situation with officials of MESA, the Mine Enforcement and Safety Administration, and with OSHA personnel, and apparently MESA has jurisdiction over anything concerned with the raw material from the mining operation through crushing. After the raw material loses its identity by, for instance, mixing with another material, it falls under the jurisdiction of OSHA.

For our purposes, the Mine Enforcement and Safety Administration operates under the mandatory guidelines as spelled out in the Federal Metal and Non-Metallic Mine Safety Act, Parts 55, 56, and 57.

The Code of Federal Regulations, Title 29, Chapter 17, Part 1910, covering general industrial, lists wire rope applications such as overhead and gantry cranes, locomotive and truck cranes, and derricks. For overhead and gantry cranes, several applicable rules must be followed. Hoisting ropes for this equipment must follow the recommendation of the crane manufacturer, and rated load divided by the number of parts of rope shall not exceed 20 per cent of the rope's nominal breaking strength. This means you must operate with at least a 5 to 1 safety factor. Replacement rope shall be of the same size, grade, and construction as the original rope supplied by the crane manufacturer unless otherwise recommended by a wire rope manufacturer due to actual working condition requirements. There shall be at least two wraps of rope on the drum for this equipment when the hook is in extreme bottom position. Any slings used in conjunction with this equipment shall be checked visually every day —and monthly with a signed inspection report. All ropes on the hoist shall be inspected at least once a month, with a full written report. This report should be signed, dated, and kept on file for review by OSHA inspectors.

A number of factors determine whether a rope should be replaced. Rope should be replaced if its diameter is reduced be-

low the nominal diameter due to loss of core support, internal or external corrosion, or wearing of outside wires. Several broken outside wires and the degree and concentration of breaks are also reasons for replacement. Corroded or broken wires at end connections should be checked visually to help determine if the rope is adequate for the job. Other potential danger signals are kinking, crushing, cutting, and unstranding. Rope that has been idle for one month or longer should be thoroughly inspected before it is placed in service. This same inspection holds true for rope used on crawler locomotive and truck cranes and derricks. A competent person designated by the employer should make these inspections. He must be capable of identifying hazards and have the authorization to take prompt corrective measures to eliminate them. He must be trusted to make good judgment as to when rope approaches a danger point.

In cases where failure might endanger life or equipment, the following procedure has been adopted. Rope should be retired if: (1) there are six broken wires in one rope lay (a rope lay being the linear distance for one strand to go completely around the rope); (2) there are three broken wires in one strand of a rope lay; (3) there is wear on one-third of the original diameter of the outside individual wires; (4) there are severe kinks, crushes, cuts, unstranding, twists, deformed or flattened wires, and shortened or lengthened rope lays; (5) there is heavy corrosion in the valleys, corroded or pitted surfaces; (6) there is evidence of birdcaging; (7) there is heat damage to the rope from any cause.

If you are checking rope diameter by measuring with calipers, the following fractions are the maximum tolerable wear for safe use: 1/64" for diameters to 5/16"; 1/32" for diameters from 3/8" through 1/2"; 3/64" for diameters from 9/16" through 3/4"; 1/16" for diameters from 7/8" through 1 1/8"; 3/32" for diameters from 1 1/4" through 1 1/2". For large diameters, you should gage accordingly.

For special application ropes such as elevator ropes there are provisions in ANSI A17.1 which should serve as guidelines. However, elevator rope inspection is usually included in service contracts.

For ropes used in construction applications, it is further stated that a rope shall be taken out of service if there is any evidence of heat damage (which should always be done).

For personnel hoists, the minimum number of hoisting ropes used shall be three for traction hoists and two for drum types. The minimum diameter of personnel hoist and counterweight ropes shall be 1/2-inch.

There is an additional inspection procedure for ropes that are called standing ropes—guy lines, pendant lines, and so on. If two broken wires are found in one lay beyond a connection, or more than one broken wire at an end connection, there is good reason to expect internal failure, and consequently the line should be replaced.

Wire rope used in shipbuilding, ship repairing, and longshoring comes under Title 29, Labor Chapter XVII, Occupational Safety Health Administration, Department of Labor, Parts 1915, 1916, 1917, 1918, and 1919. A crane operating on your dock only on a part-time basis to help unload barges could easily be checked under this requirement. Regulations require that any wire rope shall not be used for the above purposes if, in any length equal to eight diameters, the number of broken wires exceeds 10 per cent of the total number of wires or if the rope shows any other signs of excessive wear, corrosion, or other defects. Mechanical splices or handtucked splices may be used to form end connections provided they have at least three full tucks. As a rule, wire rope clips may not be used except to guy dead ends or stationary lines.

In no case shall wire rope be secured by knots, except in haul-back lines of scrapers. No slings shall be used with their eyes formed by wire rope clips, and there shall be no wire ropes used which have been formed by various types of splices of different length ropes. When wire rope is used on machinery coming under the longshoring, ship building, gear certification requirements, there should be on file a wire rope certificate of test. (This does not apply to slings, which are covered under a special section by size and grade.)

We are encountering many different opinions concerning the fabrication and use of slings. Slings are presently covered under three different sections in the OSHA laws. At this time, OSHA has not completed a section on slings, but we can be sure that specific criteria will be forthcoming. There are standards on the use and care of slings which are presently in force in selected industries such as shipping and construction, and these provide some guidance for sling inspectors.

ANSI Standard B30.9 specifies that a wire rope sling should be removed from service anytime any of the following conditions are detected: ten randomly distributed broken wires in one rope lay, or five broken wires in one strand in one rope lay; kinking, crushing, birdcaging, or any other damage resulting in distortion of the wire rope structure; evidence of heat damage; end attachments that are cracked, deformed, or worn; hooks that have been opened more than 15 per cent of the normal throat opening measured at the narrowest point, or twisted more than 10 degrees from the plane of the unbent hook; corrosion of the rope or end attachments.

Every sling should be inspected before every lift, and it should be kept in mind that the manufacturer's rated capacity applies only to a new, unused sling.

75 1301

LABOR LOOKS AT SAFETY PROGRAMS IN THE MINERAL INDUSTRY

By DONALD L. SPATZ
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From the union's point of view, our prime contact area on matters of safety and health is the plant-level joint safety and health committee. Virtually all of our labor agreements provide for some sort of joint committee to deal with both safety and health hazards. The contract language dealing with joint safety committees was renegotiated in 1973. In the United States cement industry there is virtual uniformity in the contract provisions dealing with safety and health.

We might think that such uniformity of language would bring uniform programs and uniform success in solving safety and health problems, but such is hardly the case. My first observation about safety programs in the mineral industries—and in the cement industry specifically—is that there is a hodgepodge of safety programs within the industry. Some companies have vigorously tackled safety and health problems in the industry without the threat of union action or government action. Others have vigorously attacked even the concept that employees have the right to have a full and complete input into the conditions under which they work.

The improved contract language negotiated in 1973 was aimed primarily at those employers who took the position that they had no need to meet regularly with their employees and had no need to consider the constructive recommendations of their employees. In our proposed contract language in 1973, we attempted to pin down management's responsibility to implement corrective measures based on employee suggestions. Yet in some companies the inventiveness of management in interpreting contract language is mind boggling.

In surveying our local union safety committees to determine how well they were functioning under the new language, we received responses such as, "At our monthly meetings the chairman gives us a lecture on production," or "Foot dragging, broken promises, and the lowest priority on safety work to be done." In these circumstances the International Union's policy is to file a complaint with the appropriate government agency and

demand a complete inspection of working conditions.

We think many safety and health problems can be solved at the local level. Safety and health has been an area where the union has felt there should and can be good cooperation between labor and management. In those cases where there is no cooperation, our local unions are forced to call upon external help. There is also the option of bargaining for stricter and more specific contract language on safety and health, and I am sure some of our local unions will be preparing proposals to that effect for 1975.

According to reports by our plant safety committees, their major problem areas are dust, housekeeping, noise, and heat. We view housekeeping as a local problem that should be solved on that basis. Dust, noise, and heat are recognized hazards in nearly all mineral industries—and specifically in the cement and lime industries. These should be solved at an industry-wide level, but there is little indication that this is being done.

Noise control and abatement is a prime example. A few companies have had noise measurement, noise reduction, and hearing conservation programs for many years. Yet, other companies have yet to even conduct baseline audiograms for their employees. We have heard and read many negative comments from employers over first-instance sanctions and the burdens of complying with OSHA standards, but the fact of the matter is that some companies will not move until they are forced.

We support the adoption of a noise standard of 85 decibels. It is our position that it would be more economical to engineer now to an 85 decibel level than to settle for 90 decibels now and reduce it to a lower level in the future. Whether compliance is achieved three years from now or five years, the engineering and planning must be done now to meet the best medical standards for prevention of hearing loss.

We also strongly support the medical surveillance program in the proposed noise standard. As I said earlier, there are many employees working in the mineral industry that have never had baseline audiograms or periodic examinations.

We find it ironic that after OSHA had proposed a new noise standard, the Mining Enforcement and Safety Administration finally got around to promulgating the old OSHA standard. The Metal and Nonmetallic Mine Safety Act was enacted in 1966. It took eight years to promulgate a weak mandatory noise standard that does not even provide for a hearing conservation program. MESA and its predecessor—the Bureau of Mines—have been characterized by weak standards and ineffective inspection and enforcement procedures. We support, along with the Steelworkers, the Mine Workers, and other unions, legislative action to consolidate all federal safety and health enforcement activities under the Department of Labor.

I mentioned dust and heat as two other hazards repeatedly emphasized by our local unions. In some areas of the country progress is being made in controlling exposure to excessive heat. In cases of continuous exposure, air-conditioned cabs and other enclosure arrangements are either being negotiated or agreed upon by the joint safety committees. For intermittent exposure, such as entering coolers and other hot environments, specific time limits are being agreed upon. Heat shields to deflect radiant heat are also being provided in some locations.

This progress is by no means uniform throughout the country, however, and this is certainly one area where safety programs on an industry-wide basis must be improved. Most likely it will require promulgation of the recommended heat stress standard by OSHA to shock some companies into acting on this problem.

Dust and its corresponding problem of housekeeping is considered a major hazard by three out of every four of our local unions. Medical evidence suggests that much of the dust in and around cement plants cannot be dismissed as nuisance dust. The prevalence of free silica at concentrations high enough to cause disease is apparent as more evaluations are made around the country. Asbestos-mixing operations, the use of grinding agents, and collector dust are all areas of employee concern.

Dust problems can be solved by sound engineering procedures, regular maintenance, and strict housekeeping procedures. Medical monitoring programs for

detecting silicosis should be established. We think industry-wide medical studies should be instituted. Recent European studies show measurable chronic non-specific lung disease in cement workers when compared to the general population. Where are the studies of cement workers in the United States and Canada?

According to the National Safety Council, the work-injury frequency rate for the cement industry in 1973 was much higher than any other year in recent history. The toll of disabilities and deaths in other mineral industries is twice that of cement manufacturing. Our members want a reversal of this trend and our union is willing to cooperate with management on both a local and industry-wide basis to do this. But slogans, posters, and safety picnics are not the answer. We want to see effective joint safety and health committees and good-faith action by management.

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March 21, 2001

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Respectfully,

Robert J. Marecek

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Notary Public, State of Illinois
My Commission Expires 10/26/03