

Sherwood Mott

TO: Leominster Supervision

FROM: W. J. Holloway

LOCATED AT: Leominster, Mass.

SUBJECT: SAFETY

DATE: March 21, 1966

The attached perspective will be the guide for all decisions in regard to safety problems on the Leominster site.

Please study it carefully. It is your responsibility to understand it, getting as much help from your supervisor as necessary to be able to apply it to your assigned area.

This perspective will also serve as a memory jogger that we haven't forgot any of the programs already started.

It is my intention to keep after this until every man on the site becomes safety conscious.

"A moment spent on safety may prevent an eternity of suffering."

W. J. Holloway
W. J. Holloway
Works Manager

BOR 005777

PERSPECTIVE ON SAFETY

It has been said that there are four requirements for an effective safety program.

1. Top Management Leadership
2. A Safe and Healthful Place to Work
3. Proper Training and Supervision
4. Employee Participation and Interest

The Seminar on January 22, 1966 made crystal clear through several levels of supervision that Borden's interest in safety is much higher than was generally thought to be. It also obtained a mutuality of understanding regarding the safety problems of the various groups represented.

This gives us a firm basis from which to proceed with the development of a good and lasting safety program. So let's all get a perspective on it that can be used as a guide to daily action.

DEFINITIONS

Absolute Safety is Elimination of Exposure ("No Sharp Edges")

Practical Safety is Reduction of Exposure

Our Safety Program is Reduction through Understanding of Exposure

or the concept of R U E

Taking these letters in reverse order:

1. What constitutes E ?

All the known and unknown exposures of our operations, such as:

- (a) Exposure to cuts and bruises - sharp edges, head knockers, hand and power tools of all kinds, flying chips from percussive tools, etc.
- (b) Exposure to body strains - lifting too much or improperly, working in awkward positions, strain due to a second person involved in the job, etc.

- (c) Exposure to uncontrolled sources of normal energy - steam hoses, air hoses, line breakages of all kinds, steaming lines, electrical shocks, excessive heat, excessive cold with all their ramifications, etc.
- (d) Exposure to chemicals - any kind or degree of toxicity, anesthesia, or chemical burn, etc.
- (e) Exposure to falling - unprotected heights, poor stairs, improper ladders, large openings in tanks and vessels and sewers, slippery or poorly lighted walk areas, poor housekeeping, etc.
- (f) Exposure to explosions - explosive mixtures and sources of ignition in tanks, buildings and enclosures, even outside. This includes all sources of static generation as well as normal ignition of explosive mixtures. Almost any fire, if allowed to go unchecked, could lead to explosion, etc.
- (g) All other exposures.

2. What constitutes U ?

Understanding in this context means "Our understanding of the problem" in such a complete light that we, therefore, know how to deal with it.

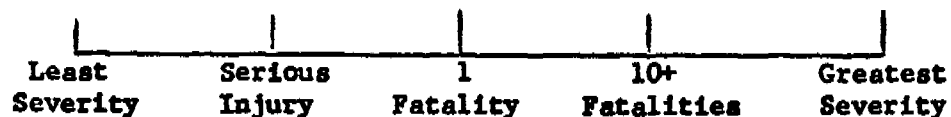
Once we get the proper perspective on the problem it will become clear what approach or combination of approaches should be used to reduce the exposure.

One of the best techniques for getting this perspective at any problem area in the plant is to stand back a little and say, "What is the worst thing that could happen here?" Then pursue the thought with such questions as, "How likely is it to happen?", "What would I do if it did happen", "What training should I do to prevent its happening?", "What simple change in equipment would reduce the hazards?", or "Is it a big hazard no one else has yet recognized?"

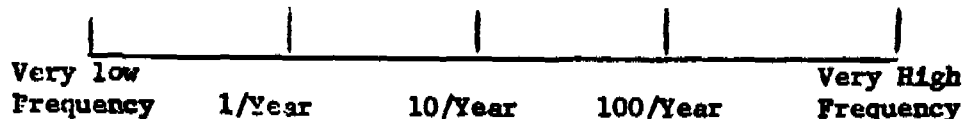
Having asked these questions, let's now look at "Understanding" on the rather simple basis of (1) Severity and (2) Probable Frequency per the following scales:

1. Severity

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2. Probable Frequency



Every exposure we have could be plotted somewhere on the above two scales. Our objective is to bring each problem as far to the left on the above scales as possible.

The approach to high severity exposure is to use the best mechanical safeguards possible, plus whatever training is required to insure proper use of these. Early warning and good defensive systems are also required. This applies to operational defensive systems as well as fire and explosion defensive systems.

When the severity is very low, the approach is usually to correct the "probable frequency" through awareness training.

Very high frequency situations usually require a combination of protective devices and awareness training.

3. What constitutes R ?

Every step that is taken to reduce the exposure and make this a safer place to work, such as:

- (a) Improved design and layout of equipment such as kettles, manholes, safety devices both automatic and manual, alarm systems, gratings, railings, size reduction of vessel openings, equipment guards, inerting systems, ventilation systems, head space, work areas, etc. are in this category.
- (b) Care for the upkeep of all mechanical and safety aspects of the facilities. Avoid deterioration. V-belt check schedules, inert gas monitoring, fire protection and emergency equipment check lists are all in this category.
- (c) Early warning and defensive actions well trained into the people. This applies to any situation or exposure where there is a time lapse between the first signal of danger and the point where it gets out of control. Fire, leaks, chemical reactions, polymerizations, and some equipment problems are treated this way. All of the drilling of brigades and production people are connected with this aspect.
- (d) Setting clear cut limits on certain operations where you don't allow continuance if they are worse than the safe limit. This applies to fork lift trucks as well as kettles, mechanical drives, etc. In these cases, it is your responsibility to know or find out who has retained the authority to make the decision, if the limit point isn't understood.
- (e) Awareness leads to avoidance of exposure, technical understanding through the present Technical classes will reduce exposure. Most of the teaching and trainings are based on this principle. Since experience is the best teacher, in depth reviews of all incidents and accidents is very important.

- (f) The achievement of a Safety Attitude by each man is very important. This is a very personal matter and is affected by the overall climate. Motivational forces tailored to each man must be brought to bear constantly by his supervisor. It is not a simple matter of disciplinary measures vs. selling. It is every supervisor's responsibility to his men, as well as to himself and the Company, to make an honest effort every day to improve the Safety Attitude of his men. Weekly meetings, movies, and demonstrations are for the purpose of achieving a safety attitude.
- (g) The physical health of each man must be taken into consideration. This applies to his treatment in general by the supervisor, as well as job assignments. Physical examinations will become part of the safety program.
- (h) The recognition of new situations - New employees, new installations, time deterioration of old installations, changed complexity and mass must all be considered for their effect on safety. Retained authorities by the Works Manager recently published are intended to help keep everyone aware of these recognitions.

RUE

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