Are we abating hazards or blaming behavior?

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As I write this month's column, I draw my thoughts from the National Conference on Worker Safety and Health, which I recently attended.

Those of you who know me know that my father began his career as a professor of engineering, and when we came to the United States, he became an aerospace engineer. He worked on the engineering teams that imagined and designed the vehicles that took us into space and to the moon. The last project he worked on before his retirement was the space shuttle.

In one of the workshops, we were presented with photos of highly recognized disasters, including the Jan. 28, 1986, explosion of the Challenger space shuttle just moments after takeoff. Just seeing that image on the screen took my mind back to the Sunday before the disaster and a conversation that I had with my father. We were watching TV, and he became concerned over the fact that the media was reporting that there was a serious cold spell in Florida, but the plans were to go forward with the scheduled launch.

He shared that the shuttle was not designed to take off in extreme cold, and that something terrible would happen if it did. He was distressed, but was retired and had neither say nor influence on the decision-making process any longer.

On the morning of the 28th, while making a station visit to my home station, the news broke that Challenger had exploded. I stopped by my parents' home on the way to the office to find my dad in tears.

The October 1986 Report to Congress of the Committee on Science and Technology at page 9 commented that:

> ...The joint seal problem was recognized by engineers in both NASA and Morton Thiokol in sufficient time to have been corrected by redesigning and manufacturing new joints before the accident on January 28, 1986. Meeting flight schedules and cutting cost were given a higher priority than flight safety...

That last comment sounds like the average day at the post office. Productivity over safety.

As I sat in this week's workshops, the trainers used the term "hierarchy of control," which you can find at osha.gov in its safety training material and in the diagram at right. OSHA states that:

The first and best strategy is to control the hazard at its source. Engineering controls do this, unlike other controls that generally focus on the employee exposed to the hazard. The basic concept behind engineering controls is that, to the extent feasible, the work environment and the job itself should be designed to eliminate hazards or reduce exposure to hazards.

Engineering controls can be simple in some cases. They are based on the following principles:

If feasible, design the facility, equipment, or process to remove the hazard or substitute something that is not hazardous.

If removal is not feasible, enclose the hazard to prevent exposure in normal operations.

Where complete enclosure is not feasible, establish barriers or local ventilation to reduce exposure to the hazard in normal operations.

OSHA points out that the least effective ways to prevent an accident are to develop administrative controls (like telling you not to have an accident) or requiring you to use personal protective equipment.

Behavior changes do not abate a hazard. They just teach us to work around it.

It is easy for your supervisors and managers to point to your behavior and accuse you of not following their instruction to be safe. We need to point out the hazards and find a way to eliminate them.

Each and every day that you go to work, you should be asking yourself, "What is going to hurt me or kill me?"

When you identify something, you should write it up and make recommendations. Get involved in safety. Help your union to work toward a safer work environment.

Hierarchy of Controls