Rapporteur's Report

Transportation, Warehousing, and Utilities Sector

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1. Introduction

The Transportation, Warehousing and Utilities Super sector is made up of two parts: the Transportation and Warehousing Sector and the Utilities Sector. The Transportation and Warehousing Sector includes industries that provide: transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation-related facilities as a productive asset. The type of equipment depends on the mode of transportation, which includes air, rail, water, road, and pipeline.

The Utilities Sector contains establishments that provide the following utilities and associated activities: electric power, natural gas, steam supply, water supply, and sewage removal.

More than 7 million workers in transportation, warehousing, and utilities industries are at risk for fatal and nonfatal injuries. Occupations within these industries account for 5% of U.S. workers and 15% of workplace fatalities. In addition to being at risk of fatal injuries, workers in these industries are at risk of injury or illness from transportation incidents, overexertion, electrocution, vehicle emissions, and falls.

2. Most Compelling Idea/Recommendation to Come Out of the Discussions

There were at least three overarching themes identified by the workgroup that crossed all four Prevention through Design (PtD) functional areas in the Transportation, Warehousing, and Utilities Sector:

1. There is a need to involve the users, typically the workers, during the initial planning process, as well as continuously throughout development and use of PtD initiatives.
2. The National Institute for Occupational Safety and Health (NIOSH) and its partners will need to collaborate with other groups to get PtD incorporated into thought processes. These groups include: associations, schools, companies, unions, and the public sector.
3. To convince businesses of the value of PtD, NIOSH and its partners need to develop a business case to prove that it is cheaper to design it properly, rather than to rework or retrofit it.

3. Practice (Needs, Challenges, Opportunities)

Worker input during design is absolutely critical. The people performing the work are in the best position to suggest design improvements for rework and design considerations for new work. Management must commit to act on the input received from the workers. One means to obtain that commitment is to incorporate PtD into management systems, such as the American National Standard Institute (ANSI) Z-10.

NIOSH must strive to develop business cases in order to foster this management commitment. Both large and small employers are often motivated by business decisions. Small businesses can not afford a mistake resulting in a costly redesign, so it is imperative that they see the benefit of the initial investment in PtD. When considering the initial costs associated with PtD efforts, large businesses will also find 'Return on Investment' studies very compelling. If enough case studies are developed, businesses will likely incorporate PtD efforts into their strategic plans.

The workgroup felt that NIOSH has a clear role in helping companies adopt PtD principles. Summarized below are a number of specific efforts the workgroup identified that NIOSH needs to act on:

- To clear up confusion, it was suggested that NIOSH define PtD, and the role of different personnel involved in facilitating it, more concisely.
- In order to develop the case studies mentioned above, NIOSH should put together a stakeholder consortium to identify best practices and develop case studies around those.

- A model of the PtD process – how to initiate, conduct, and complete a PtD initiative – developed by NIOSH, will be very useful to individuals and organizations that are not familiar with the concept of PtD.
- A web-based database compiling guidelines, and other cost-effective solutions that are based on PtD, will serve as a valuable resource. The database should distinguish between government- and municipality-based PtD initiatives and those for private initiatives.
- NIOSH should collaborate with interested professional associations to encourage the adoption of PtD principles by their members and organizations.
- NIOSH should act as an intermediary, or a liaison, to allow companies to find others ahead of the curve with whom they might partner.
- NIOSH should work with other parts of the federal government to develop incentive programs to encourage corporate adoption of PtD principles.
- It was suggested that NIOSH look outside the United States to see what other countries have adopted PtD principles. The European Union risk assessment document and the Australian risk assessment guidelines were two that were specifically identified by the workgroup as being useful (EEC Council, Australian Safety and Compensation Council).

4. Policy (Needs, Challenges, Opportunities)

One major barrier to the adoption of PtD principles is that the perception of risk differs with each person. There were no specific suggestions on ways to overcome this obstacle.

A number of policy suggestions were outlined by the workgroup. These suggestions can be segregated into two major groups: Business Policies and Government Policies.

4.1. Business Policies

- Senior management must be engaged and supportive of PtD principles, and mid-level and lower management must enforce the utilization of these principles. In order for this to happen, it was suggested that businesses modify their performance evaluation process to include a safety component. Specifically, management bonuses should be based on safety performance, by measuring the successful adoption of PtD principles.
- Business awards, both internal (corporate) and external (associations), should be developed to encourage PtD.
- Corporations should work to develop a voluntary consensus standard on PtD. Similarly, PtD principles can be incorporated into the ANSI or International Standards Organization standards, such as the ANSI Z-10.
- Companies should strive to adopt management processes that incorporate PtD principles.
- Contractor bidding processes should include worker safety and PtD principles.
- Partner with insurance providers to encourage companies to use PtD processes, by offering incentives to companies that incorporate safety measures.

4.2. Government Policies

- The federal government can offer tax credits for safety programs utilizing PtD incentives, or reduce the number of regulations in exchange for incentives.
- An alternative to fewer regulations and more tax incentives is the incorporation of PtD principles into Occupational Safety and Health Administration (OSHA) regulations. For example, in 2001, in response to Congressional action, the Bloodborne Pathogens standard (29 CFR 1910.1030) was modified to include a requirement that employers utilize safer needle technologies and include employees in the selection process.
- OSHA can develop a voluntary initiative (such as Voluntary Protection Programs) focused on PtD.
- NIOSH can incorporate PtD into the NORA process. (Note – NIOSH representatives indicated that the NORA process does include PtD principles.)
- The government can develop awards to recognize those corporations that have successfully adopted PtD.
- NIOSH can partner with other government agencies, including the Department of Transportation and the National Transportation Safety to encourage the adoption of PtD principles into regulations and recommendations developed by these agencies.
- NIOSH should identify a community of interested partners and proponents, including any number of associations with whom they could work, to advance PtD principles.

5. Research (Needs, Challenges, Opportunities)

The workgroup struggled with this issue, as it was not clear who was intended as the audience for PtD research. Was the research to determine how to better utilize PtD principles? Was it to encourage the adoption of PtD principles? Or was the research intended to further the understanding of PtD itself?

The workgroup identified a number of barriers to PtD research. They are summarized below:

- The workgroup felt that even among the PtD conference participants there was not a clear belief in PtD principles. It is uncertain as to whether this lack of belief was in the PtD principles (that safety can be designed into a product, facility, tool, etc), or that PtD was not an original concept, but rather a regurgitation of the fundamental tenets of the safety and health profession – namely the hierarchy of controls. The penultimate goal of every safety and health professional is (or it should be) to eliminate the hazard.
- The workgroup also expressed concern that the value of PtD is not clear to the individuals and organizations who are ultimately expected to adopt PtD principles.
- The lack of educational programs aimed at PtD.
- Money, data, and time are all missing, and are viewed as barriers to further research into PtD.
- There appears to be a lack of openness among private industry that will be a barrier to PtD research. Private industry is reluctant to share their research with other companies and organizations, including the government.

In order to further PtD research efforts, the workgroup identified the following needs:

- NIOSH should conduct sector-specific surveys to identify research needs, present research underway, and any information regarding PtD projects that are currently in place.
- NIOSH should conduct research into exposures and design solutions. The workgroup encourages NIOSH to develop partnerships with companies in order to conduct this research and develop trust.
- Corporate partners need to feel confident that their interests will be protected before they can be encouraged to share their data with the government. Therefore, NIOSH needs to build trust with corporations to expand government-corporation partnerships.
- NIOSH, and their research partners, need to identify knowledge gaps in engineering and use this to target engineering students and engineers (see Education below).
- The development of a series of questions for use during the design process will be useful to raise PtD awareness. This instrument could serve as a tool for engineers who lack an understanding of PtD principles.
- NIOSH should encourage researchers to target research with broadly useful results.
- NIOSH should expand its partnership concept (Center to Protect Workers Rights, for example) to other sectors.
- Ultimately, funding will need to be made available to researchers to conduct PtD research.
- NIOSH should work with its partners to implement peer-to-peer executive forums as a means of encouraging the implementation of PtD, and to track the diffusion and implementation of PtD principles.

6. Education (Needs, Challenges, Opportunities)

The primary obstacle to education about PtD is the difficulty NIOSH and its partners will face when trying to change curricula at the university level. Therefore, most of the suggestions generated by the workgroup were intended to educate PtD users after they leave their educational institutions. A number of ideas on how to educate people about PtD principles are outlined below:

- There is a need for both a targeted and a broad outreach effort. Conferences of safety and health professionals, engineers, and business leaders can be used to disseminate PtD information. Tradeshows, professional societies, and even a specialized curriculum, can also be used to promote PtD.

- Parties responsible for professional certifications should incorporate PtD concepts into the required knowledge base for the certifications.
- Continuing education classes can be used to educate engineers, business leaders, and even safety and health professionals.
- NIOSH sponsored PtD classes/presentations at industry-based and international union conferences.
- NIOSH should develop PtD 'champions' to speak at conferences and to conduct outreach efforts. Participants at the PtD conference can be a source for these champions.
- Recruiting PtD champions will be easier if NIOSH developed presentations that can be customized and utilized for outreach effort.
- NIOSH should develop a certification program in PtD.
- Other venues that can be targeted for outreach include: online business education programs, professional journals, trade magazines, and distance learning education programs.
- A specialized training module can be given as a professional development course at professional conventions and expos.
- This same training module might be adopted by academic and university classes that are interested in the issue, as well as by presenters at business management symposia.
- The George Meany Center can utilize the training module, as well as other materials, to develop a certificate program.

7. Discussion

The members of the Transportation, Warehousing and Utilities Sector workgroup identified a number of ideas for addressing the questions NIOSH presented around the four functional areas: policy, practice, education, and research. The group attempted to outline the specific goals and/or important areas of focus, determine means to overcome barriers and use drivers to promote each of the functional areas, and identify immediate action opportunities for each of these functional areas.

While the following three items were used to summarize the discussions, they do not incorporate all of the ideas put forth by the members of the workgroup. NIOSH is encouraged to evaluate each recommendation in this document.

There is a need to involve the users, typically the workers, during the initial planning process, as well as continuously throughout development and use of PtD initiatives.

NIOSH will need to collaborate with other groups to get PtD incorporated into thought processes. These groups include: associations, schools, companies, unions, and the public sector.

To convince businesses of the value of PtD, NIOSH and its partners need to develop a business case to prove that it is cheaper to design it properly, rather than to rework or retrofit it.