

SESSION E Prevention Through Design (PtD)

Presentation by

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Prevention Through Design (PtD)

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Is This a New Concept?

- No
- It is an extension of legacy concepts
- Definition (NIOSH) PtD encompasses all of the efforts to anticipate and design out hazards to workers in facilities, work methods and operations, processes, equipment, tools, products, new technologies, and the organization of work.
- In Plain Language... PtD encompasses all efforts to **anticipate and design out hazards to workers** in everything they encounter and touch.





PtD Partner Organizations

- For more information about PtD partner organizations, please visit their Web sites:
- - American Industrial Hygiene Association: http://www.aiha.org/
- — American Society of Safety Engineers: http://www.asse.org/
- — Association of Equipment Manufacturers: http://www.aem.org/
- — The Center for Construction Research and Training: http://www.cpwr.com/
- — Kaiser Permanente: https://www.kaiserpermanente.org/
- Liberty Mutual: http://www.libertymutualgroup.com/omapps/Content Server?pagename=LMGroup/Views/LMG&ft=3&fid=1138364006146&In=en
- — National Safety Council: http://www.nsc.org/
- - Occupational Safety and Health Administration: http://www.osha.gov/
- — ORC WorldwideTM: http://www.orc-dc.com/
- — Regenstrief Center for Healthcare Engineering: http://www.purdue.edu/dp/rche/

NIOSH Resources

How is this Concept Used Today?

- Historically in the Space Program by NASA
- Historically and Currently in Transportation Manufacturing
- Applied in Design of Robotics Systems
- Examples:
 - GE Collaborative Robots
 - Ford
- OSHA https://www.osha.gov/shpguidelines/hazard-prevention.html

Where to Begin...

- Hazard Assessment 101
 - JSA
 - JHA
 - Root Cause Incident Analysis

Other Steps and Resources

- Borrow from the "process" industries
 - Refining
 - Chemicals
 - Aerospace
- Borrow from Lean Manufacturing Methodologies
 - Six Sigma
 - Kaizen

Borrow from Business/Life Systems Experts

- Steven Covey
 - The Seven Habits...
 - Habit 1 Be proactive
 - Habit 2 Begin with the end in mind

Apply Risk Assessment and Management

- Apply tools that will help use design and build safety into:
 - Products
 - Systems
 - Tasks
 - Procedures
- Shift our view to forward thinking rather than rearview thinking

Industry Wide Equipment Design Changes to Protect Worker Health 1990s, The National Asphalt Pavement Association (NAPA) collaborat- ed with industry partners, labor, and NIOSH to Case Study 1 address concerns about the hazards of asphalt fumes for paving-site workers. Prevention Lead to U.S> Industry wide engineering control modifications to highway paving through machines • Result – Asphalt fumes removed from the Partnerships vicinity of workers Industry partners entered into a voluntary agreement with OSHA to include the ventilation controls into every U.S. manufactured highway-class paver





Potential Takeaways Research: Identify high hazard/risk tasks and operations Prioritize them Educate: Top Management; Supervisors/Leadership; Engineers/Designers; Suppliers; EHS professionals; workers/employees

- Cover PtD methods; train to incorporate into project development; include in incident analysis
- Practice: Implement and apply PtD knowledge and skills
- Policy: Develop a policy around PtD and build into existing procedures

Questions/Discussion

• THANK YOU!