Background and Purpose

The ultimate test of effectiveness of health and safety training is the production of positive changes in health and safety practices and culture within the workplace over time. U-M conducted a pilot longitudinal study of the 40 hour Technician Level IER training at a heavy duty truck facility to assess the longer term effects of training at the individual level.

Effects explored included:
- Knowledge retention on a variety of key concepts related to the Technician level training
- Transferability of the training to a variety of situations
- Assessment of real organizational or behavior change in emergency drills or actual emergency
- Spillover effects from training on workplace culture, satisfaction with union and employer, and level of participation in workplace improvements

Research design
- A pre and post training assessment form was used during the initial IER training.
- Participants completed a comparable assessment survey at intervals of two months, six months, and approximately one year post training.
- On-site interviews with the participants were also conducted one year post training.
- Sixteen employees participated in the initial assessment. Nine of the original group participated in the assessment at one year.

Summary of study influences and outcomes

Measurable outcomes/ findings:
- Training identified deficiencies and gaps in ability to respond to a hazardous emergency/ incident
  - The team was not large enough to adequately respond to an emergency
  - Second and third shifts were under-represented
  - The need for structured coordination with outside emergency responders to assist in an emergency
- The Health and Safety (H&S) Representative used the assessment form as a tool to determine weak areas of knowledge to help focus the periodic drills and training updates.
- Training resulted in acquisition of an emergency response cart and purchase of equipment
- Training resulted in regular drills and training updates
- There were measurable changes in “spill over” effects during the one year period following the initial training. These were represented in changes in the following items:
  - My coworkers encourage each other to follow good health and safety practices
  - My supervisor insists that we follow health and safety procedures
  - We have periodic emergency response drills
  - Hazardous materials are properly labeled in my workplace
  - I have the power to improve health and safety practices in my workplace
  - I am confident of my role during a hazardous material emergency
  - My suggestions on health and safety issues are encouraged
  - My coworkers look to me for information on hazardous materials
  - I have the respect of my coworkers
- An initial review of the company Core Safety Value by corporate (initiated by H&S Rep and H&S Manager at this facility following training) was under discussion at the one year interval.
- The response team membership is dynamic. Within six months a large number of initial group retired or changed jobs.

Potential influences that stayed the same over course of study:
- Health and safety management stayed the same over the course of the study.
- Corporate health and safety policies stayed the same over the course of the study

Changes over the course of the study that possibly influenced results:
- Retirement of approximately half the group of initial trainees
- The population of each periodic assessment varied. The H&S Rep handed out the surveys to those who showed up for HAZMAT drills. Attendance depended upon who could obtain a release from their job duties to attend.

Discussion:
- Dynamic nature of response team membership challenges the ability of the on-site team’s ability to respond to a hazardous emergency. The team is staffed by an all-volunteer force.
  - Risk associated with the responder role may deter many possible employees from volunteering.
  - Lack of proper membership on the team and lack of fully equipped teams on the second and third shifts limits the ability to adequately respond to an emergency.
- Participants mentioned the need for better coordination with outside response teams to ensure that if an emergency occurs, there will be a structured and organized approach for response.
- Assessment can be useful as a training/ drill needs indicator
- Possible explanations for changes/ outcomes
  - Training increased awareness
  - Trainees served as “change agents” within the plant
  - Other possible explanations for observed changes/ outcomes:
    - Unaccounted for influence that may have driving force behind initiation of original training
    - Unaccounted for influence in safety culture that increased safety awareness and behaviors

Next Steps

Working with the UAW Health and Safety Department, the U-M will invite at least one other facility which is initiating an IER Operations and/or Technical level training to participate in a similar longitudinal study over a one year period. In addition to the individual outcomes assessment, additional outcomes measures at the organizational level will be explored with the participating organization.