

ERGONOMICS DEMONSTRATION PROJECT

Associated General Contractors

of Washington

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Ergonomics Demonstration Project Report

Introduction

The Associated General Contractors (AGC) of Washington has initiated a program to identify Hazard Zone tasks and mitigating solutions under the Washington State Ergonomics Rule for each of the primary trades in their membership. Training and evaluation started in September 2002 and involves trade-specific groups of contractor representatives. This report details the evaluation method as a model for other industries looking to identify Hazard Zone tasks and controls in changeable jobs and work environments.

Background

The AGC of Washington decided to approach ergonomics by using a comprehensive process that would provide useful hazard identification and control information for most of their members. Previous demonstration projects in construction have provided useful information on the highest risk and most common areas of Hazard Zone risk factors in construction. However, some of the previous work could not be generalized to all contractors, and additional trades were yet to be covered.

The AGC developed a training and evaluation program with a private consultant and input from Washington State Department of Labor and Industries. The training program began with the highest risk trades that had active members in the AGC. In cases where previous work had been done, the trade tasks and risk factors were reviewed so that gaps in information could be filled for either less common tasks or different methods of performing the work.

The program has been initiated and, as of November 2002, focus groups from 6 different trades have completed the training, formed groups, identified tasks of interest, and met to evaluate hazards from video. The initial groups include members from the following trades: carpentry, laborers, concrete finishing, electrical, heavy highway, and masonry.

The AGC Process

The ergonomics evaluation process starts with a 3.5 hour training session, after which task teams by specific trades are developed from the attendees. A 1- to 2-hour follow-up meeting then takes place within 2 weeks of the training, where the team objectives and the job tasks are defined. Group members then collect video on tasks that may present a Hazard Zone risk factor. A second meeting of 1 to 2 hours follows, where the team reviews job task videos and identifies potential Hazard Zone risk factors and solutions. Future meetings of 1 to 2 hours are then conducted as needed until all of the trade-specific job tasks have been evaluated. Figure 1 illustrates the process.

Task Analysis Evaluation Process

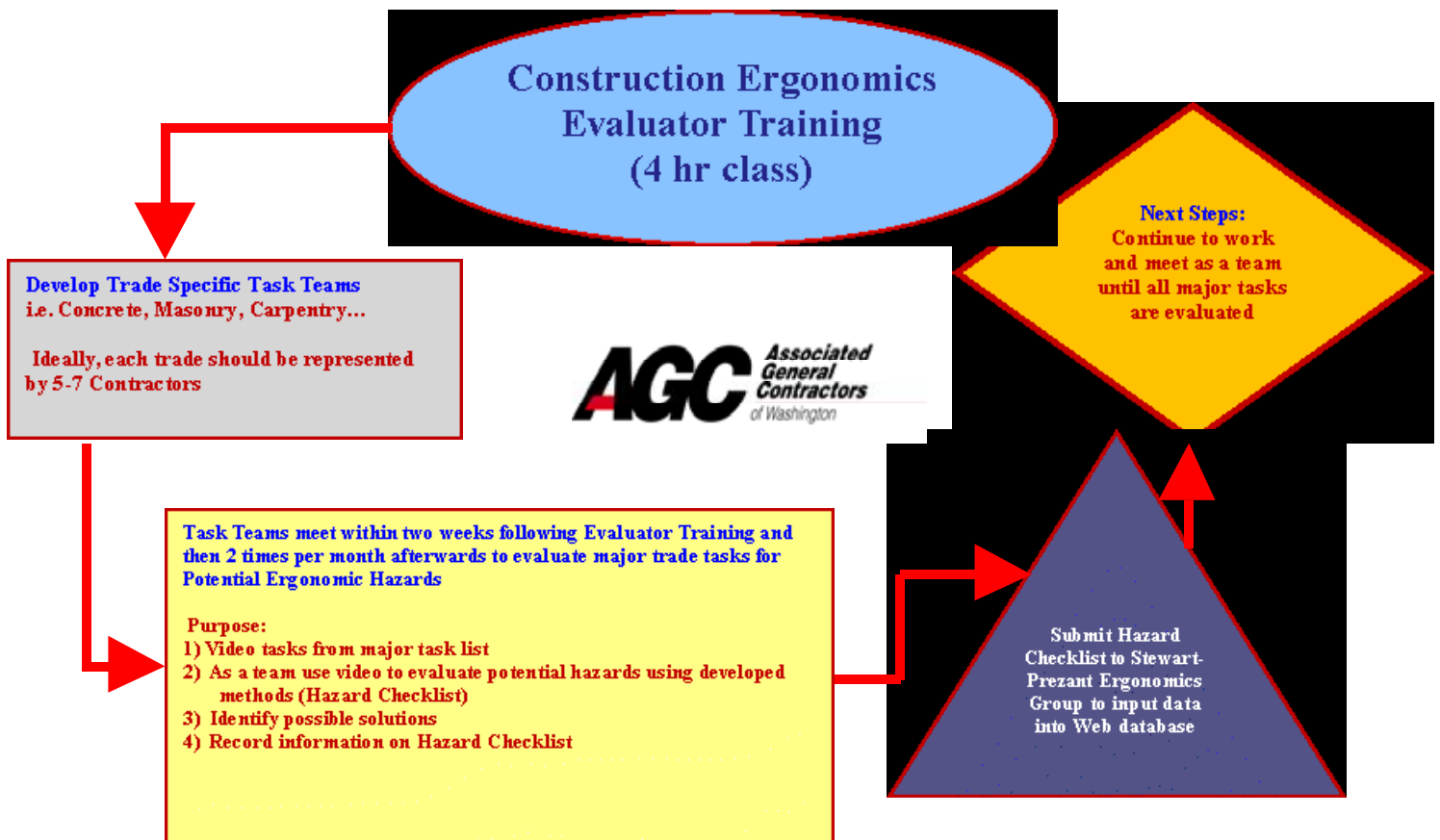


Figure 1. The AGC ergonomic risk factor analysis process.

The analysis of video is done at the group meetings from samples taken by the members at their job sites. Each team member is assigned several tasks and asked to collect 30 to 40 minutes of video on each task. The video should be 3 to 4 ten-minute samples over the workday to assess variability.



Figure 2. AGC members participating in the initial 3.5 hour training session on ergonomics.

The analysis of the video is done by the team collectively. The team discusses each job task, including work methods variation between contractors and sites. A “Video Review Worksheet” is completed from the video, that checks potential Hazard Zone risk factors that will be further evaluated using the same video. If a risk factor is checked, the video is sampled using the “Hazard Analysis Checksheet” by taking 10-minute timed samples of risk factors from the video. Members use stopwatches to calculate the time a possible risk factor is present on the video.

AGC - Video Task Review Worksheet:		Date:	Task Team:		
Use this worksheet to identify "Potential Hazards" by reviewing video tape of each trade specific task and check each potential hazard.					
Trade:	Task Evaluated:	# of Workers Performing Task			
	1. Hands above the head, or elbows above the shoulders. More than 4 hours total per day <input type="checkbox"/>		2. Repeatedly twisting the torso (to) above the head, or the elbow (to) above the shoulder) more than 1 X per minute. More than 4 hours total per day <input type="checkbox"/>		3. Working with the neck bent more than 45° (without support or the ability to vary posture). More than 4 hours total per day <input type="checkbox"/>
	4. Working with the back bent more than 30° (without support or the ability to vary posture). More than 4 hours total per day <input type="checkbox"/>		5. Spouting (no knee contact). More than 4 hours total per day <input type="checkbox"/>		6. Kneeling (knee contact). More than 4 hours total per day <input type="checkbox"/>
	7. Working with the back bent forward more than 45° (without support or the ability to vary posture). More than 2 hours total per day <input type="checkbox"/>		8. Repeatedly pushing objects weighing > 20lb, or with 4 lb or more of force. More than 3 hours total per day <input type="checkbox"/>		9. Repeatedly gripping objects weighing > 10 lb, or with 10 lbs or more of force. More than 4 hours total per day <input type="checkbox"/>
	10. Finishing objects weighing > 20lb, or with 4 lb or more of force with no other risk factors. More than 4 hours total per day <input type="checkbox"/>		11. Repeatedly gripping objects weighing > 10 lb, or with 10 lbs or more of force. More than 4 hours total per day <input type="checkbox"/>		12. Gripping objects weighing > 10 lb, or with 10 lb or more of force with awkward wrist postures. More than 3 hours total per day <input type="checkbox"/>
	13. Gripping objects weighing > 10 lb, or with 10 lb or more of force with no other risk factors. More than 4 hours total per day <input type="checkbox"/>		14. Highly repetitive motion with high forceful exertions with the hands. More than 2 hours total per day <input type="checkbox"/>		15. Highly repetitive motion with no other risk factors. More than 6 hours total per day <input type="checkbox"/>
16. Repeated impacts with the hand or knee more than 1 X per minute. <input type="checkbox"/>					

Figure 3. The initial video review worksheet is used to determine whether possible risk factors are present in a task; if so, they are analyzed using a stopwatch from video.

Different team members can measure different risk factors at the same time if applicable. The amount time a risk factor is present is then extrapolated to an 8-hour workday to determine if a possible Hazard Zone risk factor exists. If so, the team of experts brainstorms potential solutions. This process is repeated for each task in the trade until all are completed.

The resulting information is being collected by the AGC and all defined Hazard Zone risk factors and their associated mitigating solutions will be presented on an Internet database that can be accessed by all AGC members. This database should help give each contractor the information they need to be rule-compliant and reduce the risk of injuries at their job-sites.