

# Deming 'red bead' demonstration reinforces ISMS

Deborah Dunn, FH

Dr. W. Edwards Deming's Red Bead Experiment can be used as a tool to reinforce the core functions of the successfully implemented Integrated Environment, Safety and Health Management System, or ISMS, as it is sustained and maintained over time.

The interactive demonstration is available as a Hanford safety meeting, as a presentation for Hanford and off-site audiences and as a video.

"It's a model on how to manage a process with data," said Steve Prevette, a quality assurance engineer with Fluor Hanford Environment, Safety and Health. "We've designed this presentation to be about 95 percent Deming. The 5 percent closing activities target ISMS core functions, emphasizing worker feedback and improvement."

"The main point is what can happen when workers aren't allowed to contribute to the process," said Steven Byers, a quality assurance engineer with CH2M HILL Hanford Group.

Prevette and Byers have teamed to present the experiment. At Hanford, more than 900 participants have experienced it. Off-site, 300 have seen it in presentations to the Washington State Department of Transportation, Kadlec Medical Center and the Washington State Trainers Conference.

In the presentations, audience members assume various roles for several production runs. The workplace features familiar elements including a mission, procedures, processes, assessments, record-keeping and efforts to motivate employees.

"In less than an hour, the demonstration exposes people to some high-level concepts," Prevette said. "It allows an environment for examining how we use data, common ways it's misused and the pitfalls of those processes."

"You have to experience it," Byers said. "Reading about it isn't enough."

Either Prevette or Byers can be contacted to schedule Dr. Deming's Red Bead Experiment as a 45-minute safety meeting.

Byers and Prevette each conducted the experiment before joining forces to present it to the Hanford Performance Indicator Forum last summer. It became a regular and popular session at the ISMS workshops, which led to safety meeting requests. Simultaneously, their involvement in a Deming discussion group stimulated off-site requests.

An ISMS workshop session was taped and the 54-minute video is available externally for \$18, including shipping, through Anne Weaver of Lockheed Martin Services. Information about the video has been announced in the United Kingdom Deming Newsletter. Prevette said it can be useful to anyone interested in learning about or conducting the Dr. Deming Red Bead Experiment. Prevette provides the script and presenter notes free of charge.



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**During the Red Bead Experiment, Fluor Hanford's Steve Prevette ensures procedure compliance while a willing worker attempts to produce 50 white beads and others await their turns.**

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"It helps break the ice and can lead to discussing buried issues," Prevette said. "It gives us a common frame of reference."

"Over time, the biggest benefit is that it promotes discussion about problems and improvements," said Byers. His son attended a session last year and it continues to provoke discussion about the working world.

A manager who recently scheduled the presentation as a safety meeting commented, "I enjoyed it even more the second time around. My staff continued to discuss lessons learned from the experiment at staff meeting today. The experiment has many messages." ♦

### Avoiding red beads among the white

Steve Prevette, FH

The "Red Bead Experiment" is an interactive teaching tool employed by Dr. W. Edwards Deming, famed for his 20th century business management theory and methods. Dr. Deming's teachings of his management philosophy in Japan starting in 1950 totally transformed business practices there, resulting in the "Japanese Industrial Miracle." Deming passed away seven years ago at the age of 93.

In the experiment, audience members form a corporation of "willing workers," quality control personnel, a data recorder and a foreman. The products, white beads, are produced by dipping a paddle into a supply of beads. The paddle contains 50 bead-sized holes. The bead supply contains "defective" red beads among the white. The white bead production process is strictly controlled by an approved procedure.

Various techniques are used to ensure a quality product consisting of all white beads and no red beads. There are quality control inspectors, feedback to the workers, merit pay for superior performance, performance appraisals, procedure compliance, posters and quality programs.

The experiment, with humor added, demonstrates the effectiveness or ineffectiveness of the various methods. Control charting and discussion at the end provide an objective look at what happened and why. ♦