

Insurance Times: Big Dig is big on safety

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by Mark Hollmer

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Planners originally estimated that 52 people would die during the Big Dig project, based on the time needed to finish it and the complexity of work.

Since then, the project's timeframe grew and costs rose to more than \$14 billion.

But estimated fatalities never materialized. Three people died – two construction workers and a pedestrian/driver, according to Ginny Greiman, the Big Dig's risk manager.

"Serious injuries were also far less than expected because we've had no serious occupational illnesses," Greiman said. "We've had no catastrophic loss on the workers compensation side from tunneling... (or) the exposure from the buildings."

With a project of the Big Dig's scope – safety concerns become paramount, and planners continually work to reduce risk and increase safety.

That's where Charlie Rountree comes in.

A native of Georgia, Rountree most recently worked in Hong Kong as Bechtel/Parsons Brinkerhoff's vice president and manager of environmental safety and health. He's worked as safety and health manager for the Big Dig since August, 1998 and manages a 16-person team that works to keep everything safe and minimize risk or injury.

Half of the team comes from Bechtel/Parsons Brinkerhoff, a managing consultant to the Massachusetts Turnpike Authority, which owns the Big Dig Project.

The other eight people are from AIG, a major Big Dig insurer.

Rountree terms his approach to preventing accidents as "a milk stool concept," with each of the four stool legs representing a safety focus – processes, special programs, training and partnering.

Processes. This means that the managers throughout the project must use a number of operating procedures that affect safety and health.

For example, all contractors, as part of their Big Dig contract, are required to hire a full-time safety and health professional full time to "establish a site-specific safety and health program addressing their scope of work." Managers use a list of "expectations of a safety and health program" as a guideline.

In addition, the project uses a number of standard procedures governing everything from safety precautions to how accident investigations are handled.

Special Programs. Officials created a number of special programs to help keep workers safe and reduce risk.

Among them: an electronic tracking program to determine where employees or project visitors are when they visit the tunnel system now under construction.

They swipe electronic badges across a reader that allows Big Dig officials at a central operational office to know who is in what underground area at any given time. Workers reverse the process when they leave a tunnel, particularly in an emergency.

“We can determine those counted in, who is counted out and as a result determine who is unaccounted for,” Rountree said.

Work-site employees are also drug-tested at the time they’re hired, after accidents, or for cause. They’re issued a badge if they pass.

Also, the safety office runs the SHARE program – an incentive program where many contractors win a share of the project’s saved insurance premiums twice yearly at gold, silver or bronze levels if they keep injury costs down. Contractors must share at least half of the award with their employees and most go beyond that, Rountree said.

Training. Big Dig officials train both their own and many contractors’ employees on the project. That includes 550 employees from Bechtel/Parsons Brinkerhoff, the project’s managing consultant, 40 general contractors and more than 200 subcontractors and their employees.

At the Big Dig’s peak construction phase, more than 5,000 people were working “in the field,” Rountree said.

Officials are “committed to try and train everyone on the project in a 10-hour (Occupational Safety and Health Administration) course...an overview of the construction and safety standards.

“Our goal was that the men and women building the project would have the ability to recognize hazards,” he said, “(and) have an understanding of remedial measures necessary to eliminate the hazard.”

In addition, officials give safety leadership training to the safety and health professionals working for individual contractors throughout the project.

Employees also receive traffic training because so many highways and busy streets in and around Boston intersect the project.

Specialty training focuses on unique hazards such as asbestos and asbestos remediation, silica and silica exposures, and other related projects.

Partnering. As part of a labor agreement negotiated for the project, a labor management committee including general contractors and business managers from the more than 13 unions represented on the project “work together proactively to address accident prevention,” Rountree said.

Safety managers also worked with the Boston Fire Department and its Emergency Medical Service, which is the official “underground rescue agency for the project.” Rountree also conducts regular walk-throughs of the project with the city fire chief to identify any fire risks in a given work area.

Subsequently, Rountree said, the Big Dig “has never suffered a significant fire.”

Executives of the various contractors also meet regularly with Rountree and other Big Dig safety officials to keep up with any safety and health issues that crop up.

The Big Dig partners with the University of Massachusetts at Lowell to research employee safety and the health effects of exposure to everything from silica, which is in excavated soil and rock, to noise.

“A construction job is a pretty noisy place,” Rountree said. “We’ve taken a look at the effects of construction on the muscular-skeletal system on a variety of workers.

Repetitive actions are one of many areas that researchers are studying, Rountree said.

“A crane operator may be working with materials 10 stories off the ground but he’s constantly looking up at a 50-degree angle virtually eight-hours a day.”

The Big Dig also has an Interim Operations Center, a 24-hour system that monitors traffic and incidents throughout the project with 16 cameras and a multiple channel radio system.

As of early summer, the IOC tallied 23,483 incidents since June 1994, with an average of 15 complaints during the day, and 6-7 actual incidents.

The evening shift has handled an average 8-10 complaints daily with 1-2 actual incidents, according to IOC numbers.