Responding to Disaster

OSHA was on the scene immediately following the September 11 attacks to protect emergency workers.

by Bill Wright

Search and rescue workers braved many hazards during the search for survivors.
Federal Emergency Management Agency photo by Michael Rieger

OSHA responded immediately to the September 11 terrorist attacks at the World Trade Center in New York City and the Pentagon outside Washington, DC. While thousands of America's citizens—firefighters, law enforcement officers, health care workers, tradesmen, and volunteers—joined hands to rescue and recover victims, OSHA went to work to protect their health and safety.

Approximately 160 OSHA employees from throughout the agency's New York Region II offices and a three-person team in Virginia went to work immediately to help ensure the safety and health of rescue workers in Manhattan and at the Pentagon. As the cleanup continued in New York City, staff from other regions joined Region II OSHA personnel to handle the round-the-clock operation, swelling the ranks to nearly 400, including some from states with their own safety and health plans, and consultation programs.

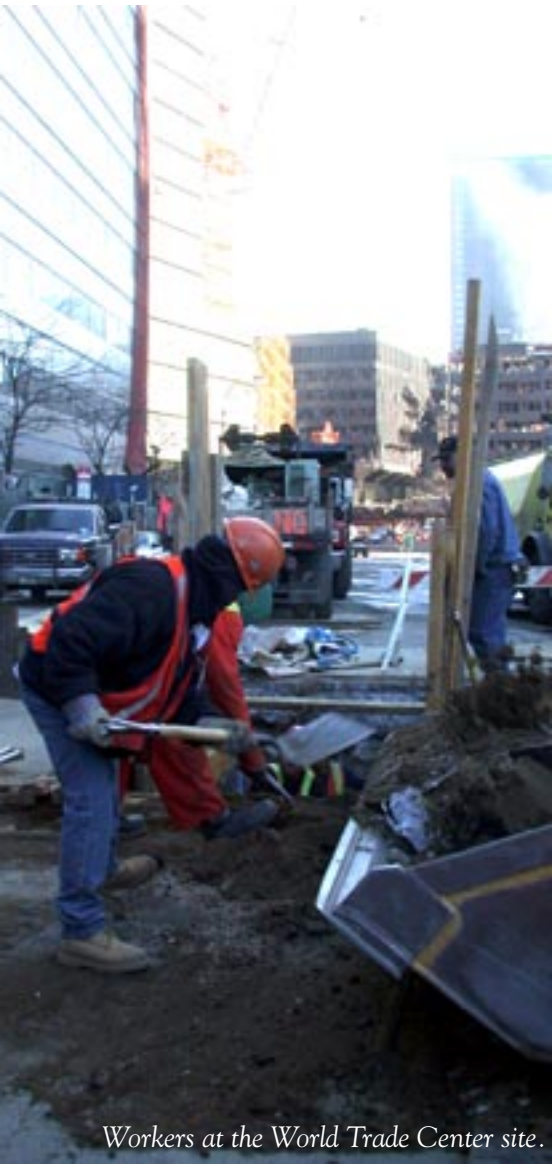
"I'm proud that OSHA professionals have dedicated themselves to the goal of helping protect these American heroes," says OSHA Administrator John L. Henshaw. "Our sole purpose in the monumental efforts ongoing in New York and Washington is to make sure that no worker suffers another needless tragedy. We're not operating in an enforcement role—but, we do want to make sure that in their zeal to recover victims, they don't become victims themselves."

OSHA coordinated with federal, state, and local agencies to meet that goal. One of the first priorities was to conduct personal air monitoring in lower Manhattan to determine worker exposure levels to asbestos.

"The collapse of both World Trade Center towers and other buildings, in addition to the tremendous amount of collateral damage throughout the surrounding area of lower Manhattan, created an incredible amount of airborne debris," says Patricia Clark, OSHA's Regional Administrator in New York. "OSHA's priority was to ensure the air was safe for those involved in the rescue effort."

The agency made initial contact with the Federal Emergency Management Agency, the Environmental Protection Agency (EPA), and various New York City agencies, including the New York State Department of Labor's Public Employee Safety and Health plan.

Heavy equipment moves tons of debris from the site. FEMA photo by Michael Rieger



Workers at the World Trade Center site.

Then, OSHA deployed industrial hygienists and safety officers to take air samples throughout New York's Financial District and in specific locations where workers were involved in the rescue.

OSHA coordinated with EPA to make sure it was safe for workers to return to the Financial District in lower Manhattan the week after the disaster. "We set up two grids; Bob Garvey, Richard Mendelson, Maureen Moynihan-Fradkin, Babu Thomas, and I walked throughout the Financial District wearing sampling pumps," says Region II's Gil Gillen. "We initially wanted to determine if office workers would be safe walking to work and that the air was safe in their offices. We then moved into the rubble pile area to characterize exposures to the emergency responders and identify where it would be safe for them to remove their respirators."

"In the 31 days ending October 13, we took more than 1,000 air and bulk samples, and we expect to continue at a rigorous pace," Clark says. "Though the levels have been consistently safe, we can't assume they'll remain that way in and around the rubble pile as the debris is removed. It's imperative that our sampling continue."

As the effort extended into its second and third weeks, OSHA provided consultation and assistance as agency employees continued sampling for asbestos, silica, lead and other heavy metals, carbon monoxide, and volatile organic compounds. OSHA shared its sampling data with all federal, state, and local agencies involved in the effort to ensure that all workers were protected.

Garvey, a 12-year OSHA employee, says past experience responding to incidents such as chemical releases and fires gave him valuable tools he applied at the New York site. Nothing, however, prepared him for the magnitude of

A health professional treats a firefighter at the World Trade Center site.
FEMA photo by Michael Rieger

the disaster. "The biggest challenge here is that there are so many hazards, everywhere you look," he said. "The sheer scope of this is beyond anything you could imagine, let alone prepare for. But everyone is working together, pushing full steam ahead."

OSHA ensured that all workers had access to safety and personal protective equipment, particularly respirators. "While our sampling shows the air to be well within acceptable standards in the areas surrounding what has been called 'ground zero,' we still think it's prudent that rescue workers have and use respiratory protection," says Clark. "It is particularly important in the immediate area of the collapse." OSHA continued to fit check and distribute about 2,000 respirators daily, down from about 4,000 daily during the first two weeks of the rescue effort.

"It's not always simple to get to those workers, who oftentimes see their own well-being as a secondary priority, to use personal protective equipment for their own safety," says Henshaw. "We understand their motivation and commitment and we applaud it. But, we also know that we're in a good position to persuade, educate, and train them that they need the protection we can provide."

Physical safety of those involved in the rescue operation also was of major concern to OSHA. As greater quantities of heavy equipment arrived at the site and greater numbers of construction workers joined in the rescue effort, OSHA deployed safety monitoring teams in concert with the New York City Department of Design and Construction. These teams addressed hazards created by heavy equipment such as cranes, excavators, and dump trucks, as well as cutting and burning operations. The teams operate on a 24-hour basis in and around the debris pile.

Mendelson, Manhattan Area Office Director and an emergency medical technician, has been a central figure in OSHA's response. Although his office was destroyed in the attack, his staff has been back to work at the site to protect other workers.

An OSHA team responded to the Pentagon disaster to ensure the safety and health of rescue workers. Department of Defense photo by R.D. Ward

"We're facing hazards never seen before, and we have no textbook on how to handle these hazards," says Mendelson. He cited the use of cranes lifting steel beams of unknown weight, slings breaking under unexpectedly heavy loads, removal of debris while underground fires continue to burn, and the instability of nearby buildings as just some of the safety problems at the site.

Another 35 staffers from OSHA's other three East Coast regions arrived to augment the enormous undertaking. Each week, a new group of OSHA staff from all over the country is arriving in New York for a 5-day stint to help out.

At the Pentagon, a three-person Federal OSHA team served in a largely advisory role, overseeing emergency response and helping identify appropriate respiratory protection for emergency workers. Tom Pope, director of the Norfolk Area Office, says the team worked side-by-side with the military, the EPA, and the FBI to ensure worker safety and health during rescue and recovery operations.

"The site was very different from the one in New York in that it involved a much more controlled area with one employer, the U.S. government, one building, and much less damage," Pope says. "Everyone worked together in a positive way and as a result, there were minimal injuries and no serious injuries among the response workers in the whole process."

OSHA's non-stop work has been an integral part of the rescue and recovery operations. When workers on the pile cheer at the site of people wearing green jackets with OSHA across the back, the agency knows it is making a difference. JSHQ

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An OSHA Office Evacuates

by Donna Miles

It was a perfect New York City morning, and Mike Mabee was just starting his day as a whistleblower investigator at OSHA's Manhattan Area Office. The office was on the top floor of the World Trade Center's Building 6, an 8-story building in a complex dominated by two 110-story skyscrapers.

Sipping coffee and sorting through his case files, Mabee heard what sounded like a sonic boom. His office lights flickered, then he heard someone in the distance yelling that something had hit Tower 1, one of the skyscrapers. Glass, paper, metal, and other debris was falling from the sky past his windows, and Mabee heard the pounding of more debris hitting his building's roof.

The staff hurried toward the stairwell, just as they had trained to do during past fire drills. The office's emergency action plan called for the staff to go down the steps to the ground floor and to rally on the east side of the building.

Mabee, Victor Couverter, a safety and health clerk, and Lou Willard, a retired OSHA employee who was visiting the office, went into immediate action and evacuated a fellow employee who had just returned to work following a stroke. Frank Ufert, a compliance assistance specialist, was temporarily wheelchair-bound. As larger and larger pieces of debris pounded on their building roof, Mabee, Couverter, Willard, and Ufert followed the previously planned and rehearsed part of the emergency action plan specifically related to evacuating someone in a wheelchair and rode the freight elevator to the building's basement. "The plan had already been made to use the elevator, if possible, to evacuate our wheelchair-bound colleague," said Mabee. "It's

Hundreds of rescue workers and firefighters sift through rubble near the building that once housed OSHA's Manhattan Area Office. FEMA photo by Michael Rieger

conceivable that had we taken the extra time to walk down eight floors, we may not have made it down in time. Sticking to the plan and using the elevator is probably what saved us."

In the basement, the three ran through the parking garage, pushing Ufert and his wheelchair toward the exit. New York Port Authority officers inside the garage, however, stopped them from leaving the building for fear they would be hit by falling debris. "I don't know how long we waited in the garage before they let us leave," said Mabee, "but it felt like a long time."

Finally, the four were permitted to leave, and they hurried toward the north, away from the complex. "At that point, I didn't know what had happened," said Mabee. "I thought it was just an accident, maybe a fire or a gas explosion." Yet, as he looked up at the burning building with a gaping hole near the top floors, Mabee watched a commercial airliner bank sharply and head straight into the second tower. "As soon as I saw the second plane, I understood what had happened," Mabee said. "It was obvious that the plane had deliberately steered into the tower."

At that point, Mabee said the street turned into "complete pandemonium" as "everyone started fleeing." Fire, police, and emergency medical personnel started arriving at the scene. Looking up, Mabee saw at least 20 people jump to their deaths. "It got to the point where you just couldn't watch it anymore," he said.

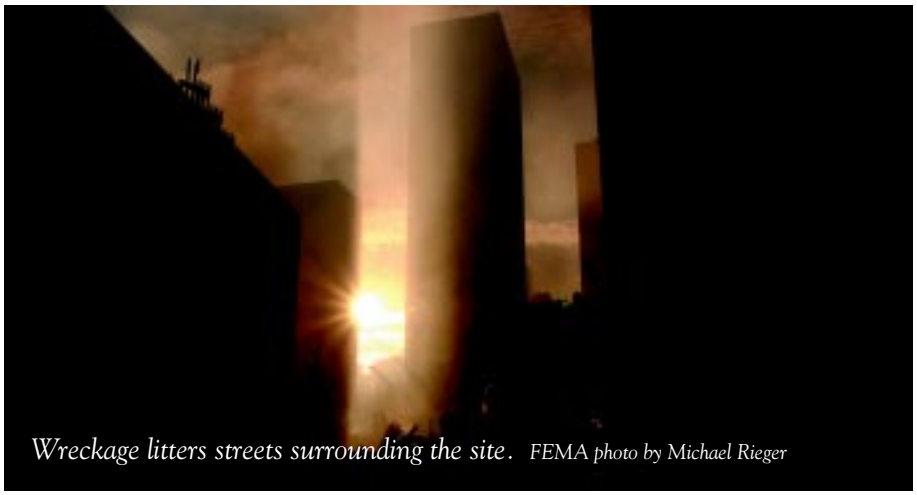
Mabee and his colleagues continued rushing north, away from the scene, when Tower 2 crashed to the ground, sending what he called "a huge wash of debris" over the site and burying many of the newly arrived police and fire vehicles. "I could see that a whole mass of the first responders had been killed," Mabee said. As he and his colleagues proceeded away from the scene, they watched Tower 1, the building that had been hit by the first hijacker, pancake down to the ground. What he didn't realize at the time was that Tower 1's collapse had completely destroyed the OSHA Area Office in Building 6.

OSHA's Manhattan Area Office was based in the top floor of the World Trade Center's Building 6, pictured, before the attack. OSHA photo by Kevin Brennan

Mabee and his three co-workers finally arrived at the OSHA Region II Office in the Federal Building about a mile and a half north of the World Trade Center complex, only to find that the staff had evacuated. Fortunately, they found a staff member from the office who pointed them toward the office's rally point about 2 blocks away, at James Walker Park. There, Mabee, Couvertier, Willard, and Ufert found their colleagues from the area office, including Area Office Director Richard Mendelson, who had been out of the office giving a presentation in Queens when the incident occurred. All 23 members of the Manhattan Area Office had escaped the disaster unharmed. "That was the first time that we all realized that everyone else was okay," said Mabee.

Mike Mabee and his coworkers in OSHA's Manhattan Area Office escaped without injury.
OSHA photo by Susan Fleming

Standing at the park, looking toward the dust clouds to the south and listening to the news on a radio, Mabee heard a call go out for volunteers with medical training. A trained paramedic, he rushed back to the World Trade Center complex—now referred to by the media as "ground zero"—and helped set up a makeshift hospital in the gym of Manhattan Community College. Doctors, nurses, and medical students started arriving at



Wreckage litters streets surrounding the site. FEMA photo by Michael Rieger

the site, and Mabee was put in charge of supplies that poured in from area hospitals. By nightfall, when the building lights wouldn't go on, Mabee helped pack up the operation and move it two blocks away to Stuyvesant High School to continue offering aid, mostly to rescue workers.

"The rescuers were so focused on their work that they didn't want to leave the scene for treatment," Mabee said. "The dust was so thick that they needed to flush their eyes so they could see, but we couldn't get them to come in to have it done." In response, Mabee and teams of medics started carrying intravenous solution bags filled with saline solution out to the street to flush the eyes of more than 100 rescue workers. They worked until 6 o'clock the next morning before more volunteers relieved them.

Now, Mabee is back on the job, working out of OSHA's Region II Office. Getting back to his investigations, he admits, is difficult. His building is destroyed, along with all his files. His email is down. He doesn't even have a permanent desk from which to work. "I'm trying to reconstruct where everything was before September 11," he said.

What did the disaster teach him about emergency evacuations? "One of the lessons I learned is that just getting out of the building is not enough. You have to get away from the building," he said. "By the same token, you need two rally points: a regular one and a secondary one. If everyone from our office had remained at the regular rally point, they would have been killed by all the falling debris."

Mendelson agreed that having a preplanned rally point was a big factor in his office's ability to account for its people as quickly as possible. He remembered all too well an incident several years ago in Manhattan in which three firefighters and rescue workers received severe burns searching a ConEdison building for workers who had already evacuated. "By having a good plan in which people know what to do and where to go in an emergency," he says, "people can respond more quickly, potentially saving their own lives as well as those first responders who might risk theirs trying to save them."

Mabee says the disaster will forever change his attitude toward emergency evacuation drills. "I always used to think they were a pain. You'd be sitting there in the middle of a project or typing up something and have to stop and leave the building. It always felt like a major inconvenience," he said. "But now I know differently. Now I know that it can help save your life." JSHQ

Planning for Emergencies

by Donna Miles

Without warning, an explosion at a Lower Michigan mill that produces particle board blew out sections of the building walls and sent plumes of fire skyward. Forty-five employees, nine of them injured in the blast, had to evacuate the burning structure. The plant manager described the incident as his "worst nightmare."

Nobody expects an emergency or disaster, especially one that affects them, their employees, and their business directly. Yet workplace emergencies—explosions, fires, floods, tornadoes, chemical spills, toxic gas releases, or even terrorist attacks like the recent ones on the World Trade Center and Pentagon—and can strike anyone, anytime, and anywhere. Businesses too often find themselves forced to evacuate when they least expect it.

The recent terrorist attacks on the World Trade Center and the Pentagon have brought the possibility of such events to the forefront of everyone's mind. OSHA's emergency action plan

No company expects a workplace emergency, but if one occurs, advanced planning can reduce uncertainty and save lives.

requirements focus specifically on "reasonably forseeable emergencies" that might or might not include terrorist attacks. Given the far-reaching effects of such attacks, however, an employer may want to consider surrounding business operations such as nuclear power plants, military installations, public utilities, and the like.

According to MaryAnn Garrahan, team leader for OSHA's Health Compliance Development Division, the best way for employers to protect themselves, their workers, and their businesses is to expect the unexpected and plan for it. "Brainstorm the worst-case scenarios," Garrahan says. "Ask yourself what you would do if the worst happened." How, for example, would you and your employees react if a fire broke out in your boiler room, a hurricane hit your plant head-on, or a train carrying hazardous waste derailed while passing your loading dock?

OSHA requires some companies, particularly many that work with or store hazardous materials, to assess these "what ifs?" and create an emergency action plan. This plan documents what to do in the event of an emergency. Garrahan says every company, however, can benefit from a well-thought-out emergency action plan.

An effective plan includes details such as the following:

- Determining how to alert employees to an emergency,
- Identifying who is in charge during an emergency,
- Specifying evacuation policy and procedures,
- Establishing evacuation routes and exits, and
- Having a designated assembly area and procedures to account for all employees following an evacuation.

Establishing an emergency action plan is just the first step in preparing for a workplace emergency. Garrahan says the best-laid emergency action plans will be ineffective during an emergency if employees are not aware of them and do not have a clear understanding of evacuation procedures and what their roles are. She recommends reviewing the plan with employees and posting it in a convenient location where employees can access it or giving employees

A good emergency action plan reduces uncertainty during fires and other workplace emergencies.

OSHA Resources

A newly released OSHA brochure, *How to Plan for Workplace Emergencies and Evacuations*, helps employers anticipate and plan for workplace emergencies. The brochure is on the OSHA website at www.osha.gov. For more information about OSHA standards and emergency action plans, contact your local OSHA area office or visit the agency website.