Recent explosions at two oil company plants—Phillips 66 Company in Pasadena, Texas, and Exxon U.S.A. in Baton Rouge, Louisiana—resulted in the need to clean up widespread areas contaminated with asbestos and asbestos-containing material. Service Abatement Company of Beaumont, Texas, was performing contract maintenance work in both instances and was called upon to perform emergency cleanup immediately after the explosions. Todd Brock, vice president of Service Abatement, said his company was able to learn a great deal about emergency cleanup procedures as a result of the explosions, and he was willing to share some of his thoughts and lessons he had learned recently.

The Phillips 66 Company plant, located along the Houston Ship Channel, is a plastics plant that produced approximately 1.5 billion pounds per year of polyethylene. After the explosion, which occurred in late October, 1989, the plant burned for two days and left more than 120 injured and 23 dead. More than half the plant was destroyed, and Rice University in Houston recorded the initial explosion at 3.2 on the Richter scale.

"The Phillips explosion was an extremely large explosion," Brock said. "The actual units that exploded were not asbestos-insulated units, but transite material surrounded the entire structure. When the explosion occurred, it blanketed the affected area..."
with transite.” Transite is a corrugated siding material that contains asbestos.

Service Abatement had a year-round average of 30 to 40 people at the Phillips plant performing maintenance. Following the explosion, the company increased the number of on-site workers to 150 within three days. In the next week, the total number of workers grew to 300. Service Abatement was asked to clean up all asbestos-containing material in the area, which turned out to be a big job. “It was like a smorgasbord of debris,” Brock said. “The transite was mixed in with all the other non-asbestos insulation. Therefore, Service Abatement and Phillips came to the conclusion that we could not separate the material; we would have to treat all the material as asbestos-containing.”

There were many steps that needed to be taken in order to move so many workers into the area and perform work that needed to be done so quickly. Brock took a step-by-step approach that allowed him to coordinate the entire operation. “The first thing we did was to get a plot plan of the plant from Phillips and we blocked and sub-blocked it,” Brock explained. “We barricaded the entire plant by sub-blocks so that there was no access. Then we worked with Phillips to determine which blocks we would enter first.” Working together, Phillips and Service Abatement were able to set priorities on the blocks to be cleared so that the cleanup could proceed in an orderly fashion.

Service Abatement’s highest priority was to clear passageways for search and rescue personnel. Brock knew that many of the rescue personnel were not trained in the hazards of asbestos removal. Moreover, using negative pressure respirators requires a physical examination and additional training. Brock sent his abatement workers in first to clear paths for the rescuers, with containment areas maintained around the paths. “The main thing was to get in to the area, get any possible survivors out as quickly as possible, and remove the bodies of those who were killed in the explosion,” Brock said. “After several days, Phillips did get their own people ready for respirators. But they didn’t want to put their people in that environment without the proper training. They had enough problems with the situation as it was.”

After search and rescue personnel had completed their work, the next task was to clear pathways to remove vehicles and equipment. Following this, Phillips wanted pathways for insurance adjustors and their own personnel to evaluate the damage.

The next step was to clear the grounds so that actual cleanup could begin. “After we had cleared the pathways, we used the sub-block method and cleared the grounds block by block for personnel protection,” Brock explained. “Then we went back in and cleared the structure after we had cleaned up the grounds.”

The structure itself was difficult to clear. “You’ve probably seen photographs showing mangled debris,
some of it six to eight stories high,” Brock said. “We had to get our safety engineers and Phillips’ structural engineers together to make sure the structure was sound. We would often have to go in and regrade the structure to provide safety for our workers.”

Adding to the problems was the fact that the plant had no electricity and no water, so that Service Abatement had to bring in extensive electrical generators and sufficient water for wetting the asbestos, along with other needs. Phillips had to make sure their pipelines were safe before the asbestos workers could go in as well. They often had to purge the lines with nitrogen before Service Abatement’s workers were allowed into an area.

During this initial period, in addition to 300 abatement workers at the site, Service Abatement had responsibility for 100 scaffold-builders. Procuring enough manpower for the job required them to go outside their own company. “We had support from different training centers and other organizations finding additional people,” Brock explained. “It was very unusual in this case in that we did not even have to advertise in the newspaper. Houston is very industry-rich and there is a lot of abatement going on. People heard about the explosion and they knew there would be long hours available. I think many abatement crews left their jobs and came to work for us because they knew it would be a six-month job with 80-hour weeks.”

Service Abatement set up a hiring office outside the Phillips plant to take telephone calls from individuals wanting to work for them. They trained everyone who worked on the job, using an on-staff certified instructor. “Having the instructor on staff was a blessing,” said Brock. “If we would have had to go outside for training, we could never have responded as fast.” The instructor would hold training sessions at the plant, and several clinics were set up to conduct physical exams for the potential workers. All workers were drug tested as well.

The training sessions included all workers. “There was really only a necessity to train about 5% to 10%, because all of them had previous training,” Brock said.

“We also had to bring in an outside third-party air monitoring service that could handle the needs of 300 people,” Brock added. “This added eight to 10 technicians on site at all times.

Providing equipment and necessities for the workers was another difficult task. Just making sure there was enough food and water for 300 workers required a great deal of coordination, and obtaining the proper special equipment created a “nightmare.” In addition there were consumables such as respirator cartridges that had to be replaced continually.

Brock said, “We had to set up warehousing facilities on site, and we had to let our vendors know the magnitude of the job. We wiped out Houston very quickly.” Service Abatement worked with several national distributors to obtain the equipment they needed fast.

Brock noted a positive from the situation. “What helped us more than anything else was the fact that we had one coordinator to work with at Phillips. He could make the decisions at the site, he could set priorities and tell us what was most important to them, and he could enable us to work steadily. We didn’t have to wait for decisions to be made through a hierarchy as so often happens with corporations.”

The explosion at the Exxon Refinery in Baton Rouge, Louisiana, was near the wastewater treatment area. A critical supply pipeline ruptured. The resulting explosion and fire destroyed a large section of a critical pipeband connecting the refinery to its loading docks on the Mississippi River, damaged several buildings and storage tanks in the area, and scattered debris over much of the refinery and a large portion of the city downwind from the explosion.

Because the Exxon explosion involved few injuries and fatalities, and those were removed quickly, the priority at that explosion site was to clear pathways and roadways to get people and heavy equipment in to assess the
damage and start the cleanup. “This was different because much of the debris was asbestos pipe insulation, as opposed to transite,” Brock said. “Since it’s a much more friable material, we had to clear all debris over a very large area.” The Exxon plant is much larger than the Phillips plant.

Since this pipeline is essential to the operation of the refinery, Service Abatement Company was under extreme pressure to get the plant cleaned up so the repair crews could effect repairs and bring the refinery back to full operating capacity. “We brought in 300 workers for that plant as well,” Brock explained. “It was much more difficult than the Phillips plant from the standpoint of hiring, training and providing physical exams, because Louisiana requires three days of worker training and the training must be specific to Louisiana.” Brock added that there weren’t as many readily available trained workers in the Baton Rouge area.

Since both explosions occurred within days of each other, he was not able to bring workers from one site to the other. “We had 600 people working at two sites,” he said.

In Louisiana, Service Abatement Company had again utilized their on-staff instructor. They also brought in an outside instructor to help with training.

Exxon assigned one person to act as liaison between Service Abatement Company and the various Exxon area supervisors. “It’s always better in such situations to have one liaison between the contractor and the plant.”

As a contractor, Brock has several suggestions for asbestos abatement contractors who might have to deal with similar situations. “The most important consideration is to prioritize what needs to be done, and then block and sub-block the areas to accomplish your priority tasks in the most efficient manner possible,” he said. “You must have a systematic approach to cleaning up the plant, and that approach will be dictated by the priorities you establish with the plant.” As a suggestion to facility managers, if a catastrophe occurs, alleviate further complications by selecting a contractor that has extensive experience in similar situations. “It is my suggestion that this selection process takes place prior to the need,” Brock concluded.

Praise was given to both facilities by Brock for their uncompromising commitment to safety and compliance in the post-catastrophe cleanup.