My First Confined Space Experience

It was hot, and it immediately became difficult to breathe. The space inside the condenser was, in a word, confining.

BY DAVID D. WAGNER

For those of us who work for manufacturers of gas monitoring instruments, “confined space” is a term that we use and discuss frequently. But when it comes right down to it, most of us have never seen the inside of a confined space firsthand nor experienced a true confined space entry. As for me, I am one of the lucky ones.

In the mid-1980s, the summer between my junior and senior years in college, the search for invaluable pre-graduation employment experience and financing for the next school term took me to the local electric utility. Before summer had officially begun, I was offered a job working in the summer employment program at a western Pennsylvania coal-fired power station. It wasn’t the technical position that I was hoping for, but full union wages and benefits for a three-month stint in the plant’s labor gang wasn’t too bad. Every evening and weekend free with time-and-a-half for overtime was about as much as any college kid could ask for.

For the most part, the work around the plant was pretty benign: Sweep the turbine room floor, check the pressure on the fire extinguishers, shovel up a coal spill here and there. But that was all before the plant went on its two-week summer outage. As the calendar drew closer to the hot days of those two weeks in mid-August, the comments from the senior, full-time members of the team became more frequent and more excited. “We have summer help. They can ‘shoot the condenser’ this year!”

I didn’t know what the condenser was, let alone what “shooting” it involved. On Monday morning, the first morning of the outage, they handed out our PPE, which consisted of a pair of rubber gloves, knee-high rubber boots, and a full set of rain gear, and led us down in the depths of the plant, two levels below the turbine room floor. The condenser that was to be our office for the next week stood in front of us, 20 feet tall and 20 feet wide, with scaffolding built up to reach the portals on the upper level. A quick glance inside the lower-level portal revealed a wall covered with thousands of 1-inch-diameter holes that I would soon find out were the condenser tubes we were about to “shoot.” We were given a quick training session and learned we were to fill each hole with a 4-inch metal plug and then insert the nozzle of a high-pressure wa-
ter hose behind it, lean on it, and pull the trigger. The water would force the plug down the 40-foot cooling tower, removing any debris that had accumulated in its path. If the tubes were not clear, the river water would not be able to flow through them and cool the steam that drove the plant’s 300-megawatt turbine generator.

I hunched over to crawl through the 24-inch main way portal and followed my co-workers on to the 2x12 oak planks that formed a platform across what appeared to be a dark, bottomless pit in front of the massive wall of condenser tubes. The only illumination came from two electric trouble lights that cast a dim glow across the whole area. I glanced to the left, seeing the 36-inch pipe opening, and followed my co-workers on to the 2x12 oak planks that formed a platform that we had fashioned to continue the job.

As bad as that part of the process was, the second half of the job was that much worse as we climbed into the outlet side of the condenser to recover the plugs that had been shot through the tubes. I could not have dreamed that the air could be heavier or the smell could be worse than it was before. But the stench as we sifted through the algae, muck, and decomposing remains of river life that had been purged from the condensing tubes was nothing less than nauseating.

By now, you have noticed that I haven’t talked about a confined space entry permit. I haven’t discussed ventilation, a pre-entry atmospheric test, or even mentioned a gas detector at all. That’s not because there was negligence on anyone’s part, but simply because the awareness of the dangers of confined space entry that we have today did not exist at that time. That certainly wasn’t the case for anyone part of area, the risks associated with the job were not apparent, and the safety of the workers was taken for granted.

Cleaning the condenser was a job that had to be done on at least an annual basis. There was no way to avoid it. But nearly a full decade prior to the passage of the Confined Space Act of 1993 that protects workers performing these types of tasks in this type of area, the risks associated with the job were not apparent, and the safety of the workers was taken for granted.

If you haven’t had your first confined space entry experience yet, I should be able to guarantee that it will be significantly different than mine. The law today requires that the atmosphere is tested to ensure that conditions are safe prior to entering the workspace. It also requires that there is rescue and retrieval equipment present and that someone is watching over you while you work to make sure that if you do fall into harms way, help is there quickly to pull you out. It gives you the right to see firsthand that working in the area will not compromise your safety.

Unfortunately, I can’t make that guarantee. With all of the regulations that are in place and the awareness that we now have of the dangers that are hidden in the work they are doing, it’s because they are so driven to get the job done that they do not take the time to follow the proper procedures or the letter of the law.

Don’t Rely on Lady Luck
At the end of the week, my friends and I finished the condenser job without any accident, injury, or serious illness. How ironic is it now that I have spent the remainder of my career developing equipment to protect workers from the hazards that I was completely naive to back then? Knowing what I know today about confined spaces and particularly the unseen atmospheric hazards that exist within them, I truly believe we were simply lucky to come out safely.

Whether your next confined space entry experience is your first or your 10,000th, lady luck should play no part in whether or not you come out of the space at the end of the day in the same condition as you went in. You have the ability to understand the hazards that exist while performing the work. You have the ability to know that your life is not threatened in the workspace. If you follow the proper procedures and all of the applicable regulations, you will be able to guarantee your safety. No luck will be necessary.