Respiratory protection awareness

Is everything possible being done?

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Several large, high profile structure fires occurred recently in South Carolina. As with many large fires, the media turned out in large numbers with lots of television coverage because people are attracted to the excitement and drama of a big fire with a lot of fire apparatus, smoke and flames. Who doesn't love a fire truck? Unfortunately, when television cameras are capturing the action at a working fire or post-fire operation, firefighters can show their "bad side." The media can be a tough critic once they focus on a particular theme.

One of these fires occurred in Charleston, S.C. and resulted in the tragic deaths of nine city of Charleston firefighters. Several issues of the local Charleston newspaper were very critical of the fire ground operations at the Sofa Super Store that tragic night. One out-of-state "expert" contacted by the reporter was critical of the many instances of firefighters without respiratory protection in place. The week before, there was concern for the firefighters operating at a large mill fire without SCBAs or APRs in place. The media highlighted several firefighters in platforms or atop extended ladders with their heads in the thickest, blackest smoke. Those photos and videos served to bring to mind a passion, which many people are working hard to bring to the attention of all firefighters and fire investigators everywhere, the risks of damaging their respiratory system by not wearing respiratory protection.

Firefighters sometimes show their "bad side" without realizing there are those just waiting for a stumble so the subtle attacks can begin. There will be a better picture of what happened that night in Charleston and what could have been done to prevent such a tragic incident. Until then, all the critics should remain calm and wait for the studies and reports to be written. Working fires are unpredictable. There is always a chance of loss of life. It happens more than 100 times each year and that is understood by every firefighter that responds to the alarm.

What can be done today is "respiratory protection." The illness and death caused by not wearing respiratory protection can be prevented if proactive steps are taken.

Many firefighters and fire investigators, through negligence and inaction, are chancing serious health issues if they don't change their attitudes concerning respiratory protection — and do so immediately. Studies confirm that cancer rates in firefighters are rising. Many firefighters have read the early studies, but don't seem to be moved to action. Is there an "it will never happen to me" chorus in the distance?

Once the fire is out, is there a concern about respiratory protection? According to Michael Donahue, a nationally recognized authority on the health and safety of fire and bombing investigators, "most atmospheric hazards are insidious and may be present for several hours or days after overhaul has been completed." Donahue notes the only way a fire scene is safe is to employ the use of proper air monitoring devices and wearing appropriate personal protective clothing and equipment. Once the fire is suppressed and the firefighters take a break, they return for overhaul and salvage operations, usually without the protection of the SCBA that protected them earlier. According to recent studies, this is likely the most vulnerable time for the firefighter, as well as the fire investigator.

The ash and debris disturbed during a fire scene investigation is loaded with toxins and chemicals, many of which have been found to be carcinogens or cancer-causing agents. It has been known for a long time there is nasty "stuff" in fires that are suppressed and/or investigated. What about the black nasal discharges experienced in the shower after a long day or night on a fire scene? That "black stuff" was actually in the lungs and it got there only because respiratory protection was not used. Lungs become toxin magnets with each breath taken — unless attitudes about respiratory protection change. Air purifying respirators are hot and cumbersome, but they keep the chemicals, toxins and airborne particulates out of the respiratory system. That can save a life in the long term, as long as every firefighter commits to wearing them on every scene. How many departments require respiratory protection for overhaul ops? Should they even have to?

It's said that something good comes out of something bad, and that is happening with the studies and monitoring of the rescue workers that logged time at the World Trade Center after the terrorist attacks of 9-11. Many of the major career-related publications tell the tale. Many of the rescue workers have become very ill and the long-term prognosis is not good. There have already been deaths that were directly attributed to exposure of the airborne toxins and particulates present just after the collapse and during the subsequent recovery operations. Medical officials speculate the worst is yet to come as it takes months, or years, for the illnesses to surface. The "good" thing is the ongoing testing of those exposed and the belief that what firefighters and fire investigators do day to day is dangerous and must be considered a health hazard.

Breathing in the combustion by-products, smoke, toxins and the hundreds of compounds found at fire scenes that contain carcinogens (cancer-causing) is harmful. Should the next fire scene be worked without respiratory protection in place because "it won't happen to me" or "it's just a little smoke" or "the fire is out, no problem now" or "I've done it this way for years and I feel (hack-hack, cough-cough) fine?"

The University of Cincinnati's (UC) environmental health researchers have extensively studied the many chemical compounds found in every fire. The UC study took data from 32 previous studies on 110,000 firefighters who were, for the most part, full-time, white males — which describes the average firefighter in America. Through their studies, they determined, "firefighters are significantly more likely to develop four different types of cancer than workers in other fields."

Grace LeMasters, PhD; Ash Genaidy, PhD; and James Lockey, MD indicate in their study, reported in last November's Journal of Occupational and Environmental Medicine, that firefighters are "twice as likely to develop testicular cancer" as well as having much higher rates of non-Hodgkin's lymphoma and prostate cancers than those workers in other, cleaner fields. They also report that firefighters are at a higher risk for multiple myeloma. LeMasters, professor of epidemiology and biostatistics at the UC, believes "there is a direct correlation between the chemical exposures firefighters experience on the job and their increased risk for cancer." The UC-led team classified cancer risks into three categories, modeled after the risk assessment established by the International Agency for Research on Cancer (IRAC):

probable
possible
(3) not

They found the following:

"Half the studied cancers, including testicular, prostate, skin, brain, rectum, stomach and colon cancer, non-Hodgkin's lymphoma, multiple myeloma and malignant melanoma were associated with firefighting, to varying levels of increased risk."

Dr. Lockey says, "there's a critical and immediate need for additional protective equipment to help firefighters avoid inhalation and skin exposures to known or suspected occupational carcinogens." He even suggests that firefighters vigorously and meticulously wash down completely in order to remove soot and other combustion byproducts from the skin.

Perhaps the personal protective equipment isn't faulty after all. There is a good probability the cancer numbers would be reduced if firefighters just weren't so stubborn and hard headed!

To learn more on the hazards of firefighting and fire investigation, visit Michael Donahue's web site at www.firescenesafety.com. There is a lot of information to in identifying the risks and determining what personal protective equipment and clothing will protect best.

Unless attitudes change on respiratory protection on active and post-fire incidents, serious health issues can be expected not too far down the road. Speaking from experience, with permanent disabilities from an accidental chemical exposure in a fire investigation scene in September 2001, my issued, non-fit-tested respirator, was not compliant. Lessons are still being learned today.

The following is an example of how easy it is to become seriously ill and ultimately die as a result of not knowing, or from being complacent.

The headline reads "Boston College officer succumbs to burn-related illness."

In 1988, Officer Thomas E. Devlin, Jr. responded to Edmonds dormitory on the campus of Boston College. A military canister of tear gas had been set off in the building's ventilation system. Over 75 firefighters responded to the incident; many of them were treated for burns from the chemical. Officer Devlin rescued and treated many victims of the incident without regard for his own safety. He sustained burns to more than 65 percent of his lungs — resulting in the serious complications which disabled him and forced him to retire.

Officer Devlin died April 6, 2007 from illness sustained from chemical burns. He was a 21-year veteran of the Boston College Police Dept.

Doug Ross

Doug Ross began his law enforcement career in 1975 as a patrolman with the Greenville, S.C. Police Department (GPD). He worked assignments in Vice and Narcotics, Detective Division, Training Officer, Part II Crimes Investigator and was eventually named the GPD's first fulltime arson investigator in early 1980s. In 1988 he became a Field Agent for the S.C. Arson Control team, which was later absorbed by the SC Law Enforcement Division, where Ross was a Lieutenant in the arson/bomb section. He has been a guest instructor at the S.C. Fire Academy and the S.C. Criminal Justice Academy for many years. He is a former president of the S.C. Chapter of the International Association of Arson Investigators (IAAI) and is a certified fire investigator sanctioned by the IAAI. In January 2007, Ross entered the private training sector when he started FireFuzz Enterprises, a fire and arson training council while offering his expertise as a court qualified expert in the field of fire and arson investigation. He can be contacted at Firefuzz@aol.com or by visiting his company website at www.DougRossCFI.net.