

FISC Bulletin Board

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IAAI Fire Investigation Standards Committee (FISC)

Considering all that we in the fire investigation business, public and private, have learned or suspected relative to potential hazards at fire and explosion scenes, there are still those who through denial or some other reason refuse to accept that these scenes are dangerous. For a number of years now, the topic of site safety and potential hazards at fire and explosion scenes continues to be a main topic for meetings and training sessions. Just what are the hazards and what is the responsibility of the individual investigator and the investigator's employer with regard to safety? While the number of agencies that have established medical monitoring programs and provide their investigators with state-of-the-art personal protection has increased over the last few years, we continue to see many investigators working unprotected and at risk. Just what are the standards that need to be considered, how important is hazard and risk assessment, what respiratory protection and protective clothing is needed and what OSHA regulations apply to fire investigators and fire investigation agencies? Many of you thought that this would be a good topic to revisit.

The "FISC Bulletin Board" October 2006 edition of *Fire and Arson Investigator* addressed the subject of hazards and safety at fire and explosion scenes. Michael Donahue prepared the article. We asked Mike to review that article and to update it where necessary. The following was prepared by IAAI member, Michael Donahue, CFI and Hazmat Technician. He addresses the standards, guidelines and regulations that have applicability to occupational safety and health standards for fire and explosion investigators.

OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR FIRE AND EXPLOSION INVESTIGATORS

Today's fire investigators face increasingly dangerous environments and conditions while conducting fire scene investigations because of the widespread use of building materials and furnishings manufactured from plastics, foams, and polymers that may pose numerous short- and long-term health hazards. These synthetic materials represent fuel loads that may produce highly toxic by-products of combustion such as acrolein, acrylonitrile, benzene, formaldehyde, hydrogen chloride, and hydrogen cyanide. These materials, some of which have been classified as probable human carcinogens, have the potential to cause personal injury, illness, and chronic occupational diseases unless personnel use appropriate personal protective measures. Although investigators typically begin their scene investigations into the origin and cause of fires and explosions after fire suppression operations are completed, they may encounter many of the same safety and health hazards faced by firefighters during suppression and overhaul activities.

The safety and health of fire and explosion investigators are often taken for granted; many incorrectly assume that by the time they arrive at a fire or explosion scene, the potential hazards are eliminated or diminished to the point where they are no longer a concern. However, several studies of firefighter occupational safety and health hazards associated with fire scene overhaul operations conducted since the early 1990's have documented that numerous toxic by-products of combustion can linger in and around fire and explosion scenes for considerable time periods. Investigators may be inadvertently exposed to numerous insidious atmospheric hazards that may cause serious adverse health effects several months or years after exposure. Although a specific link has not been definitively established, some researchers believe that these conditions may be the result of exposure to toxic by-products of combustion.

The critical question that has spawned debate and concern within the fire investigation community over the past few years that remains to be answered is, Are investigators subject to the same increased incidence of heart disease, cancer, and other serious medical conditions as firefighters because of exposure to harmful atmospheric contaminants while performing their duties? Unfortunately, the answer at the moment is “no one really knows for sure” because few organizations consider it a priority and there is little or no research being funded to determine the extent of the risk to investigators and whether there is a causal link between conducting fire scene investigations and increased incidence of illnesses such as cancer.

NFPA STANDARDS AND GUIDES

National Fire Protection Association (NFPA) 921, Guide for Fire and Explosion Investigations, NFPA 1033, Standard on Professional Qualifications for Fire Investigator, and NFPA 1500, Standard on Fire Department Occupational Safety and Health Program contain only limited information concerning the health and safety risks associated with conducting fire and explosion scene investigations. In addition, these documents do not offer specific guidance for organizations to develop adequate standard operating procedures (SOPs) or relevant training and education programs for fire and explosion investigators. Furthermore, they do not outline the elements necessary to develop and implement comprehensive occupational safety and health programs for fire investigators that address all of the key elements necessary to provide both short- and long-term preventive measures to avoid injury, illness and exposure.

The 2011 edition of NFPA 921 is slated to include an expanded safety chapter to address key issues such as, hazard and risk assessment, respiratory protection, protective clothing, decontamination and compliance with OSHA regulations.

OSHA REGULATIONS

All public and private sector employers have a responsibility to provide a “safe” workplace and to protect their employees from recognized hazards, as required under the General Duty Clause of the Occupational Safety and Health (OSH) Act of 1970. Many organizations are operating under the assumption that since the term ‘fire investigator’ is not specifically mentioned in occupa-

tional safety and health regulations that their activities are not subject to OSHA scrutiny. This belief could not be farther from the truth. In fact, investigators and their employers are expected to comply with all OSHA regulations, standards, and practices applicable to the tasks and activities conducted at their workplace, which most often will be at fire and explosion scenes. There have been a number of cases over the past several years where OSHA has cited investigators (and their employers) for failure to comply with specific safety and health regulations such as the OSHA Respiratory Protection Standard (29 CFR 1910.134).

Federal, state, and local occupational safety and health regulations vary with respect to their scope of coverage. Coverage depends on several factors, including the following: whether the state in which the investigators are employed is an OSHA “state plan” state; whether the investigators are employed by federal, state, or local agencies or are self-employed; and whether local safety and health legislation (ordinances) have been passed. For example, in OSHA “state plan” states, employees of state and local agencies and private sector employees are covered by state safety and health regulations and federal employees are covered by federal OSHA regulations. A list of the OSHA “state plan” states and specific information concerning covered activities can be accessed at www.osha.gov/fso/osp/.

Organizations that fail to comply with applicable safety and health regulations could be subject to civil and criminal penalties. As an example, in 2002 the Vancouver (Washington) Fire Marshal’s Office was cited for failure to comply with specific provisions of OSHA’s Respiratory Protection Standard and fined \$18,000 by the state Department of Labor. Although compliance with specific federal, state, and local OSHA regulations is an important objective, an effective occupational safety and health program goes beyond legal requirements to address all foreseeable employee safety and health hazards and risks. It seeks to prevent injuries, illnesses, exposures, and fatalities whether or not compliance is at issue.

All organizations must be familiar with the applicable federal, state and local OSHA requirements that apply to the safety and health of their personnel involved in conducting fire and explosion scene investigations. Compliance with the applicable OSHA regulations is essential to ensure that organizations have the ability to safely conduct investigations into the origin and cause of incidents without the fear of receiving citations for viola-

tions of occupational safety and health regulations. The development and implementation of a comprehensive fire investigator occupational safety and health program, standard operating policies and procedures, and OSHA/NFPA-compliant training and education programs will help reduce the likelihood of serious injury and an organization's susceptibility to criminal or civil penalties for noncompliance with applicable consensus standards and federal, state or local safety and health regulations. OSHA has identified the following critical elements that have consistently proven successful in helping organizations reduce the incidence of occupational injuries, illnesses, and fatalities and that are necessary to develop and implement an effective fire investigator occupational safety and health program:

- ✧ Management commitment and employee participation. Organizations must have a clearly articulated written safety and health policy statement that is understood by all personnel. It is critical that everyone understand the priority of safety and health protection in relation to other organizational values.
- ✧ Hazard and risk assessment. Identifying potential hazards at a fire or explosion scene requires an active, ongoing examination and analysis of work processes, practices, procedures, equipment, and working conditions. Identifying hazards not only helps to determine the appropriate level of personal protective clothing and equipment (PPE) needed to adequately protect investigators, but it also can be used to identify appropriate training and education needs.
- ✧ Hazard prevention and control. This is based on the determination that a potential hazard always exists at every scene. Hazards are either eliminated or managed by the implementation of SOPs and work practices that outline effective engineering controls and PPE. This process provides for the systematic identification, evaluation, prevention, and control of general workplace hazards and less obvious hazards that may arise during on-site activities.
- ✧ Safety and health training and education. An effective training and education program addresses the safety and health responsibilities of all personnel throughout the organization, including supervisors. Agencies should consider integrating some aspect of safety and health training and education into all organizational training and education activities to reinforce the importance of safety.
- ✧ Long-term commitment. Management and employees must make a serious commitment to sustain the

organization's safety and health program and make it a key priority. Without this level of commitment, the safety and health program is doomed for failure. Organizations should reach out and continually look for new and improved practices, methods, programs, technology, and equipment specifically tailored to the duties and responsibilities of investigators.

RESOURCES

There are few resources available that offer specific guidance to assist organizations in developing the necessary policies, procedures, and training or continuing education programs for investigators to comply with applicable federal, state, and local occupational safety and health requirements. The key to compliance with occupational safety and health regulations, and the foundation of an organization's standard operating procedures, policies, and investigator training programs, is a comprehensive written occupational safety and health program (that includes mandatory medical surveillance and annual screening) based on standards such as NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.

Organizations should also review the information presented in the Fire Investigator Scene Safety on-line training program which is available on the IAAI Distance Learning Web site at www.CFITrainer.net. Additional information concerning fire investigator occupational safety and health issues can also be found at www.firescenesafety.com or in the textbook *Safety and Health Guidelines for Fire and Explosion Investigators* which is available from the International Fire Service Training Association (IFSTA). Copies may be obtained by contacting IFSTA at 1-800-654-4055 or via the Internet at www.ifsta.org.

ABOUT THE AUTHOR

Michael L. Donahue is an *International Association of Arson Investigators (IAAI)* Certified Fire Investigator (CFI) and a nationally certified hazardous materials technician. He has over 25 years of experience in the fields of fire investigation, law enforcement and occupational safety and health. Mike is an Adjunct Professor at Montgomery College in Rockville, Maryland and an Adjunct Instructor at the National Fire Academy where he teaches courses in fire investigation and fire investigator safety and health.

He is the author of *Safety and Health Guidelines for Fire and Explosion Investigators* published by Fire Protection Publications /International Fire Service Training Association (IFSTA) and moderator of www.firescenesafety.com, a web site dedicated to occupational safety and health-related issues for fire and explosion investigators. Mike holds a B.S. degree in Fire and Arson Investigation from the University of Maryland and is a member of the IAAI Occupational Safety and Health Committee.