

**DEVELOPING CRITERIA FOR HAZARDOUS MATERIAL
TEAM MEMBER PHYSICALS**

STRATEGIC MANAGEMENT OF CHANGE

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Hazardous material physicals are an important tool required by law that pose a number of questions with regard to proper monitoring, tracking, and determining fitness for duty to ensure the health of Hazardous Materials Team members.

The purpose of this research was to identify factors to be used in determining appropriate exam and testing criteria and for the development of a physical exam check sheet for use by the attending physician conducting the physicals.

This study utilized action research methodology. Research questions were:

1. What factors should be considered in determining baseline physical exams and appropriate tests?
2. What factors should the physician take into consideration when reviewing physical exams for appropriateness for duty?
3. What information should be included in a check sheet, medical questionnaire that can be provided to the physician prior to exam?

Findings revealed a number of steps that need to be taken to assist in developing appropriate criteria for hazardous materials team member physicals. Based on the findings, a medical questionnaire and reporting form for exposure to hazardous substances were developed for the physician's use.

Review of the material showed that in looking at conducting physicals, the following needs to be considered:

1. Consultation with physician selected for providing exams regarding appropriate monitoring and testing.
2. Department should research and develop a list of potential chemical exposures.

3. The physician should be provided copies of OSHA, HAZWOPER, and Respiratory Standards; NIOSH Occupational Safety & Health Guidance Manual; NFPA 1582; and department written respiratory program. 3
4. Provide physician a list of equipment used by team members.
5. An accurate medical and exposure history must be completed by team members and be provided to the physician.

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Hazardous material physicals are an important aspect to ensure personnel are adequately prepared and able to function under extreme physical and mental stress that may be present at hazardous material incidents. The Albany Fire Department has had personnel trained to the Technician level since early 1980. In 1990 the department became a part of a state regional hazardous materials response system.

Members of the department's team are responsible for providing hazardous materials mitigation and containment for a number of potentially known and unknown chemicals. A number of major chemical hazards are present at fixed sites within the five-county area where we have responsibility for providing protection.

The area also represents a number of major highways, railways, and air and sea transportation that also present unique and mixed hazardous shipping materials and components. These present unique circumstances in determining appropriate initial and monitoring requirements for physical examinations that should be provided to team members.

The purpose of this research was to determine appropriate factors to be considered in selecting exam and testing criteria as well as development of a physical exam check sheet for utilization by the attending physician.

This study utilized action research methodology. Research questions were:

- What factors should be considered in determining baseline physical exams and appropriate tests?
- What factors should the physician take into consideration when reviewing physical exams for appropriateness for duty?

· What information should be included in a check sheet, medical questionnaire that can be provided to the physician prior to exam?

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BACKGROUND AND SIGNIFICANCE

The Albany Fire Department provides hazardous material services at the technician level in its fire district as well as being part of a state hazardous materials response team covering a five-county area.

This area covers a wide expanse of potential and real hazards covering fixed sites, major rail corridors, state and interstate highway systems, deep water port, and pipelines as examples. Hazardous materials team members are required to undergo medical surveillance and monitoring in order to meet Occupational Safety and Health Act (OSHA) regulations.

OSHA regulations state that members of hazardous materials teams will have medical examinations at least every twelve months unless the attending physician believes a longer period is appropriate as long as it is not more than two years. Members are also required to undergo surveillance any time they develop signs and symptoms indicating overexposure or the employee has been injured or exposed above permissible exposure limits.

OSHA regulations further require, as a part of the medical examination, a medical and work history with emphasis on symptoms that may be related to hazardous materials, health hazards, and fitness for duty and the ability to function in required personal protective equipment under conditions that may be present.

The demographics of the area and potential known and unknown exposure potential creates some difficulty in identifying appropriate medical surveillance and monitoring. In addition, the questions arise as to what are required fitness levels for hazardous materials

technicians to be fit for duty; what medical examinations and surveillance should include; what is ⁷
appropriate criteria that the physician should utilize in determining additional testing or follow-up
and certifying personnel for hazardous materials response.

Code of Federal Registry (CFR) 1910.120 requires medical evaluation and surveillance
of personnel exposed to hazardous materials during emergency response and those personnel
trained to the technician level. Recent changes to OSHA's respiratory protection program and
its effect on hazardous materials medical examinations must also be considered.

These requirements present unique questions as to appropriate testing and monitoring as
well as fitness of duty; and what information needs to be provided to the physician conducting
the physical; and what criteria the physician should utilize to determine fitness for duty as well as
baseline and additional testing that may be required based on exposure potential or actual
exposure.

This research was for the *Strategic Management of Change* at the National Fire
Academy (NFA) and the requirements of the applied research project. This paper is related to
Module 3 Managing Change Using the Change Management Model: Addressing the Albany
Fire Department's issue of hazardous materials physicals for team members and the
development of pre-physical questionnaire to assist in determining appropriate testing of
personnel, necessary baseline testing that should be conducted, and a sheet or references which
the physician may utilize to determine appropriate fitness for duty.

LITERATURE REVIEW

A literature review was conducted to identify sources of information to assist in
developing appropriate criteria for hazardous materials team member physicals, and for

developing appropriate factors to consider in selecting exam and testing criteria to be utilized in the development of a physical exam check sheet for the utilization by the attending physician. 8

The review identified factors that should be considered in determining appropriate criteria for hazardous materials team members physicals; however, no direct written information could be found for fitness of duty. However, stresses that may be encountered by hazardous materials team members are very similar in nature to those that would be expected for firefighters. A number of resources were located that discuss hazardous materials physicals and the need for monitoring and testing. No single document was located that provided a clear requirement for items to be included in the testing. The review revealed the need for development of a questionnaire that could be utilized by a physician to assist with medical exam and surveillance.

In reviewing the literature it is clear that the first step must be to ensure that applicable Occupational Safety and Health Act (OSHA) regulations are met, and that employee safety be the first priority in determining appropriate medical requirements.

The OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard 29 CFR 1910.120, serves as a starting point for hazardous material team members medical surveillance requirements. The standard specifically addresses medical surveillance requirements for hazardous materials team members. The standard also addresses the frequency of hazardous material medical examinations and consultations for hazardous materials team members:

Prior to assignment, every 12 months unless physician states longer (no longer than biennially), at termination of employment or reassignment, as soon as possible after upon notification that employee has developed signs or symptoms of indicating possible

over exposure to hazardous substances or health hazards, or that the employee was injured or exposed above the permissible exposure limits/levels or at more frequent times if physician determines necessary (p.9321).

However, the standard itself does not address the components that are required for medical surveillance other than it shall include:

Medical and work history (or updated history if one is in the employee's file) with special emphasis on symptoms related to the handling of hazardous substances and health hazards, and to fitness of duty including the ability to wear any required PPE under conditions (i.e., temperature extremes) that may be expected at the work site (p.9321).

Another area to consider when looking at medical requirement is the recent change to OSHA Respiratory Standard, CFR 1910.134 as addressed in the Federal Register volume 63, number 5, January 8, 1998. Addresses changes and requirements which have a direct impact on requirements for hazardous materials team members that must be included as part of annual medical surveillance. The standard in addressing medical evaluations for personnel utilizing respirators states “ Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job, and workplace conditions in which the respirator may be used, and the medical status of the employee.” (p.1271) Regardless of the type of respirator worn a medical evaluation must be completed.

The standard also requires the medical evaluation prior to utilization of respirators to determine ability to utilize a respirator prior to use and fit testing. The employer is further responsible for providing the evaluation without cost to employees. “The employer shall identify a physician or other licensed health care professional (PLHCP) to perform medical evaluations

using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire.” (p.1272) The standard also requires follow-up medical examination based on answering ‘yes’ to identified questions on the medical questionnaire or follow-up as identified during initial medical examination.

The standard also requires additional information which must be supplied to the PLHCP before a recommendation is made with regard to ability to use a respirator. These include:

- (A) The type of and weight of the respirator to be used by the employee;
 - (B) The duration and frequency of respirator use (including use for rescue and escape);
 - (C) The expected physical work effort;
 - (D) Additional protective clothing and equipment to be worn; and
- (ii) Any supplemental information provided previously to the PLHCP regarding an employee need not be provided for a subsequent medical evaluation if the information provided previously and the PLHCP remain the same.
- (iii) The employer shall provide the PLHCP with a copy of the written respiratory protection program and a copy of this section (p.1272).

It is clear according to OSHA regulations that a medical questionnaire is required, that must be provided to the health care professional. Also established is the need to address areas that are to be considered in establishing a medical surveillance program and medical monitoring. One of the issues addressed by OSHA in both the HAZWOPER Standard and the Respiratory Standard is the fitness for duty utilizing protective equipment. OSHA does not address what should be considered in this area, but requires it of the health care professional in certifying an employee’s ability to perform. The National Fire Protection Association (NFPA) provides some insight with regard to use of protective equipment, respirators, and tools in its standards.

Materials Incidents addresses the use of protective clothing and respiratory protection:

The hazardous materials technician shall demonstrate the ability to don, work in, and doff both liquid splash- and vapor- protective chemical-protective clothing and any other specialized personal protective equipment provided by the authority having jurisdiction, including the appropriate respiratory protection (p.472-18).

The standard also addresses the ability to perform various control functions while in protective clothing such as patching leaks, accessing domes on trucks and rail cars, over packing drums, closing valves that may be open, and controlling fire. The hazardous materials standard does not address specific medical criteria that should be considered as part of a medical exam. The requirements and workload expected of a hazardous materials technician appear to be very similar however to what is expected of a firefighter.

NFPA Standard 1500, "Fire Department Occupational Safety and Health Program," 1992, addresses the need of fire department members being medically evaluated and certified. "Medical evaluations for all candidates and members shall take into account the risks and functions of associated with the individuals duties and responsibilities" (p.1500-13). The standard also references NFPA Standard 1582, 1992, "Standard on Medical Requirements for Fire Fighters."

This standard provides a very comprehensive program with regard to medical requirements for firefighters. Appendix C of the document addresses essential firefighting functions based on performance objectives stated in NFPA 1001, Standard for Fire Fighter Professional Qualifications. Review of these essential functions reveal factors a hazardous materials technician can expect to encounter in similar environmental conditions.

- (a) Operate both as a member of a team and independently at incidents of uncertain duration.
- (b) Spend extensive time outside exposed to the elements.
- (c) Tolerate extreme fluctuations in temperature while performing duties. Must perform physically demanding work in hot (up to 400oF), humid (up to 100%) atmospheres while wearing equipment that significantly impairs body cooling.
- (d) Experience frequent transition from hot to cold and from humid to dry atmospheres.
- (e) Work in wet, icy, or muddy areas.
- (f) Perform a variety of tasks on slippery, hazardous surfaces such as on rooftops or from ladders.
- (g) Work in areas where sustaining traumatic or thermal injuries is possible.
- (h) Face exposure to carcinogenic dusts such as asbestos, toxic substances such as hydrogen cyanide, acids, carbon monoxide, or organic solvents either through inhalation or skin contact (p.1582-20).

The standard continues to address the impact of protecting clothing and equipment, utilization of breathing apparatus, life and death situations, long periods of work and intense physical activity, the use of tools and equipment in performing duties, and relying on senses to assist in evaluating hazards and making appropriate decisions.

NFPA 1582 continues by addressing components that should be included as part of a medical evaluation. The physician conducting a medical evaluation must also “understand the physiological and psychological demands placed on fire fighters and shall understand the environmental conditions under which fire fighters must perform” (p.1582-6). The standard

further addresses medical evaluations and what they should include. “The annual evaluation shall
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consist of: (a) An interval medical history. (b) An interval occupational history, including
significant exposures. (c) Height and weight. (d) Blood pressure”(p.1582-6). The standard goes
on to address components of the medical exam that should be included as part of the
examination.

- (a) Vital signs: Pulse, respiration, blood pressure, and if indicated, temperature.
- (b) Dermatological system.
- (c) Ears, eyes, nose, mouth, throat.
- (d) Cardiovascular system.
- (e) Respiratory system.
- (f) Gastrointestinal system.
- (g) Genitourinary system.
- (h) Endocrine and metabolic system.
- (i) Musculoskeletal system.
- (j) Neurological system.
- (k) Audiometry.
- (l) Visual acuity, and peripheral vision testing.
- (m) Pulmonary function testing.
- (n) Laboratory testing if indicated.
- (o) Diagnostic imaging, if indicated.
- (p) Electrocardiography, if indicated (p.1582-7).

The Medical Requirements for Firefighters further provides information for the physician
to utilize that provides categories of medical conditions which a firefighter may have, category A

medical conditions, that would prohibit medical certification, and category B conditions that are of sufficient severity to prevent a member from performing without reasonable accommodations. 14

Appendix B, Guide for Fire Department Physicians, addresses the use of the standard for other jobs:

The medical conditions outlined in Chapter 2 apply to individuals conducting essential firefighting functions. (See Appendix C.) The application of these guidelines to individuals with other fire department jobs requires careful consideration of the job duties of these other individuals and medical conditions that might effect a person's ability to conduct those duties (p.1582-17).

In comparing the job duties of those listed for firefighting functions and those addressed as a part of NFPA 472 Standard for Professional Competence for Responders to Hazardous Materials, a strong correlation can be drawn between the job duties of a firefighter and a hazardous materials technician.

Appendix B further addresses firefighting functions and the effect and impact that hazardous materials incidents can also have:

Studies have shown that firefighting functions require working at near maximal heart rates for prolonged periods of time. Heavy protective equipment (including respirators) and the heat from fire contribute to this physical load. Firefighters and emergency response personnel also are exposed to many toxic substances during their work... Hazardous materials incidents may involve exposure to many other toxic materials (p1582-17).

In the United States Environmental Protection Agency (EPA) (1985) Safety and Health Compliance for Managers, an excellent resource was found for developing a medical program for hazardous materials responders. They state that high levels of stress can be experienced by

hazardous waste workers. “Their daily tasks may expose them to toxic chemicals, safety hazards, biological hazards, and radiation. They may develop heat stress while wearing protective equipment or working under temperature extremes, or face life-threatening emergencies such as explosions and fires” (p.5-1).

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In developing a program, Safety and Health Compliance for Managers discusses the need in utilizing an experienced occupational health physician and provides additional guidelines should one not be available. Under the medical program, the need for evaluation of hazards is addressed as part of the exam. “Monitoring needs of each worker should be determined based on the workers medical and occupational history, as well as current and potential exposures on site” (p.5-2). Also discussed are some of the chemicals that are more likely to be present and that should be consider:

While it is often impossible to identify every toxic substance that exists at each hazardous materials waste site, certain types of hazardous substances or chemicals are more likely to be present than others. Some of these are:

- Aromatic Hydrocarbons
- Asbestos (or asbestiform particles)
- Dioxin
- Halogenated aliphatic hydrocarbons
- Heavy metals
- Herbicides
- Organochlorine insecticides
- Organophosphate and carbamate insecticides
- Polychlorinated biphenyls (PCBs) (p.5-1).

substance chemical groupings identifying known compounds, uses, target organs effected, potential health effects, and medical monitoring. This table can be very beneficial in assisting with the development of baseline testing for the hazardous materials technician, based on hazards that may be encountered in their jurisdiction.

In addressing fitness for duty as part of a medical program, the EPA addresses the need to perform strenuous tasks, wearing protective equipment that can contribute to heat stress, and discuss the need for pre-employment screening with attention to:

Occupational and Medical History

- Make sure worker completes an occupational and medical history questionnaire.
Review the questionnaire before seeing the worker. In the examining room, discuss the questionnaire with the worker, paying special attention to prior occupational exposures to chemical and physical hazards.
- Review past illnesses and chronic diseases, particularly atopic diseases such as eczema and asthma, lung diseases, and cardiovascular disease.
- Review symptoms, especially shortness of breath or labored breathing on exertion, other chronic respiratory symptoms, chest pain, high blood pressure, and heat intolerance.
- Record relevant lifestyle habits (e.g., cigarette smoking, alcohol and drug use) and hobbies.

Physical Examination

- Conduct a comprehensive physical examination of all body organs, focusing on the pulmonary, cardiovascular, and musculoskeletal systems.

- Note conditions that could increase susceptibility to heat stroke, such as obesity¹⁷ and lack of physical exercise.
- Note conditions that could effect respirator use, such as missing or arthritic fingers, facial scars, dentures, poor eyesight, or perforated ear drums.

Ability to Work While Wearing Protective Equipment

- Disqualify individuals who are clearly unable to perform based on medical history and physical exam (e.g., those with severe lung disease, heart disease, or back or orthopedic problems).
- Note limitations concerning the worker's ability to use protective equipment.
- Provide additional testing (e.g., chest X-ray, pulmonary function testing, electrocardiogram) for ability to wear protective equipment where necessary.
- Base the determination on the individual worker's profile (e.g., medical history and physical exam, age, previous exposures, and testing).
- Make a written assessment of the worker's capacity to perform while wearing a respirator (p.5-6).

Nole, Hildebrand, and Yvorra, in their book also address the possibility of being exposed to high physiological and psychological stress in performance of duties.

Routine activities may expose them to both chemical and physical hazards. They may develop heat stress while wearing protective clothing or while working under temperature extremes, not to mention the possibility of facing life-threatening emergencies such as fire and explosions (1995, p.58).

With reference to medical surveillance they also stress the primary objectives of the program to: "(1) determine that an individual can perform his or her assigned duties, including the

use of personal protective clothing and equipment; and (2) to detect any changes in body system¹⁸ functions caused by physical and/or chemical exposures” (1995, p.58). Also addressed as a part of the pre-employment screening is the need for a “medical history, occupational history, physical examination, determination for fitness to work wearing protective equipment, and baseline monitoring for specific exposures” (1995, p.59).

The National Fire Protection Handbook 17th edition (Cote, Ed., 1992) also addresses medical surveillance and consultation, and stresses the need for medical consultation as soon as notification by an employee that they have been possibly exposed to hazardous substances:

As soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible overexposure to hazardous substances or health hazards, or that the employee has been injured or exposed above the permissible exposure limits or published exposure levels in an emergency situation. The term “health hazard” also includes stress due to the temperature extremes. Further definition of the terms used as above can be found in Appendix A of 29 CFR 1910.1200, OSHA Hazard Communications Standard (p.9-127).

The NFPA also addresses the need for the medical consultation to be conducted by or supervised by a licensed physician and preferably knowledgeable in occupational medicine. They further state:

The employer must provide the attending physician with one copy of OSHA standard 1910.120 and its appendices. In addition, the physician must be provided with the following information for each employee:

4. A description of the employee’s duties as they relate to the employee’s exposures;

5. The employee's exposure levels or anticipated exposure levels;
6. A description of any personal protective equipment used or to be used;
7. Information from previous medical examinations of the employee which is not readily available to the examining physician; and
8. Any information required by other OSHA standards (p.128).

Monitoring at hazardous materials incidents will be an important function in assisting personnel in determining whether Permissible Exposure Limits have been exceeded, as well as if appropriate protective clothing and equipment was utilized to limit exposure.

Emergency Responder Training Manual for the Hazardous Materials Technician (Andrews, Ed., 1992), discusses the human health effects of hazardous materials. The material addresses the need for employees to recognize risks and how they minimize those risks. They also address the need to be aware of toxic effects of specific chemicals and the need to be able to identify immediate and long-term effects of chemicals.

As part of this they address the difference between workplace exposure and emergency response exposure limits.

Since PELs and TLVs are set to provide safe working conditions for employees who encounter exposure for 8 hours each day, 5 days a week, throughout their working lives, it has been questioned where these levels are appropriate for hazmat responders whose exposures will be rare and relative short (p.350).

Further discussed is work of groups that have addressed this issue:

The National Research Council's Committee on Toxicology has published two lists: emergency exposure guidance limits (EEGLs) for emergency response personnel and short term emergency guidance levels (SPEGLs) for the protection of the community.

The EEGLs are set for defined occupational groups such as firefighters hazmat

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responders, a population which is typically younger and healthier than the general public (p.350).

The importance of identifying chemicals and assessing exposure to chemicals is well documented and the theme is continued here:

The first and most obvious step in recognizing the symptoms of chemical exposure is knowing what they are. In every hazardous materials incident the chemical must be identified for a number of reasons, not the least of which is gathering of human exposure data. The agency having jurisdiction should keep records regarding an individual's role and possible exposure in each incident... Often the accurate attribution of symptoms to their causes is the first indication of exposure to a chemical agent. Since some physicians are poorly informed about chemical exposure, responders should be prepared to provide them with written information about symptoms of such exposure and the target organs of incident chemicals (p.363).

Finally, Emergency Responder Training Manual reinforces the need for medical surveillance and medical monitoring, and to consider monitoring for specific chemicals in which employees may have been exposed:

Monitoring should be specific to the action of the chemical and what is known about how the way the body processes it. OSHA has written separate standards for a number of toxic chemicals, and each standard includes specifically required medical monitoring...Medical monitoring for chemicals which are not regulated by a specific standard can be referenced through other sources of information and consultation with trained industrial hygienist or physician (p364).

September, 1990, the need to provide potential chemical hazard analysis is reinforced as part of a medical surveillance program. “Based upon the list of substances that your team may be exposed to during responses, the physician will provide, with your assistance, a written medical monitoring procedure” (p.10).

Borak (1990 October) in his article in Emergency Care Quarterly addresses the need for medical monitoring of responders that are injured or develop signs and symptoms of overexposure to hazardous materials. “Surveillance is also required for emergency responders who have been exposed to HAZMAT concentrations greater than permissible exposure limits (PELs) without necessary personal protective equipment such as self-contained breathing apparatus (SCBA)” (p.35).

The research material involved relevant information that was located through the Learning Resource Center at the National Emergency Training Center, materials from the Albany Fire Department, and sources located through the Internet. The action research methodology was selected for this paper.

The desired outcome was to gather and identify methodologies to determine what should be considered in developing criteria for hazardous materials team member physicals for the City of Albany and its hazardous material team members, and develop a physical exam check sheet for utilization by the attending physician. During the research a number of factors became clear that need to be included; first and foremost is the need to have a comprehensive medical questionnaire completed by employees and given to the health care professional for reference as part of a medical exam and surveillance program. In addition, the recent changes to the OSHA respiratory program must be made a part of this questionnaire that is provided to the physician. The material also revealed the need for reporting exposures to chemical hazards and the need for documentation of exposure and follow-up monitoring.

Utilizing the information located, a medical questionnaire was developed to meet current regulatory requirements and to provide appropriate information to the health care professional conducting the medical exam. A number of resources were also identified that should be provided to the health care professional to assist with determining appropriate medical testing and monitoring, as well as determining fitness for duty. An important aspect as part of the research that was identified was the importance of a physician if possible that is familiar with occupational medicine and/or industrial hygiene.

Some excellent publications were located that can assist a physician in determining appropriate testing based on exposure or potential exposure responders may face. Finally, in considering the testing of hazardous material technicians, the hazards that one may be exposed to need to be considered for monitoring requirements. This may be difficult for transportation emergencies, but is possible through a hazard analysis of fixed site potential that is available through Community-Right-to-Know programs for the areas that team members are expected to respond to. This information should be provided and discussed with the physician to assist with determining appropriate procedures.

Limitations

During the research for determining factors that the physician should take into consideration when reviewing physical exams for fitness for appropriate duty, no clear information was found for a fitness of duty for hazardous materials team members. The National Fire Protection Association (NFPA) provided some excellent material on fitness for duty in NFPA 1582 medical requirements for firefighters. The research showed that the physical and work requirements for hazardous material technicians are very similar in scope. This document should be provided for physician review and utilized to assist with fitness for duty. Information on hazardous material physicals in general was somewhat difficult to locate, although sources located were very comprehensive.

RESULTS

The findings include answers to the following research questions:

9. What factors should be considered in determining baseline physical exams and appropriate tests?

In review of material, the first factor that must be considered is OSHA standards that legally mandate physical requirements for hazardous material technicians in the HAZWOPER standard, as well as the recently revised OSHA standard on Respiratory Protection. These two documents must be reviewed to ensure baseline testing for medical monitoring and surveillance is appropriately met.

These two documents must be compared with actual testing to ensure appropriate legal requirements are met. The HAZWOPER standard requires a medical examination prior to assignment as a hazardous materials team member and at least annually unless the physician allows longer period. In no case shall an exam be longer than two years. OSHA requires medical and work history information as part of the medical exam:

Medical and work history (or updated history if one is in the employee's file) with special emphasis on symptoms related to the handling of hazardous substances and health hazards, and to fitness of duty including the ability to wear any required PPE under conditions (i.e., temperature extremes) that may be expected at the work site (p.9321).

The OSHA Respiratory Program provides a more in depth look for hazardous material physicals with the requirements that are now in effect for users of respirators. The requirements of the standard including the questionnaire should be included as part of an annual medical exam and surveillance program for hazardous materials technicians. There is no real need to have separate medical monitoring to meet two separate standards. The Respiratory Standard, though, as the HAZWOPER standard, primarily provide the requirement for baseline testing and exams.

The NFPA through their standards, however, do provide items that should be considered as part of a baseline medical exam. NFPA 1582 which addresses medical

identifies components of the medical exam that should be monitored:

- (a) Vital signs: Pulse, respiration, blood pressure, and if indicated, temperature.
- (b) Dermatological system.
- (c) Ears, eyes, nose, mouth, throat.
- (d) Cardiovascular system.
- (e) Respiratory system.
- (f) Gastrointestinal system.
- (g) Genitourinary system.
- (h) Endocrine and metabolic system.
- (i) Musculoskeletal system.
- (j) Neurological system.
- (k) Audiometry.
- (l) Visual acuity, and peripheral vision testing.
- (m) Pulmonary function testing.
- (n) Laboratory testing if indicated.
- (o) Diagnostic imaging, if indicated.
- (p) Electrocardiography, if indicated (p. 1582-7).

This document should be provided to the physician conducting the medical exam as a reference document to review prior to conducting the physical. The document provides instruction for physicians as well as disqualifying ailments.

NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site activities also provides an excellent resource on medical exam components in chapter 5. They

testing that should be considered based on those hazards.

While it is often impossible to identify every toxic substance that exists at each hazardous materials waste site, certain types of hazardous substances or chemicals are more likely to be present than others. Some of these are:

- Aromatic Hydrocarbons
- Asbestos (or asbestiform particles)
- Dioxin
- Halogenated aliphatic hydrocarbons
- Heavy metals
- Herbicides
- Organochlorine insecticides
- Organophosphate and carbamate insecticides
- Polychlorinated biphenyls (PCBs) (p.5-1).

In the context of emergency response personnel and the unknowns that they are expected to respond to and mitigate, it would make sense to include as part of the medical exam and surveillance, testing to monitor for exposure to these chemicals and hazards. Chapter 5 includes excellent reference material that can be utilized based on potential chemical exposure, target organs effected, and the monitoring that should be conducted to detect possible exposure.

Physical Examination

- Conduct a comprehensive physical examination of all body organs, focusing on the pulmonary, cardiovascular, and musculoskeletal systems.
- Note conditions that could increase susceptibility to heat stroke, such as obesity and lack of physical exercise.
- Note conditions that could effect respirator use, such as missing or arthritic fingers, facial scars, dentures, poor eyesight, or perforated ear drums(p.5-6).

These factors as well as local hazardous and exposure potential should be considered in identifying appropriate baseline physical exams and the appropriate tests that should accompany the exam.

Monitoring should be specific to the action of the chemical and what is known about how the way the body processes it. OSHA has written separate standards for a number of toxic chemicals, and each standard includes specifically required medical monitoring...

Medical monitoring for chemicals which are not regulated by a specific standard can be referenced through other sources of information and consultation with trained industrial hygienist or physician (Andrews (Ed) 1992, p.364).

Consideration should be given to extremely hazardous substances that technicians may respond to. This information should be available through Community-Right-to-Know programs. These factors were considered in the development of baseline exam and testing criteria for the Albany Fire Department (Appendix A, pg.40).

2. What factors should the physician take into consideration when reviewing physical exams for fitness for duty.

Although no direct information was located on determining fitness of duty for hazardous materials technicians, a number of factors were located that can be utilized by a physician to assist with determining fitness of duty for a hazardous materials technician. The best document located that can provide a physician with substantiated information to assist in determining fitness of duty based on the medical exam was the NFPA standard on medical requirements for firefighters.

The document provides a very good resource tool to assist a physician in determine appropriate fitness for duty, essential functions that can be expected of a hazardous material technician that mirror those of a firefighter include:

- (a) Operate both as a member of a team and independently at incidents of uncertain duration.
- (b) Spend extensive time outside exposed to the elements.
- (c) Tolerate extreme fluctuations in temperature while performing duties. Must perform physically demanding work in hot (up to 400oF), humid (up to 100%) atmospheres while wearing equipment that significantly impairs body cooling.
- (d) Experience frequent transition from hot to cold and from humid to dry atmospheres.
- (e) Work in wet, icy, or muddy areas.
- (f) Perform a variety of tasks on slippery, hazardous surfaces such as on rooftops or from ladders.
- (g) Work in areas where sustaining traumatic or thermal injuries is possible.
- (h) Face exposure to carcinogenic dusts such as asbestos, toxic substances such as hydrogen cyanide, acids, carbon monoxide, or organic solvents either through inhalation or skin contact (p.1582-20).

Another factor that needs to be considered are those requirements that are a part of the OSHA Respiratory Standard that address the utilization of breathing apparatus. Those factors that should be considered by the physician in determining fitness for duty include:

- (A) The type of and weight of the respirator to be used by the employee;
 - (B) The duration and frequency of respirator use (including use for rescue and escape);
 - (C) The expected physical work effort;
 - (D) Additional protective clothing and equipment to be worn; and
- (ii) Any supplemental information provided previously to the PLHCP regarding an employee need not be provided for a subsequent medical evaluation if the information provided previously and the PLHCP remain the same.
- (iii) The employer shall provide the PLHCP with a copy of the written respiratory protection program and a copy of this section (p.1272).

To assure that the physician has appropriate information to make qualified determinations of fitness for duty, the reference materials and information listed in (Appendix B, pg.41) should be secured and provided to the physician prior to conducting medical exams and surveillance. After review by the physician a meeting should be set with the physician to discuss any questions that may exist.

3. What information should be included in a check sheet/medical questionnaire that can be provided to the physician prior to exam.

The information on this subject is directly driven by OSHA regulations, in particular the Respiratory Standard requiring completion of a medical questionnaire secondary to the utilization of respiratory protection by hazardous materials team members “The employer shall identify a physician or other licensed health care professional (PLHCP) to perform medical evaluations

using a medical questionnaire or an initial medical examination that obtains the same information 30
as the medical questionnaire” (p.1272). It appears that with the requirement of physicals for
hazardous materials technician as addressed by the HAZWOPER standard the information
needs to be included as part of the physical. With this requirement the information required of the
Respiratory Standard will still need to be provided to the physician. The questionnaire required
of the Respiratory Standard is very comprehensive and provides a good baseline for the
development of a check sheet/medical questionnaire.

The HAZWOPER standard also requires a medical and work history as part of a
medical surveillance program:

Medical and work history (or updated history if one is in the employee’s file) with special
emphasis on symptoms related to the handling of hazardous substances and health
hazards, and to fitness of duty including the ability to wear any required PPE under
conditions (i.e., temperature extremes) that may be expected at the work site. (p.9321)

The National Fire Protection Agency in Standard 1582 as well as OSHA address the
need to evaluate past history and the inclusion of exposure information. The periodic medical
evaluation should include “The annual evaluation shall consist of: (a) An interval medical history.
(b) An interval occupational history, including significant exposures. (c) Height and weight. (d)
Blood pressure” (p.1582-6). It is extremely important to have a method in place to document
actual or potential exposures that may have occurred since the last medical exam and for that
information to be provided to the physician.

National Institute for Occupational Safety and Health continued the same trend in
discussing medical surveillance/monitoring needs based on the history and potential exposures

of medical consultation with regards to information that should be provided to a physician states:

The employer must provide the attending physician with one copy of OSHA standard 1910.120 and its appendices. In addition, the physician must be provided with the following information for each employee:

1. A description of the employee's duties as they relate to the employee's exposures;
2. The employee's exposure levels or anticipated exposure levels;
3. A description of any personal protective equipment used or to be used;
4. Information from previous medical examinations of the employee which is not readily available to the examining physician; and
5. Any information required by other OSHA standards (p.128).

Addressed as part of the information necessary for questionnaires, considerable comments were made on the need to document exposures for monitoring requirements as part of baseline testing as well as surveillance. The timing of physician review will be based on the type of chemical exposure and the degree of hazard that may be presented by the exposure. A reporting mechanism should be in place for reporting exposure.

As soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible overexposure to hazardous substances or health hazards, or that the employee has been injured or exposed above the permissible exposure limits or published exposure levels in an emergency situation (Cote (Ed.) 1992, p.9-127).

It will also be important to monitor hazardous materials incidents and document any potential exposure that can be provided to the physician at the time of exam.

The first and most obvious step in recognizing the symptoms of chemical exposure is knowing what they are. In every hazardous materials incident the chemical must be identified for a number of reasons, not the least of which is gathering of human exposure data. The agency having jurisdiction should keep records regarding an individual's role and possible exposure in each incident...Often the accurate attribution of symptoms to their causes is the first indication of exposure to a chemical agent. Since some physicians are poorly informed about chemical exposure, responders should be prepared to provide them with written information about symptoms of such exposure and the target organs of incident chemicals (Andrews (Ed) 1992, p.363).

The information reviewed addressed the need for a medical questionnaire that encompasses a number of areas that can have an impact in properly protecting the hazardous materials technician. Based on this information a questionnaire and an exposure reporting form were developed to be completed by hazardous materials team members after known or suspected exposure and prior to medical exam/surveillance (Appendix C & D, p.43-53).

DISCUSSION

Hazardous material physicals are an important aspect for personnel to ensure they are adequately prepared physically and mentally for the hazards that may be presented. Besides being legally required, they are also an important aspect of monitoring potential health effects of those members responding to hazardous materials.

Many studies have shown that the potential impact of exposure to chemicals and its effect on the human body are not adequately known. Medical monitoring and surveillance is an

important part of an overall system that must be in place to provide protection to personnel and ³³

to provide a historical record for later review. The material reviewed shows the need for a number of factors to be considered when looking at the medical monitoring of team members.

These include work and medical history, actual or potential chemical exposure, and the ability to physically meet the demands and stresses that may be placed on the cardiac and respiratory systems. The actual physical exam by the physician and the components that should be included for team members are all important factors that must be taken into consideration in the development of criteria for hazardous materials team members. Changes made to federal and state standards must constantly be taken into consideration, with regards to physical exam standards as seen with the recent changes to OSHA Respiratory Standard. To address these needs a program must be in place to ensure adequate reporting by employees of actual or possible exposure to chemicals that can be maintained as part of a medical history for the employee and provide to the physician at time of medical review.

The research points to the need to adequately acquaint the physician with the type of equipment to be used by employees, type of work load expected, and the hazards expected. The physician, as part of the exam, must determine the employee's fitness for duty. With no written standard on fitness for duty for hazardous materials team members, the employer must adequately provide the physician necessary material to review so that appropriate decisions may be made.

This can best be accomplished by providing copies of OSHA's HAZWOPER and Respiratory Protection standards as well as NFPA 1582, and NIOSH Occupational Safety and Health Guidance for Hazardous Waste Site Activities. These documents as well as completion of

Appendices A, B, and C should provide a strong background for the physician conducting the
34
medical exam.

RECOMMENDATIONS

Hazardous material physicals are an important safety factor for emergency responders. With the completion of this report and in depth literature review, a number of steps can be taken to assist with determining factors that should be considered in selecting exam and testing criteria and the development of a physical exam check sheet for utilization by the attending physician.

6. The physician conducting the medical exam for hazardous material team members must be consulted regarding appropriate medical monitoring and testing for hazards that may be expected. In addition, discussion must take place with the physician regarding information that was developed from the research material and included as a baseline in Appendix A.
7. The hazardous materials team or department should research the chemical list that they may be exposed to during response assignments. This can best be accomplished by review of extremely hazardous substances that are listed in Community-Right-to-Know programs and by discussing the need for monitoring with the physician.
8. The physician should be provided copies of the following documents, OSHA HAZWOPER, and Respiratory Standard, NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities chapter 5, NFPA 1582, and a copy of the department's written respiratory program. These

information that the physician should be aware of.

9. The department physician must be provided with information that can assist with appropriate determination for fitness of duty, this includes information provided by the department on equipment to be used and information contained in NFPA 1582. The completion of Appendix B will assist the physician in this area.
10. An accurate medical and exposure history for team members must be provided to the physician conducting medical/surveillance exams. Completion of Appendix C by team members prior to physician appointment should provide valuable information to the physician to assist in determining appropriate testing as well as fitness for duty.

A number of factors must be considered in providing quality medical monitoring and to ensure appropriate steps are taken to protect hazardous material members and identify potential health problems that may effect them. Use of these steps as part of a total safety plan should provide for a safe work environment for hazardous material team members.

Andrews, Lori P (Ed)(1992)Emergency Responder Training Manual for the Hazardous Materials Technician, New York, NY: Van Nostrand Reinhold.

Borak, Jonathan MD,FACP (1990, October) The Superfund Amendments and Reauthorization Act of 1986: Implications for prehospital services, Emergency Care Quarterly, 29 - 36.

Cote, Arthur E. (Ed)(1991) Fire Protection Handbook 17th ed., Quincy, MA: National Fire Protection Association.

Federal Register (Vol.54 No.42, March, 1989) 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response (HAZWOPER), Washington, D.C.: Author.

Federal Register (Vol.63 No.5, January,1998) CFR 1910.134 Respiratory Protection, Washington, D.C.: Author.

National Fire Protection Association (1992). NFPA 1500: Fire Department Occupational Safety and Health Program, (1994ed.) Quincy, MA: Author.

National Fire Protection Association (1992). NFPA 1582: Medical Requirements for Fire Fighters, (1992ed.) Quincy, MA: Author.

National Fire Protection Association (1997). NFPA 472: Professional Competence of Responders to Hazardous Materials Incidents, (1997ed.) Quincy, MA: Author.

National Institute for Occupational Safety and Health(NIOSH)(1995) Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, Washington, D.C.: Author.

Nole, Gregory G., Hildebrand, Michael S., & Yvorra, James G. (1995) Hazardous Materials Managing the Incident, Stillwater, OK.: Fire Protection Publications Oklahoma State University.

Washington, D.C.: Author.

Medical Exam

1. Review Occupational and Medical History
 1. Include significant exposures - order appropriate additional testing as required

Physical Exam - Baseline

1. Height
2. Weight
3. Temperature
4. Pulse
5. Respiration
6. Blood Pressure
7. Eyes - include vision
8. Ears - include audiometric test
9. Chest (heart and lungs)
 1. Stress test EKG if indicated
 2. 12 lead EKG
 3. Pulmonary function
 - 1) FEV1
 - 2) FVC
 - 3) FEV1 to FVC ratio
 4. Chest x-ray (two views) if none on file
10. Peripheral vascular system
11. Abdomen and rectum
 1. Hernia
 2. Occult stool
12. Spine and other components of the musculoskeletal system
13. Genitourinary system
14. Skin
15. Nervous system

Blood Test

1. Baseline CBC
2. Biochemical battery (SMA)
3. Blood chemistry (20 elements)
4. Urinalysis (biochemical and microscopic)
5. Appropriate blood tests for potential exposures not covered

Reference Materials to be Provided to Attending Physician**Required Publications to Provide Physician:**

OSHA 29 CFR 1910.120 Hazwoper Standard
OSHA 29 CFR 1910.134 Respiratory Standard

Available from:

Superintendent of Documents

P.O. Box 371954

Pittsburgh, Pennsylvania 15250-7954

Recommended Publications to Provide Physician:

NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (Cost: \$12.00)

Specific Medical Tests Recommended by NIOSH/OSHA and Other Researchers for OSHA Regulated Substances (Poster) 98-105 (Cost: free)

Available from:

NIOSH Publications

Mail Stop C-13

4676 Columbia Parkway

Cincinnati, Ohio 45226-1998

Telephone: (513) 533-8573

Fax: (513) 533-8573

E-mail: pubstaft@cdc.gov

Home Page: <http://www.cdc.gov/niosh>

NFPA Standard 1582 – Medical Requirements for Firefighters - Current Edition

Available from:

National Fire Protection Association

P.O. Box 9101

Quincy, MA 02269-9101

Telephone: 1-800-344-3555

Fax: (617) 984-7110

Home Page: <http://www.nfpa.org>

Albany Fire Department Written Respiratory Program

Respirator Type: _____

Weight: _____

Duration (time): _____

Frequency of Use: _____

Protective Equipment Used:	_____	Turnouts
	_____	Level C Suit
	_____	Level B Suit
	_____	Level A Suit
	_____	Flash Protection

Expected physical Work Effort:	_____	Low
	_____	Moderate
	_____	High

Albany Fire Department
Employee Medical and Respiratory Questionnaire

To the Employee: Can you read? (circle one) Yes No

Your employer must allow you to answer this questionnaire during normal working hours or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A - Section 1 (Mandatory)	
<i>The following information must be provided by every employee who has been selected to use any type of respirator. (please print)</i>	
Today's date:	
Your name (last, first, MI):	
Your address (include city, state, zip):	
Date of Birth:	
Social Security Number:	
Sex (circle one): Male Female	
Your Height: ____ ft. ____ in.	
Your weight:	
Your job title:	Department:
Personal Physician (include address and phone number):	
A phone number where you can be reached by the health care professional who reviews this questionnaire (include the area code): <div style="text-align: right; margin-right: 50px;">_____ - _____ - _____</div>	
The best time to phone you at this number:	
Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes No	
Check the type of respirator you will use (you can check more than one category):	

_____	N, R, or P disposable respirator (filter-mask, non cartridge type only)	42
_____	Other type (for example, half-or full-facepiece, powered air purifying, supplied air, self-contained breathing apparatus)	
Have you worn a respirator (circle one): Yes No		
If "yes," what type(s):		
Part A - Section 2 (Mandatory)		
The following questions must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").		
Do you currently smoke tobacco, or have you smoked tobacco in the last month: Yes		
No		
Have you ever had any of the following conditions?		
Seizures (fits):	Yes	No
Diabetes (sugar disease):		Yes
		No
Allergic reactions that interfere with your breathing:		Yes
		No
Claustrophobia (fear of closed-in places):	Yes	No
Trouble smelling odors:		Yes
		No
Have you ever had any of the following pulmonary or lung problems?		
Asbestosis:	Yes	No
Asthma:	Yes	No
Chronic bronchitis:	Yes	No
Emphysema:	Yes	No
Pneumonia:	Yes	No
Tuberculosis:	Yes	No

Silicosis:	Yes	No
Pneumothorax (collapsed lung):	Yes	No
Lung cancer:	Yes	No
Broken ribs:	Yes	No
Any chest surgeries:	Yes	No
Any other lung problem that you have been told about:	Yes	No

Do you currently have any of the following symptoms of pulmonary or lung disease?

Shortness of breath:	Yes	No
Shortness of breath when walking fast on level ground or up a slight hill or incline:	Yes	No
Shortness of breath when walking with other people at an ordinary pace on level ground:	Yes	No
Have to stop for breath when walking at your own pace on level ground:	Yes	No
Shortness of breath when washing or dressing yourself:	Yes	No
Shortness of breath that interferes with your job:	Yes	No
Coughing that produces phlegm (thick sputum):	Yes	No
Coughing that wakes you early in the morning:	Yes	No
Coughing that occurs mostly when you are lying down:	Yes	No
Coughing up blood in the last month:	Yes	No
Wheezing:	Yes	No
Wheezing that interferes with your job:	Yes	No
Chest pain when you breath deeply:	Yes	No
Any other symptoms that you think may be related to lung problems:	Yes	No

Have you ever had any of the following cardiovascular or heart problems?

Heart attack:	Yes	No
Stroke:	Yes	No
Angina:	Yes	No
Heart failure:	Yes	No
Swelling in your legs or feet (not caused by walking):	Yes	No
Heart arrhythmia (heart beating irregularly):	Yes	No
High blood pressure:	Yes	No
Any other heart problem that you've been told about:	Yes	No

Have you ever had any of the following cardiovascular or heart symptoms?

Frequent pain or tightness in your chest:	Yes	No
Pain or tightness in your chest during physical activity:	Yes	No
Pain or tightness in your chest that interferes with your job:	Yes	No
In the past two years have you noticed your heart skipping or missing a beat:	Yes	No
Heartburn or indigestion that is not related to eating:	Yes	No
Any other symptoms that you think may be related to heart or circulation problems:	Yes	No

Do you currently take any medication for any of the following problems?

Breathing or lung problems:	Yes	No
Heart trouble:	Yes	No
Blood pressure:	Yes	No
Seizures (fits):	Yes	No

If you've used a respirator, have you ever had any of the following problems?
(If you've never used a respirator, check the following space and go to the next question:____)

Eye irritation:	Yes	No
Skin allergies or rashes:	Yes	No
Anxiety:	Yes	No

General weakness or fatigue:	Yes	No
Any other problem that interferes with your use of a respirator:	Yes	No
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Would you like to talk with the health care professional who will review this questionnaire about your answers to this questionnaire:	Yes	No
The following questions must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA).		
Have you ever lost vision in either eye (temporarily or permanently):	Yes	No
Do you currently have any of the following vision problems?:		
Wear contact lenses:	Yes	No
Wear glasses:	Yes	No
Color blind:	Yes	No
Any other eye or vision problem:	Yes	No
Have you ever had an injury to your ears, including a broken ear drum:	Yes	No
Do you currently have any of the following hearing problems?		
Difficulty hearing:	Yes	No
Wearing a hearing aid:	Yes	No
Any other hearing or ear problem:	Yes	No
Have you ever had a back injury:	Yes	No
Do you currently have any of the following musculoskeletal problems?		
Weakness in any of your arms, hands, and legs:	Yes	No
Back pain:	Yes	No
Difficulty moving your arms and legs:	Yes	No
Pain or stiffness when you lean forward or backward at the waist:	Yes	No
Difficulty moving your head up or down:	Yes	No
Difficulty moving your head side to side:	Yes	No
Difficulty bending at your knees:	Yes	No
Difficulty squatting to the ground:	Yes	No
Climbing a flight of stairs or a ladder carrying more than 25 lbs.:	Yes	No
Any other muscle or skeletal problem that interferes with using a respirator:		

The answers to the foregoing questions are true and current to the best of my knowledge. I understand that termination can result from any knowingly false answers.

Signature: _____ Date: _____

Part B (Hazardous Materials)

The following questions are to be completed by Hazardous Materials team members and new employees.

Today's date:

Your name (last, first, MI):

Your address (include city, state, zip):

Date of Birth:

Social Security Number:

Sex (circle one): Male Female

Your Height: ____ ft. ____ in.

Your weight:

Your job title: Department:

Personal Physician (include address and phone number):

A phone number where you can be reached by the health care professional who reviews this questionnaire (include the area code): _____ - _____ - _____

The best time to phone you at this number:

Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes No⁴⁷

Has ANYONE in YOUR FAMILY ever had any of these MEDICAL CONDITIONS?

High blood pressure, coronary artery disease, or any other disorder of the heart or blood vessels Yes No

Any serious disorder of the gastrointestinal tract (stomach, intestines, liver, or pancreas)? Yes No

Any serious disorder of the kidney or urinary tract: Yes No

Loss of nerve function, nerve damage, or any typ of brain or nervous system disorder, abnormality, or disease: Yes No

Allergies, including allergic rhinitis (“hay fever”), urticaria, hives, asthma, allergic contact dermatitis, or other type of allergic reaction or disorder: Yes No

Any serious form of arthritis or bone disorder: Yes No

Diabetes: Yes No

Sickle cell disease or trait, Thalassemia, G6PD deficiency, hemophilia, or any other abnormality, disorder, or disease of the blood or blood forming organs: Yes No

Any type of cancer: Yes No

If you answered “yes” to any of the previous questions, please indicate:

Relationship (father, mother, brother, etc.)	Medical Condition

Previous Immunizations: (Check “yes” or “no” after each item and provide date or dates if known.)

Diphtheria Yes No Date: _____

Influenza Yes No Type & Dates: _____

Polio	Yes	No	Type & Dates: _____	48
Rubella	Yes	No	Date: _____	
Smallpox	Yes	No	Date: _____	
Tetanus (lockjaw)	Yes	No	Date: _____	
Hepatitis B	Yes	No	Type & Dates: _____	
List any drug allergies:				
Date of last Tuberculin skin test: _____				
Results (circle one): Positive Negative Never Tested				
List all surgeries and year performed:				

Do you presently have an illness? If yes, please explain:				

Have you consulted or been treated by a physician in the past 12 months? If yes, please explain:				

Please list all medicines you are currently taking:				

Do you consider yourself to be a well person? Yes No				
How many days of work did you miss last year due to illness?				

Have you had any accidental exposure to hazardous materials during firefighting or hazardous materials responses? Yes No				

If yes, was documentation completed?

Yes No

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The answers to the foregoing questions are true and current to the best of my knowledge. I understand that termination can result from any knowingly false answers.

Signature: _____ Date: _____

EMERGENCY OPERATING PROCEDURE #1.4.1

EXPOSURE TO TOXIC OR HAZARDOUS MATERIALS

DATE: September 1998

SUBJECT: Exposure to Toxic or Hazardous Materials

PURPOSE: To establish a record of exposure to toxic or hazardous materials, whether known positive or suspected.

PROCEDURE:

- A. Any personnel in this department, career or volunteer, who knows or suspects that they have been exposed to a toxic or hazardous material shall report the same to their company officer or supervisor.
- B. If an obvious exposure has taken place, appropriate decontamination procedures will be used prior to further action by personnel on the scene. The intent is to minimize contaminating additional personnel and/or equipment. Personnel providing decon will use appropriate methods to insure that they are not contaminated. In turn, this may require members of the HazMat team to be consulted.
- C. Based on information and type of exposure, medical and/or baseline testing of personnel may be required. This will be handled on a case-by-case basis. Supervisor should notify department safety officer of exposure. If immediate medical attention is required after decontamination procedures are completed, personnel will be treated on scene and transported to appropriate medical facility for continued medical treatment. **Any exposure above Permissible Exposure Limits (PELs) where appropriate protective equipment was not worn will require follow-up monitoring with department physician.**
- D. Appropriate reports will be completed by employee and supervisor. These include 801 forms if medical attention is received other than first aid, exposure report form, and City safety incident report form. In cases where medical attention is not apparently required, follow-up testing may still be required. If material is suspected on clothing or equipment, appropriate decontamination and/or disposal will take place.
- E. Poison control should be contacted in regards to known or suspected exposures and consulted with regard to possible treatment and/or baseline and follow-up testing, in conjunction with the department physician.
- F. Copies of all records and medical follow-ups will be filed and maintained in employees' personnel files with the City Human Resources Department. Medical documents will be sealed with a brief description of contents and the date on the front.
- G. For infectious exposure, see EOP #1.3.4.

ALBANY FIRE DEPARTMENT
INCIDENT EXPOSURE RECORD

NAME:

DATE OF BIRTH: _____ SOCIAL SECURITY NUMBER:

INCIDENT NUMBER: _____ INCIDENT DATE:

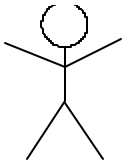
OFFICER IN CHARGE:

WITNESS:

LOCATION OF INCIDENT:

DESCRIPTION OF INCIDENT (attach additional sheets if necessary):

TYPE OF EXPOSURE: INHALATION



DIRECT CONTACT: (mark area)

INGESTION: _____

MATERIAL(S) EXPOSED TO

TYPE OF DECONTAMINATION:

LENGTH OF EXPOSURE TIME:

SYMPTOMS (if any):

TREATMENT AT SCENE:

TRANSPORTED TO MEDICAL FACILITY BY AMBULANCE: Yes No
(IF YES, ATTACH COPY OF RUN SHEET.)

TREATMENT BY MEDICAL FACILITY:

RELEASE A COPY OF MEDICAL FACILITY TREATMENT AND DIAGNOSIS. Yes No

PROTECTIVE CLOTHING USED DURING INCIDENT (List):

ADDITIONAL INFORMATION:

WRITER'S SIGNATURE _____ DATE

SHIFT OFFICER'S SIGNATURE _____ DATE

SAFETY OFFICER'S SIGNATURE _____ DATE

CHIEF'S SIGNATURE _____ DATE