

# ***Snohomish County Fire Chiefs Association***

## **DOCUMENT 60-05-09**

### **ON SCENE – POST ACTIVITY DECONTAMINATION GUIDELINE**

Adopted December 2009 County Chiefs Meeting

#### **Purpose:**

- A. To establish procedures for reducing firefighter's exposure to hazardous substances during training, suppression and overhaul activities, and to ensure that clothing, tools and equipment are decontaminated prior to returning to quarters.
- B. To establish procedures for the prevention of exposure to the inhalation or ingestion of hazardous substances when removing SCBA face pieces or when exchanging bottles.
- C. To establish procedures for "first-aid" protection and decontamination of firefighters suddenly aware of acute hazardous materials exposure acquired during suppression and overhaul activities.
- D. To provide uniform non-verbal signals to be used to indicate protective and decontamination concerns.
- E. To ensure all personnel are properly de-conned in a timely manner if there is any possibility of exposure to a likely harmful substance during training or at an emergency scene.

#### **References:**

WAC296-305-800 Appendix C Decontamination

NFPA Standard 472 Supplement 10, Guidelines for Decontamination of Fire Fighters and Their Equipment Following Hazardous Materials Incidents

#### **Discussion:**

When something burns it actually decomposes, resulting in the off-gassing of products that normally contain aldehydes, ketones, aromatic hydrocarbons, organic vapors and mists, and unburned radicals that reform in many different compounds. Particulates disrupted during firefighting, overhaul, and forcible entry can affix to personal protective clothing and SCBAs. Virtually all the aforementioned materials contribute to the statistically significant increase in Firefighters risk of cancer. In addition, particulates from a variety of materials may contain asbestos.

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The best protection Firefighters have from respiratory carcinogens is their SCBA. The best protection from dermal contact is turnout gear. It then follows that as much contamination as possible should be removed from both before removal.

#### Degree of Contamination

"Exposure to hazardous substance" is the key to decontamination needs. Products of combustion--including smoke--are considered hazardous. If you enter a smoky atmosphere and/or come into contact with burned materials or runoff from suppression agents, you must undergo decontamination. All training that may expose members to dust, gasses, smoke, viruses, molds or fibers shall require that you decontaminate your PPE.

#### **Responsibility:**

- A. It shall be the responsibility of the Incident Commander to ensure that any necessary decontamination of firefighters and equipment be completed before personnel and equipment are returned to quarters.
- B. It shall be the responsibility of the Incident Commander to ensure that the appropriate type and degree of decontamination is performed on firefighters and equipment involved with training, suppression and overhaul activities.
- C. It shall be the responsibility of the Company Officer to ensure that all company personnel take the appropriate measures to protect against respiratory exposure prior to removing SCBA face pieces or during bottle exchange following training, suppression and overhaul activities.
- D. It shall be the responsibility of the Company Officer, Driver, and Firefighters to ensure that all clothing and equipment used in training, suppression or overhaul activities is decontaminated prior to placing it on the apparatus back in service.
- E. It shall be the responsibility of individual firefighters to ensure that they receive at least minimum decontamination prior to removing facepieces or exchanging air bottles, or prior to returning to quarters after training, suppression or overhaul activity. Decontamination shall be set up in close proximity to the area that firefighters are exiting the IDLH in order to make decontamination practical.

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- F. It will be the responsibility of all firefighters to be able to non-verbally communicate, using uniform signals, their personal protection and decontamination needs.

#### **Procedures:**

##### Levels of Decontamination

Decontamination may range from the simple "one minute wash down" following an exposure to wood or paper smoke, to an unanticipated complex hazardous materials containment procedure required for exposure to poisonous residues.

- A. Most required decontamination dealing with protection of the respiratory tract can be accomplished with a decontamination line. Brushing and wiping will remove gross contaminants, but they will not remove, and may tend to make airborne the microscopic particles which target the respiratory system.
- B. The decontamination line will be charged and extended for use by returning firefighters. Whenever a bottle exchange area is established, there will also be a decontamination line and a decontamination person in full PPE available nearby. Bottles removed from SCBA for refilling must also be clean prior to placement back on the apparatus.
- C. The amount of water and duration of wash are judgmental factors to be considered by the person performing the decontamination. Where products of combustion and suppression residues or dust are visible there will be more inclination to be thorough, but it is the invisible materials, such as asbestos, glass fibers, and toxic residues which will most warrant your attention.
- D. Those performing the decontamination are cautioned against excessive hose pressure which might blow back contaminants onto themselves, or force water and residues past the openings and down inside the firefighter's coat.
- E. Crews will perform gross decontamination on each other while still on air. This will ensure that the appropriate level of PPE is in place during the decontamination process.

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- F. Exposure to hazardous materials requires formal decontamination procedures with containment per our County Hazardous Materials Guidelines.
- G. For PPE/clothing handling procedures following possible exposure to biological or blood borne pathogen materials see our departments Exposure Control Guidelines.

#### **Operational Decontamination:**

- A. Reasonable precautions shall be taken to maintain an uncontaminated atmosphere to the breathing zone and facepiece supply hose. During routine fire ground operations one of the following situations may occur:
  - 1. You want to remove your mask.
  - 2. You are not out of air, but wish to remove only your regulator.
  - 3. You need to exchange your bottle.
  - 4. You are going to the command post.
  - 5. You are going to rehab or staging
- B. Procedures
  - 1. All scenarios require that you:
    - a. Wash off your gloves.
    - b. Close pocket, radio pocket, and storm flaps.
    - c. Slowly, without tipping it, remove your helmet, and then wash off the top.
    - d. Clutch your collar to minimize water entry at neck opening.
    - e. With your hood in place, wash off your hood, face piece, and regulator.
    - f. Wash down the SCBA tank and connections.
    - g. If you remove your regulator, keep it clear of contaminated clothing.
  - 2. When removing your mask:
    - a. Complete step a through e above.
    - b. Pull the hood down around your neck, and well below your chin.
    - c. Bend forward with face down, and then pull the harness over your head, and pull the mask away from your face.
    - d. Do not allow the facepiece or regulator to contact clothing or equipment which has not been washed down.

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#### **Dry Decontamination Procedures:**

During cold inclement weather the process of soaking our members while performing wet decontamination procedures may create additional safety problems such as hypothermia and may create equipment failure issues. To minimize this risk dry decontamination may be performed utilizing the following procedures.

1. Brush off all large particles from the firefighters PPE, working from the head down, using a whisk broom or similar device.
2. Use damp towels to wipe the area around the firefighters mask and facepiece to suspend any particulate matter.
3. Attempt to remove all of the visible contaminants
4. A significantly exposed firefighter may be too dirty for dry decontamination procedures and should therefore be decontaminated utilizing the wet procedures and should then change into a spare set of PPE.

#### **On Scene/ Post Activity Decontamination:**

It is essential that we reduce the possibility of cross contamination to our work areas, apparatus and stations from airborne contaminants. These types of contaminants can result in chronic exposure to known health hazards such as asbestos and fiberglass dusts which will dry, fall from clothing, hose and equipment to become air borne respiratory hazards..

#### **Procedures:**

1. Equipment, hose and contaminated bunker gear, will be hosed down thoroughly prior to being placed back on the apparatus.
2. Complete rinse of PPE to remove all visible contaminants from PPE.  
This shall be done before:
  - a. Returning to station.
  - b. Responding to another call.
  - c. Going to rehab or staging.
  - d. Leaving the scene.

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#### In Station Final Decontamination and Cleaning:

- A. All equipment involved with fire suppression and/or overhaul activities will be washed with soap and water or the appropriate cleaning agent and dried or replaced before entering the station.
- B. All apparatus involved with fire suppression and/or overhaul activities will be washed with soap and water or the appropriate cleaning agent before entering the station. This includes cleaning the cab or compartment in which contaminated gear was transported back to the station in. Surfaces in the cabs of apparatus should be wiped clean with wet paper towels to remove as much transient particulate matter as possible.
- C. All hose involved with fire suppression and/or overhaul activities will be washed with soap and water or the appropriate cleaning agent before entering the station.
- D. Personnel will shower and change clothing.
- E. Bunks and other PPE will be washed and dried in the provided machines if they are still dirty after being decontaminated in the field.
- F. All personnel involved in cleaning and deconning gear and equipment shall wear appropriate protection to guard against inhalation, ingestion or injection of particulate matter. The lowest level of acceptable protection should be latex gloves; dust masks (N95 masks preferred) and eye protection.

#### Emergency Decontamination Non-Verbal Communications:

Previous concerns have been directed at preventing contaminants access to our respiratory tracts. Another aspect of decontamination is to prevent spread to others and/or the environment. If you become contaminated with a toxic or poisonous substance and you know you need more than a "One Minute Wash Down" you need to notify your Team, keep others away from you and the product, and indicate to someone outside that you need a more extensive Hazardous Materials decontamination.

- A. Five Considerations:
  - 1. Don't further contaminate yourself.
  - 2. Don't spread contamination to others.

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3. Prevent others from entering the Hot Zone.
  4. Don't travel any further than necessary to signal for help.
  5. Conserve your air.
- B. Standard Non-Verbal Signs:
1. STAY AWAY FROM (whatever you point towards):  
Arms extended as far forward as possible, fingers pointing up, and palms away from your body. Then point to you, contaminant, area of contamination, or other item of danger.
  2. DECONTAMINATE MASK AND BACKPACK ONLY:  
Hold up one hand in front of face, palm towards face, raising hand up and down to simulate washing facepiece.
  3. HOW MUCH AIR DO YOU HAVE LEFT?  
Point to your own gauge or pat your chest in the vicinity of the harness pressure gauge, then point to the air pack wearer's gauge.
  4. MY AIR PRESSURE GAUGE SHOWS:  
Point to your chest gauge and hold up sufficient fingers to match the pressure in hundred pound units. 800# psi = 8 fingers.
  5. NEED FULL HAZMAT DECON:  
Hold your arms out in front of you as if you are holding a scrub brush at a 45 degree angle, and move your arms as if scrubbing, then point to yourself or Team member in need of extensive decontamination.
  6. Emergency Hand Signals
    - a. Thumbs Up: OK - I'm all right - I understand.
    - b. Thumbs Down: NO - Negative - I don't understand.
    - c. Hands on top of head. I need assistance.
    - d. Hand gripping throat: Out of air, cannot breath.
    - e. Grip partner's wrist or place both hands around waist.  
Leave area immediately.

#### Exposure Decontamination:

If a firefighter indicates to you the need for containment or full HazMat

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decontamination take the following steps until thorough decontamination can be established:

- A. Notify Command that you have a decontamination emergency.
- B. Determine how much air the contaminated members have.
- C. Critical air shortage may require forgoing runoff containment.  
(If time allows, a tarp catch-all may be used.)
- C. Ensure your own protections are in place.
- D. Have member remove helmet.
- E. Have member remove gloves without touching outsides.
- F. Have member bend forward, hands up and out.
- G. Wash down hood, mask, regulator, shoulders, arms, and hands.
- H. Leave member on air as long as possible. Use your gloved hand and remove their regulator.
- I. Provide appropriate decontamination to match hazardous material problem.