Healthy In, Healthy out

BEST PRACTICES FOR REDUCING FIRE FIGHTER RISK OF EXPOSURES TO CARCINOGENS

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SHIP grant awarded to WSCFF and Kent Fire Department in 2014 to develop a Best Practices manual

Mission Statement

To encourage safe and healthy practices from first day to last day! Healthy In, Healthy Out!

Cancer may never be eliminated, but steps must be taken NOW to reduce the number of fire fighters being diagnosed and dying every year.

These Best Practices include: equipment, guidelines, and common sense practices to reduce exposures.

IMS format:

Finance: identify funding sources, budget for implementation
Command: how the health/safety officer plays key role
Planning: how design and maintenance can improve safety
Operations –
• Emergency: gross decontamination, rehabilitation, overhaul, transporting contaminated PPE
• Routine: wellness, annual physicals, nutrition, documenting exposures
Logistics: housekeeping, cleaning PPE, hose and equipment

Change…

Bottom up? Do you think cancer is a problem in the fire service? Personally?

Top down? Does the Leadership believe that cancer is a problem in the fire service?

Organization? Does your organizational culture allow for change?
**Finance**

Budget for both **big** and **small** items...
- Bags for transporting contaminated PPE
- Retrofit for warm water wash stations
- Disposable hand wipes
- Station shoes
- EMS gloves
- Annual physicals & wellness/fitness
- 2 sets of turnouts – or additional sets available
- Extractors/professional cleaning – ISP
- Diesel exhaust capture systems – available via AFG

**Command**

**Accident Prevention Plan**

Safety committee – both employees and employers
- identify root cause of event
- suggest action items to include:
Policy, procedure, training and/or operational changes to prevent future events
These are your working conditions….

**Planning**

**Fire Station Design**
- Direct source diesel exhaust capture systems
- Higher air pressure in living quarters than rest of the station
- Turnouts in enclosed, ventilated room without ultraviolet light exposure
- Install no carpet – use solid surfaces for flooring like polished concrete and tile
- Install turnout extractors – designed to clean fire fighting gear.

- **Red** zone – contaminated equipment, hose, SCBA, turnouts, EMS equipment from medical calls to be cleaned
- **Yellow** zone – typically apparatus bay – cleaned equipment can now be stored in app bay
- **Green** zone – living quarters. Kitchen, sleeping, offices.

“Keep it clean in the Green”

**Planning**

Diesel exhaust has been classified by IARC as carcinogenic to humans (Group 1).

Use diesel exhaust capture systems!
Apparatus Design

Separate the fire fighters from the contaminants:
- Put SCBA’s in separate compartment
- Vinyl seats and Rubber matted floors
- Exhaust piping directed away from pump panel
- Provide storage for contaminated turnouts/equipment

Operations: Emergency

- Conduct risk benefit analysis; limit personnel on-scene
- Units should stage uphill and upwind when possible
- Windows closed, air conditioner and heater off
- Turn off apparatus not integrally involved
- On-deck crews can be available, and not in smoke envelope
- SCBA shall be worn from initial attack throughout overhaul (structural, car fires and dumpster fires)

Gross Decon

50’ of booster/forestry/trash line or garden hose with a small adjustable nozzle.
- Put a cone 40 to 50 feet away from the engine in the direct path of the entry teams’ exit.
- Crews decon each other – don’t expose engineer to contaminants.

warm water wash station

Washing with soap and water removes contaminants…

Fire mechanics took a 3/8” line off the heat exchanger (engine cooler) and ran it out to the pump panel.

In 2 minutes, they had a 5 gallon bucket of 98 degree water.

For ~ $70 in parts, and a couple hours labor, every fire engine can be equipped with a warm water wash station.

Rehab

- Change out contaminated hoods for clean ones at scene.
- Wash hands, face and neck before eating or drinking.
- Ensure personnel are hydrated, and monitored for heat/cold stress.
- All personnel in hazard zone – (pump operators) will also need to cycle thru rehab.

Overhaul

- Conduct risk benefit analysis;
- Fire fighter safety is THE priority
- SCBA’s worn throughout overhaul/investigation
- IC should release most contaminated crews first.

First In - First out.
Transporting...
Transport your CONTAMINATED PPE back to fire station in bags. In the hosebed. Don’t contaminate your seat. And not in your personal vehicle.

Operations: Routine
Wellness
- Use sunscreen
- Stop now and don’t start tobacco use
- Physical Fitness
- Sleep
- Stress reduction

Nutrition
- Eat whole foods, not processed
- Eat your vegetables
- Eat 3 meals a day with 2-3 snacks
- Avoid super caffeinated beverages
- Drink water!!

Annual Physical
- Hands-on physical exam
- Blood analysis
- Urinalysis
- Vision tests
- Pulmonary
- Stress EKG
- Cancer screening
- Immunization/infectious disease
- Heavy metal screening

Document Exposures
- Personal tracking record of exposures
- Take to your doctor during annual physical
- Does NOT take the place of reporting to your department for injury/illness

LOGISTICS
- Decontamination – occurs @ scene, remove most of contaminants
- Cleaning – occurs @ fire station, uses cleaning products, abrasive actions & warm water rinses
- Disinfecting – can only happen after the object has been cleaned. Chemicals have a contact or dwell time required to “kill” microorganisms. Read the labels. Or use steam.
Protect yourself from dermal absorption as you clean your equipment and apparatus.

It’s up to you…

Knowledge is power....

Fire Fighters are problem solvers....

cancer is killing us....

Solve this one