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Senate testimony of Tony Stefani
Founder/President, San Francisco Firefighters Cancer Prevention Foundation

Hearing on Oversight of EPA Authorities and Actions to
Control Exposures to Toxic Chemicals

Senate Committee on Environment and Public Works

July 24, 2012

Good morning. My name is Tony Stefani I am a retired Captain from the SFFD with 28 years of service. I would like to start by giving a brief history of myself and the San Francisco Firefighters Cancer Prevention Foundation. I spent the last 13 years of my career as an officer at Rescue 1, Station 1 and proud to say one of the busiest firehouses in the United States. After 27 years on the job, I contracted Transitional Cell Carcinoma in my right renal pelvis--a rare form of cancer usually found in people who work in the "chemical industry" according to my doctor. During my treatment and recovery, two more firefighters from my station also contracted Transitional Cell Carcinoma--only the common form, bladder cancer. It also seemed like every month we were attending a funeral of another firefighter that had lost his battle with some form of cancer. In 2006, with the support of the Department's Administration and San Francisco Firefighters Local 798, I formed the San Francisco Firefighters Cancer Prevention Foundation dedicated to the early detection and prevention of cancer in both active and retired firefighters. Since its inception we have conducted five major cancer screenings. Through these screenings we have identified five retired firefighters and one active firefighter with various forms of cancer. At the time of the screenings these individuals were not aware they had cancer.

Our foundation has also been involved in three studies. The first study (published in 2007) was conducted by the Department of Urology at UCSF and identified bladder cancer rates in the SFFD greater than the population in general and of major concern for the entire firefighting profession.

Our second study is currently being conducted by N.I.O.S.H at the Centers for Disease Control and Prevention looking at causes of death in a cohort of 30,000 firefighters (5,538 participants from San Francisco Fire, 15,461 from Chicago Fire, 10,652 from Philadelphia Fire) dating back to 1950. The study should be published with results sometime in 2014.

The third study is one that I will address in my testimony.

Firefighters are exposed everyday in the same manner that the population in general is to the effects of flame retardants that escape from household products and settle in dust whether it be in the workplace or at home... But once a firefighter enters a burning building it is a completely different set of circumstances.

Firefighters are fully aware that we work in a “chemical cocktail” every time we enter a building on fire. Does that hinder the fire extinguishment? The definitive answer is, “absolutely not”. It is our job to extinguish the fire, preserve life and property and the job gets done. The firefighters’ biggest fear is what occurs once the fire is extinguished and the “overhaul” process begins. It is during this period of time where “off gassing” occurs. Products of combustion have been extinguished but the emission of toxic gasses continues. Most departments have Combustion Gases Indicators (CGI’s) that are used to measure various toxins in the atmosphere once a fire is extinguished. Once the CGI indicates a “clear” atmosphere, firefighters are allowed to remove their self-contained breathing apparatus (scba’s). The problem with this is that the CGI’s have the ability to pick up a few toxic gases but nowhere near the 100 plus toxic chemicals that can be encountered in the atmosphere by firefighters on the scene. We are now being told that even if all personal protective equipment remains in place brominated and chlorinated fire retardants have the ability to permeate the protective equipment worn by firefighters. Additionally, if this protective equipment is not properly decontaminated immediately when returning to quarters, firefighters risk continual exposures every time they don the protective equipment.

Flame retardant chemicals (Polybrominated diphenylethers (PBDE’S)) are applied onto or in many common household goods, furniture foam, plastic cabinets, computers, small appliances, consumer electronics, wire insulation, back coatings for draperies and upholstery to name a few. These gases are not picked up by CGI’s. These chlorinated and brominated flame retardants produce both toxic dioxins and furans when they burn which have been proven to cause cancer. The significantly elevated rates of cancer reported in firefighters (Kang et al 2008, LeMasters et al 2006, Hansen 1990) include four types that are potentially related

to exposure to dioxins and furans--Multiple Myeloma, Non-Hodgkin's Lymphoma, prostate and testicular cancer and now our major concern over the rising rates of breast cancer in female firefighters. A question that lingers in our profession is do these chemicals combine synergistically with other toxins in the atmosphere and exacerbate the effect of other toxic carcinogens? What we do know is that our rate of contracting various forms of cancer is increasing. We are also fully aware that these flame retardant chemicals bioaccumulate in our blood, fat tissue and in mother's milk.

Chairman Boxer and honorable members of this committee I hold in my hands the third study our department is involved in. This particular study should be published sometime in September of this year. I have been given permission to discuss various findings of the study. The title of the study is "Halogenated Flame Retardants, Dioxins, Furans, and other Persistent Organic Pollutants in the Serum of Firefighters from Northern California." The Northern California firefighters that this study refers to is a cohort of twelve firefighters from San Francisco. These firefighters willingly gave their blood after 2 separate working fires in San Francisco. The study examined the levels and patterns of halogenated compounds in the serum of the firefighters and compares contaminant concentrations in this cohort with those in the general population and other studies in the United States and worldwide.

The study of our firefighters showed levels of Polybrominated diphenylethers (PBDE'S) over 30% higher than the general population of California and over 60% higher than the general population of the United States. We had one firefighter with a PBDE level of 442ng/g of lipid weight which is 11 times greater than the average of the general population of the United States. The PBDE concentration in the San Francisco Firefighters were 20-30 times higher than levels found in the general population of Japan (Uemura et al 2010), Hong Kong (Qin et al 2011) and the United Kingdom (Thomas et al 2006).

Last Tuesday I received an email from Dr. Susan Shaw one of the lead researchers of this study. In this email she states, "Despite the small sample size, this paper reveals a wealth of information about the exposure of firefighters to a wide range of harmful chemicals during firefighting. It provides evidence that firefighters are exposed to cancer-causing dioxins and furans, and their congener profiles for brominated dioxins and furans (PBDD/F), polybrominated diphenyl ethers (PBDE's) and perfluorinated chemicals (PFC's) that are clearly indicative of exposure during firefighting (versus background exposure)."

Another issue that has to be addressed in regards to flame retardants is the rising cases of breast cancer we are seeing in our female firefighters in San Francisco. We have over 200 female firefighters in San Francisco--the most of any major metropolitan city in the United States. Many of these women are nearing the age of retirement. To our knowledge there have been no major studies in regards to the health of female firefighters. In our 40 to 49 year old group of female firefighters we have 117 women. In that group we have had 8 cases of breast cancer. The national average of breast cancer for the 40-49 year old female group is 1 in 69. It is a known fact that PBDE's bioaccumulate in mother's milk in the general population. It is also known that PBDE's are neurodevelopmental toxicants. The unknown is what level of PBDE's is in the mother's milk of a female firefighter and what effect that is having on their children. Our foundation is in the preliminary stages of a study addressing the health issues of our female firefighters.

On a daily basis the men and women of this profession willingly walk into this toxic soup of chemicals. We are deeply concerned that the federal government does not have the tools or the authority to regulate even the worst of them. Senator Lautenberg's Safe Chemicals Act would allow firefighters to better understand the negative health impacts of the chemicals we are exposed to. It would also give the EPA the tools necessary to regulate those toxic chemicals before they reach the homes and businesses that we are sworn to protect, regardless of the risk to ourselves. We thank Sen. Lautenberg for sponsoring this important legislation and our own Senator Boxer for her leadership in holding this hearing.

In closing I would like say it is probably too late for this generation of firefighters to be protected by a change in the current toxic flame retardant standard, but the generations of firefighters to come will be forever thankful that this very important step was taken. One of the researchers of our flame retardant study made a profound statement by saying, "You are the modern day canaries being sent into the cave". With our rising rates of cancer this is very close to the truth. We urge the Committee to pass the Safe Chemicals Act.

My best,

Tony Stefani
President, San Francisco Firefighters Cancer Prevention Foundation
Retired Captain Rescue 1 SFFD
www.sffcpf.org