

**REPORT OF THE
VIRGINIA FIRE SERVICES BOARD AND
DEPARTMENT OF FIRE PROGRAMS**

**A STUDY OF TOXIC EXPOSURE
CONDITIONS FOR VIRGINIA
FIREFIGHTERS**

**TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA**



SENATE DOCUMENT NO. 19

**COMMONWEALTH OF VIRGINIA
RICHMOND
1996**

A REPORT IN RESPONSE TO SENATE JOINT RESOLUTION NO. 120 OFFERED
JANUARY 25, 1994, REGARDING A STUDY OF FIREFIGHTERS EXPOSURE TO TOXIC
SUBSTANCES.

December 1995

BACKGROUND:

The 1994 General Assembly requested that the Virginia Fire Services Board, within the Department of Fire Programs, study of the level of exposure of firefighters to toxic materials while performing the required duties of the fire service (see Attachment A). The request for study recognized the fact that, nationally, firefighters are unavoidably exposed to a wide range of toxic chemicals and known carcinogens, which have been linked to a variety of cancers and possibly high job-related fatalities among firefighters. The need exists for capturing Virginia specific data on toxic exposures.

The focus of the study was to develop the prototype for a statewide database to collect and analyze information which documents firefighter exposure to toxic substances. In establishing this database, the Board was to examine, among other things, the availability and use of appropriate protective gear and other prevention initiatives and the extent of compliance by individual firefighters with existing firefighter safety protocol.

The Board was to report its progress on the database to the House Committee on Labor and Commerce and the Senate Committee on Commerce and Labor by November 1995 and submit its findings and recommendations to the Governor and the 1996 Session of the General Assembly.

The study was based upon toxic exposure incidents reported by six Virginia fire departments. The fire departments represented a reasonable cross-section of the Virginia fire service. A task force was formed and comprised one representative from each of the participants and representatives from the Board and the Department. The committee planned and evaluated each phase of the project.

The committee has reviewed and approved the results of the study for presentation to the Board. On December 15, 1995, the Board concurred with the results and approved the study.

SCOPE:

The Committee defined the overall scope of the study to be the design of a prototype database environment to collect and report toxic exposure incidents. The desired output was to include a reporting mechanism to periodically identify the number of toxic exposure incidents reported, the length of or duration of exposure, the differing types of incidents, the activities performed by the firefighter during the incident and the level of personal protective clothing available and worn by the firefighter. An appropriate form was designed to collect this data (see Attachment B).

DATA DEFINITIONS:

Initially, the committee identified the types of exposure, the types of activity normally performed, and the level of safety, as noted below:

Types of Exposure: Primary and Secondary

Primary exposure is normally associated with the extinguishing and suppressing activities at the scene of the fire or hazardous material incidents (where fire, smoke, gases, or other products of combustion are present). These mainly include live fires (structure, vehicle, trees/brush/grass, refuse, etc.), overpressure ruptures, rescue, hazardous conditions, service calls and training.

Secondary exposure occurs in or near the hazard zone of the scene and includes the support functions of fire control and hazardous material containment (driver/operators, incident commanders, and operations staff may be exposed while operating in the hazard zone from smoke and fire gases). Exposure may also occur while handling contaminated equipment such as SCBA, hose and personal protective equipment.

Type of Activity:

Any fire fighting task where fire, smoke, gases, or other products of combustion are present may result in an exposure. These tasks were defined as extinguishing fire, suppression support, rescue, riding vehicles, driving/operating vehicles, access/egress, station activity, miscellaneous incidental scene activity and other fire activities.

Safety levels:

Most fire operations require the use of full structural fire fighting protective clothing and positive pressure self-contained breathing apparatus. This includes training as well as emergency response.

DATA COLLECTIONS:

Data was collected during a two month interval from six fire departments. The six fire departments who volunteered to participate were the Chesapeake Fire Dept. , the Fairfax County Fire Dept., the Hampton Fire Dept., the James City County Fire Dept., the Petersburg Fire Dept. and the Virginia Beach Fire Dept.. The consensus of the group indicates that this data collection effort is vital and was received well by the firefighters responsible for completing the form. There is minimal duplication of data currently collected within the Virginia Fire Incident Reporting System (VFIRS) (one or more of the data elements exists in both systems). This will be overcome when the module is approved and fully incorporated into the VFIRS system.

RESULTS:

There were seven major items to report.

First, a total of **2,256 firefighters were exposed** to toxic conditions while responding to 494 exposure incidents, or an average of 4.6 firefighters per incident (see Attachment C).

Second, the **length of exposure** varied from under one hour (43% of population), one to three hours (23%), three to five hours (9%) to those over five hours (5%) (see Attachment D).

Third, of the 2,256 exposures, **the types of situations found** indicated 87% from Fires (or 1,970 exposures), 7% from hazardous conditions (or 162), 1% from rescue (or 31), 5% various at-the-scene (or 93). Fire incidents were comprised of 56% structure fires, 15% tree/brush/grass fires, 13% vehicle fires, 5% refuse fires, 9% training fires, and 2% other fire situations (see Attachment E).

Fourth, the **types of activities performed by the firefighter** were studied from two primary perspectives, those activities related to fire scenes and those related to hazardous containment scenes (see Attachment F).

At the **fire scene**, 56% of exposures occurred while extinguishing the fire, 30% during suppression support or vehicle operation and the remainder during other support functions.

At the **hazardous condition scene**, 44% of exposure occurred while directly controlling the incident, 29% while extinguishing or suppressing fire and the remainder while performing other support functions.

Fifth, of the 2,256 exposures, 86% of firefighters **wore personal protective equipment** (or 1,936) , 13.5% did not (or 308) and .5% did not report (or 12) (see Attachment G). This item was studied further to determine under what conditions it might be appropriate to not wear safety equipment. It was determined that of the 308 firefighters who reported not wearing safety equipment, at least 75% of the time it was appropriate when at the fire scene (inside the fire truck, etc.) and 36% of the time was appropriate when at the hazardous material scene (see Attachment H).

Sixth, the **level of personal protective equipment** was studied. Of the 1,936 exposures reporting this item, 55% were fully protected (clothing and breathing apparatus), 31% were without breathing apparatus, 1% wore chemical suits, 7% wore brushfire clothing, and 6% did not report (see Attachment I).

Seventh, of the 308 exposures where **safety equipment was not worn**, 85% reported that it was available, 10% reported that it was not available, and 5% did not report (see Attachment J).

In studying the activity reported by each locality individually, no significant material trends were identified. Fairfax and Hampton experienced above average volume of hazardous condition

incidents, Petersburg experienced above average volume of structure fires, and Chesapeake and Hampton and Virginia Beach experienced above average volume of tree, brush and grass fires (see Attachments K - Q).

SUMMARY:

The results of the study indicate substantial support for the well documented concerns of firefighter exposure to toxic substances. The study reinforces the claim that the exposures are a direct result of the job related duties and that firefighters are taking the necessary steps to minimize the exposures by wearing appropriate personal protective clothing and equipment. There is growing concern that deteriorating health and death among firefighters has a direct relationship to the unavoidable on-the-job exposures to smoke and gases (many which are defined carcinogens).

The prototype database application is complete. Current plans include incorporating this data collection effort into existing efforts which capture other fire data in the Virginia Fire Incident Reporting system. In addition to state and local requirements, it is anticipated that the need will exist for individual historical profiles for firefighters who are pursuing compensable claims for health related issues. Staffing levels will need to be adjusted to adequately respond. The volume of activity was greater than anticipated. One additional FTE would be required to capture, analyze and manage the data at the anticipated level of a statewide data collection effort.

RECOMMENDATIONS:

The Virginia Fire Services Board and the Department of Fire Programs recommends that the agency begin migrating the toxic exposure module into the current VFIRS system. It is recommended that the application be available for full use on July 1, 1996. It is further recommended that the General Assembly appropriate one additional full time classified employee to manage this effort.

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1994 SESSION

LD5120749

SENATE JOINT RESOLUTION NO. 120

Offered January 25, 1994

Requesting the Virginia Fire Services Board to develop and maintain a statewide database for the collection and analysis of information documenting firefighter exposure to toxic substances.

Patrons—Waddell; Delegates: Ball and Mims

Referred to the Committee on Rules

WHEREAS, exposure to a wide range of toxic chemicals and known carcinogens is commonplace in firefighting, and contact with these hazardous agents has been linked to a variety of cancers and may be responsible for high job-related fatalities among firefighters; and

WHEREAS, recognizing documented evidence of increased mortality and cancer rates among firefighters, the General Assembly established a Joint Subcommittee pursuant to HJR 47 (1992) to study of these work-related health risks and authorized the Joint Subcommittee to continue in 1993 pursuant to HJR 428; and

WHEREAS, having explored firefighters' job-related exposure to toxic substances and the link between such exposure and increased health risks, the Joint Subcommittee's study has indicated a need for additional Virginia-specific data documenting cancer and firefighter exposure to carcinogens; and

WHEREAS, pursuant to § 9-155 of the Code of Virginia, the Virginia Fire Services Board, within the Department of Fire Programs, is responsible for promoting the coordination of the efforts of fire service organizations at the state and local levels and is statutorily directed to "develop and implement a statewide plan for the collection, analysis and reporting of data relating to fires in the Commonwealth, utilizing appropriate resources of other state agencies when deemed proper by the Board"; and

WHEREAS, consistent with this duty, the Board is also charged to evaluate state programs affecting fire prevention and protection and to make recommendations to the Governor and General Assembly regarding these issues; and

WHEREAS, documentation of firefighter exposure to toxic substances might facilitate the prevention and amelioration of this exposure through increased adherence to safety practices and the wearing of protective gear; now, therefore, be it

RESOLVED by the Senate, the House of Delegates concurring, That the Virginia Fire Services Board is hereby requested to develop and maintain a statewide database for the collection and analysis of information documenting firefighter exposure to toxic substances. In establishing this database, the Board shall examine, among other things, the availability and use of appropriate protective gear and other prevention initiatives and the extent of compliance by individual firefighters with existing firefighter safety protocol.

The Department of Fire Programs shall provide staff support for the development of the database. All agencies of the Commonwealth shall provide assistance to the Department and the Board, upon request.

The Board shall report its progress on the database to the House Committee on Labor and Commerce and the Senate Committee on Commerce and Labor by November 1995 and shall submit its findings and recommendations to the Governor and the 1996 Session of the General Assembly as provided in the procedures of the Division of Legislative Automated Systems for processing legislative documents.



Commonwealth of Virginia, Department of Fire Programs Fire Service Exposure Report

EA	FDID	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Fire Department
EB	Incident number	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Date MM/DD/YY <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Type of Situation Found <input type="checkbox"/>

EC	Record Number	<input type="text"/> <input type="text"/> <input type="text"/>	1. <input type="checkbox"/> Delete 2. <input type="checkbox"/> Change	SSN	<input type="text"/> <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
ED	Name (Last, First, MI)					
EF	Firefighter Activity <input checked="" type="checkbox"/>	<input type="text"/> <input type="text"/>	Length of Exposure	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> min.	Was personal protective equipment (PPE) worn?	<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No
EG	<input checked="" type="checkbox"/> If yes, (PPE) what level ?		If (PPE) was not worn, was equipment available ?			<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No

MEMBER 1

EC	Record Number	<input type="text"/> <input type="text"/> <input type="text"/>	1. <input type="checkbox"/> Delete 2. <input type="checkbox"/> Change	SSN	<input type="text"/> <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
ED	Name (Last, First, MI)					
EF	Firefighter Activity <input checked="" type="checkbox"/>	<input type="text"/> <input type="text"/>	Length of Exposure	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> min.	Was personal protective equipment (PPE) worn?	<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No
EG	<input checked="" type="checkbox"/> If yes, (PPE) what level ?		If (PPE) was not worn, was equipment available ?			<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No

MEMBER 2

EC	Record Number	<input type="text"/> <input type="text"/> <input type="text"/>	1. <input type="checkbox"/> Delete 2. <input type="checkbox"/> Change	SSN	<input type="text"/> <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
ED	Name (Last, First, MI)					
EF	Firefighter Activity <input checked="" type="checkbox"/>	<input type="text"/> <input type="text"/>	Length of Exposure	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> min.	Was personal protective equipment (PPE) worn?	<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No
EG	<input checked="" type="checkbox"/> If yes, (PPE) what level ?		If (PPE) was not worn, was equipment available ?			<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No

MEMBER 3

EC	Record Number	<input type="text"/> <input type="text"/> <input type="text"/>	1. <input type="checkbox"/> Delete 2. <input type="checkbox"/> Change	SSN	<input type="text"/> <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
ED	Name (Last, First, MI)					
EF	Firefighter Activity <input checked="" type="checkbox"/>	<input type="text"/> <input type="text"/>	Length of Exposure	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> min.	Was personal protective equipment (PPE) worn?	<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No
EG	<input checked="" type="checkbox"/> If yes, (PPE) what level ?		If (PPE) was not worn, was equipment available ?			<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No

MEMBER 4

Send WHITE COPY to the Department of Fire Programs along with the incident report

Codes Are On The Back EU

Officer in Charge (Name and position)	Date
Member Making Report (If Different From Above)	Date



Commonwealth of Virginia, Department of Fire Programs
Fire Service Exposure Report

Type of Situation Found

- 11. Structure fire
- 12. Outside of structure fire
- 13. Vehicle fire
- 14. Trees, brush, grass fire
- 15. Refuse fire
- 16. Explosion, no after fire
- 17. Outside spill, leak with ensuring fire
- 21. Steam rupture
- 22. Air, gas rupture
- 31. Inhalator call
- 33. Emergency medical call
- 34. Search
- 35. Extrication
- 41. Spill, leak - no fire
- 43. Excessive heat
- 44. Power line down
- 45. Arcing, short electric equipment
- 46. Aircraft standby
- 47. Chemical emergency
- 52. Water evacuation
- 53. Smoke removal
- 55. Assist police
- 56. Unauthorized burning
- 63. Controlled burning
- 72. Bomb scare
- 73. System malfunction

Additional codes are found on page I9 of the coding manual.

Firefighter Activity

- 10. Riding Vehicle
- 20. Driving/Operating Vehicle
- 30. Extinguishing Fire/Neutralizing Incident
- 40. Suppression Support
- 50. Access/Egress
- 60. Rescue
- 70. Miscellaneous Incident Scene Activity
- 80. Station Activity
- 90. Other Activity

For detail coding of firefighter activities, use the codes starting on page F23.

Personal Protective Equipment Level

<u>Level</u>	<u>Equipment</u>
1.	Helmet, SCBA, gloves, coat, pants, boots
2.	Personal Protective Equipment without SCBA
3.	Chemical Suit
4.	Brush Fire complement (goggles, boots, gloves, station uniform)
5.	None

Protect yourself: always wear full protective clothing and use your self contained breathing apparatus.

ALWAYS WORK AS A PART OF A TEAM.

Number of Exposures

FIPS	Fire Department	Number of Incidents	Number of FF Exposure	Exp. Per Incident	% of Exposure
550	Chesapeake Fire Dept.	73	283	3.9	13%
059	Fairfax Co. Fire Dept.	167	724	4.3	32%
650	Hampton Fire Dept.	80	363	4.5	16%
095	James City Co. Fire Dept.	15	82	5.5	4%
730	Petersburg Fire Dept.	22	97	4.4	4%
810	Virginia Beach Fire Dept.	137	707	5.2	31%
		494	2,256	4.6	100%

How Long were the Firefighters Exposed?

Length of Exposure	Number of Firefighters	Percentage of Firefighters
less than 30 minutes	969	43%
between 30 min. but less than 1 hrs..	445	20%
between 1 hr. but less than 3 hrs.	516	23%
between 3 hr. but less than 5 hrs.	210	9%
5 hrs. or more	116	5%
	2,256	100%

Type of Incidents in which the Firefighters were Exposed To

Code	Type of Situation Found	Frequency	Percentage
1x	Fires	1,970	87.3%
	Fire Type	% of Tot. Fires	
11	Structure	1,104	56.0%
14	Trees, Brush, Grass	300	15.2%
13	Vehicle	252	12.8%
99	Trng (non emergency)	180	9.1%
15	Refuse	101	5.1%
12,16,17	Other	33	1.7%
2x	Overpressure Rupture	21	0.9%
3x	Rescue	31	1.4%
4x	Hazardous Condition	162	7.2%
5x	Service	47	2.1%
0,6x	Other	25	1.1%
	Total	2,256	100.0%

The Activities of Firefighters that were Exposed

Code	Fire Fighter Activity	Fire	Overpressure		Haz.			Total
			Rupture	Rescue	Condition	Service	Other	
1x	Riding Vehicle	30	0	4	10	4	0	48
2x	Driving/Operating Vehicle	296	1	1	12	9	3	322
3x	Extinguishing Fire	1,102	3	3	33	16	3	1,160
4x	Suppression Support	301	10	0	15	9	2	337
5x	Access/Egress	2	0	0	0	0	3	5
6x	Rescue	30	0	9	9	0	0	48
7x	Misc. Incid. Scene Activity	130	7	13	72	9	3	234
8x	Station Activity	20	0	0	6	0	0	26
9x, 0x	Other	59	0	1	5	0	11	76
	Total	1,970	21	31	162	47	25	2,256
	Percentage	87%	1%	1%	7%	2%	1%	100%
Code	Fire Fighter Activity	Fire%	Overpressure		Haz.			Total
			Rupture%	Rescue%	Condition%	Service%	Other%	
1x	Riding Vehicle	2%	0%	13%	6%	9%	0%	2%
2x	Driving/Operating Vehicle	15%	5%	3%	7%	19%	12%	14%
3x	Extinguishing Fire	56%	14%	10%	20%	34%	12%	51%
4x	Suppression Support	15%	48%	0%	9%	19%	8%	15%
5x	Access/Egress	0%	0%	0%	0%	0%	12%	0%
6x	Rescue	2%	0%	29%	6%	0%	0%	2%
7x	Misc. Incid. Scene Activity	7%	33%	42%	44%	19%	12%	10%
8x	Station Activity	1%	0%	0%	4%	0%	0%	1%
9x, 0x	Other	3%	0%	3%	3%	0%	44%	3%
		100%	100%	100%	100%	100%	100%	100%

Was Personal Protective Equipment Worn?

Type of Situation Found			Not		Total	Group%	
			Worn	Worn			Reported
Fires			1,589	193	8	1,790	89%
		Not Worn					
	Worn	Not Worn					
Structure	996	101					
Vehicle	223	28					
Trees, Brush, Grass	261	39					
Refuse	85	16					
Other	24	9					
Overpressure Rupture			13	7	1	21	62%
Rescue			14	17	0	31	45%
Hazardous Condition			110	52	0	162	68%
Service			35	11	1	47	74%
Training			153	25	2	180	85%
Other			22	3	0	25	88%
Total			1,936	308	12	2,256	86%

Activities of FireFighters that were Exposed and NOT Wearing P.P. Equipment

Code	Fire Fighter Activity	Overpressure			Haz.		Other	Total
		Fire	Rupture	Rescue	Condition	Service		
1x	Riding Vehicle	3	0	4	4	1	0	12
2x	Driving/Operating Vehicle	110	0	1	7	5	0	123
3x	Extinguishing Fire	15	0	0	4	0	0	19
4x	Suppression Support	26	2	0	2	5	0	35
5x	Access/Egress	0	0	0	0	0	0	0
6x	Rescue	2	0	3	5	0	0	10
7x	Misc. Incid. Scene Activity	43	5	9	22	0	0	79
8x	Station Activity	15	0	0	6	0	0	21
9x, 0x	Other	4	0	0	2	0	3	9
Total		218	7	17	52	11	3	308
Percentage		71%	2%	6%	17%	4%	1%	100%
Code	Fire Fighter Activity	Overpressure			Haz.		Other%	Total
		Fire%	Rupture%	Rescue%	Condition%	Service%		
1x	Riding Vehicle	1%	0%	24%	8%	9%	0%	4%
2x	Driving/Operating Vehicle	50%	0%	6%	13%	45%	0%	40%
3x	Extinguishing Fire	7%	0%	0%	8%	0%	0%	6%
4x	Suppression Support	12%	29%	0%	4%	45%	0%	11%
5x	Access/Egress	0%	0%	0%	0%	0%	0%	0%
6x	Rescue	1%	0%	18%	10%	0%	0%	3%
7x	Misc. Incid. Scene Activity	20%	71%	53%	42%	0%	0%	26%
8x	Station Activity	7%	0%	0%	12%	0%	0%	7%
9x, 0x	Other	2%	0%	0%	4%	0%	100%	3%
		100%	100%	100%	100%	100%	100%	100%

What was the Personal Protective Equip. (PPE) Level when PPE was worn?

Level	Person Protective Equipment Level	Number of Firefighters	Percentage of Firefighters
1	Helmet, SCBA, gloves, coat, pants, boots	1,063	55%
2	Personal Protective Equip. without SCBA	606	31%
3	Chemical Suit	10	1%
4	Brush Fire Complement	139	7%
5	None	4	0%
0	Not Reported	114	6%
		1,936	100%

If PPE was not worn, was equipment available?

Response	Number of Firefighters	Percentage of Firefighters
Yes	261	85%
No	31	10%
Not Reported	16	5%
	308	100%

Type of Incidents in which the Firefighters were Exposed To by Locality

Code	Type of Situation Found	550 Chesapk	059 Fairfax	650 Hampton	095 James Cty	730 Petrbrg	810 VA Bch	Total
1x	Fires	269	556	317	81	90	657	1,970
11	Structure	145	291	167	45	68	388	1,104
14	Trees, Brush, Grass	73	12	82	4	1	128	300
13	Vehicle	34	58	50	28	19	63	252
99	Trng (non emergency)	0	180	0	0	0	0	180
15	Refuse	14	14	15	4	0	54	101
12,16,17	Other	3	1	3	0	2	24	33
2x	Overpressure Rupture	0	21	0	0	0	0	21
3x	Rescue	0	22	0	0	0	9	31
4x	Hazardous Condition	8	112	25	0	0	17	162
5x	Service	3	5	19	0	0	20	47
0,6x	Other	3	8	2	1	7	4	25
Total		283	724	363	82	97	707	2,256
	Fires	95.1%	76.8%	87.3%	98.8%	92.8%	92.9%	87.3%
	Overpressure Rupture	0.0%	2.9%	0.0%	0.0%	0.0%	0.0%	0.9%
	Rescue	0.0%	3.0%	0.0%	0.0%	0.0%	1.3%	1.4%
	Hazardous Condition	2.8%	15.5%	6.9%	0.0%	0.0%	2.4%	7.2%
	Service	1.1%	0.7%	5.2%	0.0%	0.0%	2.8%	2.1%
	Other	1.1%	1.1%	0.6%	1.2%	7.2%	0.6%	1.1%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Structure	53.9%	52.3%	52.7%	55.6%	75.6%	59.1%	56.0%
	Trees, Brush, Grass	27.1%	2.2%	25.9%	4.9%	1.1%	19.5%	15.2%
	Vehicle	12.6%	10.4%	15.8%	34.6%	21.1%	9.6%	12.8%
	Trng (non emergency)	0.0%	32.4%	0.0%	0.0%	0.0%	0.0%	9.1%
	Refuse	5.2%	2.5%	4.7%	4.9%	0.0%	8.2%	5.1%
	Other	1.1%	0.2%	0.9%	0.0%	2.2%	3.7%	1.7%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Was Personal Protective Equipment Worn when Exposed?

Chesapeake Fire Department - 550			Not	Not		
Type of Situation Found		Worn	Worn	Reported	Total	Worn%
Fires		254	14	1	269	94%
	Worn		Not Worn			
Structure	136		8			
Vehicle	34		0			
Trees, Brush, Grass	69		4			
Refuse	12		2			
Fire Trng. (non-emerg.)	0		0			
Other, Fire	3		0			
Overpressure Rupture		0	0	0	0	0%
Rescue		0	0	0	0	0%
Hazardous Condition		8	0	0	8	100%
Service		3	0	0	3	100%
Other, Non-Fire		3	0	0	3	100%
Total		268	14	1	283	95%

Was Personal Protective Equipment Worn when Exposed?

Fairfax Co. Fire Dept. - 059			Not	Not		
Type of Situation Found		Worn	Worn	Reported	Total	Worn%
Fires		485	66	5	556	87%
Structure	261					
Vehicle	47					
Trees, Brush, Grass	11					
Refuse	12					
Fire Trng. (non-emerg.)	153					
Other, Fire	1					
Overpressure Rupture		13	7	1	21	0%
Rescue		5	17	0	22	0%
Hazardous Condition		78	34	0	112	70%
Service		3	2	0	5	60%
Other, Non-Fire		8	0	0	8	100%
Total		592	126	6	724	82%

Was Personal Protective Equipment Worn when Exposed?

Hampton Fire Department - 650			Worn	Not Worn	Not Reported	Total	Worn%
Type of Situation Found	Worn	Not Worn					
Fires			276	40	1	317	87%
Structure	151	15					
Vehicle	43	7					
Trees, Brush, Grass	68	14					
Refuse	12	3					
Fire Trng. (non-emerg.)	0	0					
Other, Fire	2	1					
Overpressure Rupture			0	0	0	0	0%
Rescue			0	0	0	0	0%
Hazardous Condition			14	11	0	25	56%
Service			14	5	0	19	74%
Other, Non-Fire			2	0	0	2	100%
Total			306	56	1	363	84%

Was Personal Protective Equipment Worn when Exposed?

James City Co. Fire Dept. - 095				Not	Not		
Type of Situation Found			Worn	Worn	Reported	Total	Worn%
Fires			62	19	0	81	77%
	Worn	Not Worn					
Structure	29	16					
Vehicle	25	3					
Trees, Brush, Grass	4	0					
Refuse	4	0					
Fire Trng. (non-emerg.)	0	0					
Other, Fire	0	0					
Overpressure Rupture			0	0	0	0	0%
Rescue			0	0	0	0	0%
Hazardous Condition			0	0	0	0	0%
Service			0	0	0	0	0%
Other, Non-Fire			1	0	0	1	100%
Total			63	19	0	82	77%

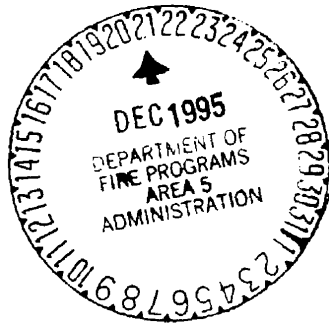
Was Personal Protective Equipment Worn when Exposed?

Petersburg Fire Dept. - 730				Not	Not		
Type of Situation Found			Worn	Worn	Reported	Total	Worn%
Fires			81	8	1	90	90%
		Not					
	Worn	Worn					
Structure	63	4					
Vehicle	17	2					
Trees, Brush, Grass	1	0					
Refuse	0	0					
Fire Trng. (non-emerg.)	0	0					
Other, Fire	0	2					
Overpressure Rupture			0	0	0	0	0%
Rescue			0	0	0	0	0%
Hazardous Condition			0	0	0	0	0%
Service			0	0	0	0	0%
Other, Non-Fire			4	3	0	7	57%
Total			85	11	1	97	88%

Was Personal Protective Equipment Worn when Exposed?

Virginia Beach Fire Dept. - 810				Not	Not		
Type of Situation Found			Worn	Worn	Reported	Total	Worn%
Fires			584	71	2	657	89%
		Not					
	Worn	Worn					
Structure	356	30					
Vehicle	57	6					
Trees, Brush, Grass	108	20					
Refuse	45	9					
Fire Trng. (non-emerg.)	0	0					
Other, Fire	18	6					
Overpressure Rupture			0	0	0	0	0%
Rescue			9	0	0	9	100%
Hazardous Condition			10	7	0	17	59%
Service			15	4	1	20	75%
Other, Non-Fire			4	0	0	4	100%
Total			622	82	3	707	88%

Chesapeake Fire Department
304 Albemarle Drive
Chesapeake, Virginia 23320
(804) 547-6297
FAX (804) 436-8313



December 15, 1995

Virginia Department of Fire Programs
Bobby L. Stanley, Jr.
2807 Parham Road, Suite 200
Richmond, Virginia 23294

Dear Mr. Stanley:

I would like to take this opportunity to thank you for allowing the Chesapeake Fire Department to participate in the field test of the Fire Service Exposure Data Collection Program. I would also like to express my support for the inclusion of this type of data into the VFIR System.

The increased efficiency of data collection and the value of the data base will greatly outweigh the costs to set-up this program.

You may look forward to our continued support.

Sincerely,

A handwritten signature in cursive script that reads "Michael L. Bolac".

Michael L. Bolac
Fire Chief

A:951215.01



City of Petersburg

FIRE DEPARTMENT
400 East Washington St.
Petersburg, Virginia 23803
(804) 733-3951
FAX (804) 733-3954

Captain T. C. Hairston
Deputy Coordinator of
Emergency Services

December 15, 1995

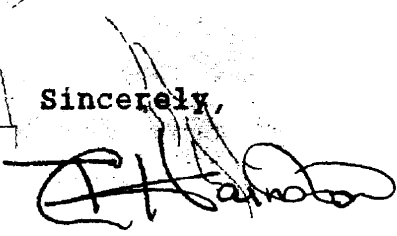
Bobby Stanley, Director
Department of Fire Programs
2807 Parham Road
Richmond, Virginia 23294

Dear Bobby:

The Petersburg Fire Department participated in the field test of the new fire service exposure form. The Petersburg Fire Department supports the exposure documentation and would like to see it continued. We also would like the exposure form incorporated into the VFIRS form.

If I and/or the Petersburg Fire Department can be of any assistance with the continuation of this project, please don't hesitate to call.

Sincerely,


T. C. Hairston
Captain/Deputy Coordinator

TCH:ag

