




LONDON FIRE BRIGADE

Report Title:	
Fire Contaminants Policy	
Report to:	Date:
Operational Department Delivery Board Commissioner's Board London Fire Commissioner	27 May 2022 08 June 2022 08 June 2022
Report author:	Name: Dom Ellis Job Title: Assistant Commissioner, Operational Policy and Assurance
Report classification:	
For Decision	
The subject matter for this report deals with the following LFB strategic priorities:	
Delivering excellence	
This policy improves safety for all staff, their families and communities affected by fire.	
Report number – LFC-0716	
For Publication	
PART I - NON-CONFIDENTIAL FACTS AND ADVICE TO THE DECISION-MAKER	

I agree the recommended decision below.	
	
Andy Roe London Fire Commissioner	Date This decision was signed remotely on 27 June 2022

Executive Summary

This report details the need for a new policy regarding fire contaminants (the Policy) and the key changes that it introduces on the incident ground and in the workplace.

These changes are designed to reduce the exposure risk to staff from fire contaminants and the subsequent potential illness. It also reduces the risk to communities and the families of staff by preventing cross-contamination into fire stations, workplaces and homes.

Recommended decision:

The London Fire Commissioner approves the introduction of the Fire Contaminants Policy, attached in Appendix 1.

1. Introduction and background

- 1.1. Fire contamination refers to the products of combustion from fires, often described as soot and carbonaceous material or deposits.
- 1.2. Exposure to fire contamination is through three primary ways: inhalation; ingestion and absorption. This exposure may be primary - directly at incidents or training venues, or secondary through cross contamination - exposure at places remote from the scene e.g. fire stations, workshops and at the home etc.
- 1.3. Exposure may occur without the use of appropriate levels of respiratory protection or personal protective equipment (PPE).
- 1.4. Exposure may cause direct damage to the upper and lower respiratory system (e.g. sinusitis, asthma, emphysema, interstitial pulmonary inflammation and fibrosis, throat cancer, lung cancer and mesothelioma) and systemic diseases, such as cancers within organs and heart disease.
- 1.5. The Policy highlights the potential risks of fire contamination and advises personnel on how to limit exposure and reduce the associated health risks. It applies to all personnel who have the potential to come into contact with fire contaminants, whether directly or indirectly. This includes staff groups in addition to operational staff such as staff handling contaminated equipment within the Operational Support Group (OSG).
- 1.6. Through cross-contamination, fire contamination can also potentially affect third party providers (Bristol uniforms, Babcock), members of the public entering fire stations and the families and personal contacts of those exposed.

2. Objectives and drivers for change

- 2.1. The objectives are to reduce risk and improve safety. There is much research on the risk from fire contaminants, with two key LFC drivers.
- 2.2. In November 2020 an FBU commissioned report entitled 'Minimising firefighters' exposure to toxic effluents – Interim Best Practice' was published by the University of Central Lancashire (UCLAN). The report, led by Professor Anna Stec shows there is evidence of high levels of the toxic products of combustion on firefighting PPE, equipment and workspaces. There is evidence that many of the toxic products of combustion are carcinogenic, although there is currently no direct linkage between increased exposure to these carcinogens and cancer incidence in firefighters. There may be other factors (other than polycyclic aromatic hydrocarbons – PAH's)

that are also important to the slight increases we see in the prevalence of some cancers in firefighters.

2.3. The Senior Coroner's "Report to Prevent Future Deaths" (16 September 2018) made in connection with their investigation into the deaths following the Grenfell Tower fire (which was directed at NHS England) raised the following concerns:

- That those subject to smoke and dust inhalation are at risk of developing health conditions in particular respiratory illness after particulate and poison inhalation
- That there may have been exposure to asbestos during and after the fire that could possibly cause late onset health issues such as mesothelioma
- That first responders need to be given access to guidance and/or information that would help them to understand what could be the health consequences of being exposed to the hazardous environment of the site of the fire.

3. Previous action

3.1. The policy builds on previous work to provide control measures and raise staff awareness in this matter. These include (not limited to):

- Ops News 37 (Aug 2019) – guidance on reducing exposure to contaminants
- Half mask respirators – introduced as personal issue protection in June 2020
- Salvation army – sinks and soap installed to enable hand washing prior to eating and drinking
- "Reducing risk from contaminants posters" – introduced on station to advise firefighters
- Nitrile disposable gloves, contaminant wipes and water soluble bags introduced.

4. Key policy changes being introduced

4.1. The key changes to procedure and working practice with the introduction of this policy will be:

- Guidance regarding the health hazards of exposure and importance of respiratory protection
- Safe disrobe procedure to reduce exposure when removing contaminated PPE, with associated cleaning zone and equipment
- Designated red/amber/green zones on the incident ground to prevent cross contamination and ensuring clean appliance cabs
- Designated red/amber/green zones on fire stations to prevent cross contamination and ensuring clean welfare and office facilities.

5. Operational impact

5.1. The policy will influence incident command decision making. Where staff are heavily contaminated following a Breathing Apparatus wear, they may be required to immediately disrobe their PPE after reporting to Entry Control. This action prevents contamination absorbing into the skin, particularly around cuffs and collars and from fire hoods.

5.2. The requirement for immediate disrobe will be subject to risk assessment by the incident or sector commander.

- 5.3. Effected staff will no longer have structural firefighting PPE and will require a relief crew as soon as practicable.
- 5.4. The potential consequence of this action will cause earlier requests for relief crews and additional resource requirements at incidents. Operational Policy are in liaison with Control to ensure this is anticipated.

6. Further actions required

- 6.1. The policy will be introduced by a communication package and mandatory training, followed by introduction into the DaMOP schedule. Training is already provided within the two day BA firefighting annual course.
- 6.2. In the longer term work is being undertaken to improve the provision of spare PPE on the incident ground which will improve welfare and safety arrangements and reduce the impact on operations by enabling staff to change PPE and continue working where appropriate. This requires contractual changes to the provision of PPE, its availability on the incident ground and facilities to change.

7. Cost

- 7.1. The costs associated with the policy relate to the establishment of the required equipment to follow the procedures and the ongoing cost of replenishing that equipment.
- 7.2. Equipment will be required to establish the fire contaminants box on each pumping appliance and the station BA cleaning room. Ongoing costs are based on the number and size of primary fires and are approximate. A detailed breakdown is provided in Appendix 2. These costs will be covered within Fire Stations equipment budget.
- Fire contaminants box - £5,149 (one off cost)
 - Station BA cleaning room - £11,095 (one off cost)
 - Ongoing replenishment cost - £ 14,759 p.a.
- 7.3. The cost of establishing the fire contaminants box and BA cleaning room will be a one off cost for 2022/23. The ongoing replenishment cost is the approximate annual cost based on anticipated usage.

8. Conclusion

- 8.1. The policy will reduce the risk of exposure to staff from fire contaminants and the associated health risks. This will be through raising awareness and procedures that limit exposure and reduce cross contamination away from the incident ground.
- 8.2. By ensuring fire contamination remains on the incident ground or is limited to designated 'dirty' areas, this significantly reduces the potential for exposure. Preventing cross contamination reduces the risk to the community, staff families and other providers or staff entering fire stations or coming into contact with PPE or equipment.

9. Equality comments

- 9.1. The LFC and the Deputy Mayor for Fire and Resilience are required to have due regard to the Public Sector Equality Duty (section 149 of the Equality Act 2010) when taking decisions. This in broad terms involves understanding the potential impact of policy and decisions on different people, taking this into account and then evidencing how decisions were reached.

- 9.2. It is important to note that consideration of the Public Sector Equality Duty is not a one-off task. The duty must be fulfilled before taking a decision, at the time of taking a decision, and after the decision has been taken.
- 9.3. The protected characteristics are: age, disability, gender reassignment, pregnancy and maternity, marriage and civil partnership (but only in respect of the requirements to have due regard to the need to eliminate discrimination), race (ethnic or national origins, colour or nationality), religion or belief (including lack of belief), sex, and sexual orientation.
- 9.4. The Public Sector Equality Duty requires decision-takers in the exercise of all their functions, to have due regard to the need to:
- eliminate discrimination, harassment and victimisation and other prohibited conduct
 - advance equality of opportunity between people who share a relevant protected characteristic and persons who do not share it
 - foster good relations between people who share a relevant protected characteristic and persons who do not share it.
- 9.5. Having due regard to the need to advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it involves having due regard, in particular, to the need to:
- remove or minimise disadvantages suffered by persons who share a relevant protected characteristic where those disadvantages are connected to that characteristic
 - take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of persons who do not share it
 - encourage persons who share a relevant protected characteristic to participate in public life or in any other activity in which participation by such persons is disproportionately low.
- 9.6. The steps involved in meeting the needs of disabled persons that are different from the needs of persons who are not disabled include, in particular, steps to take account of disabled persons' disabilities.
- 9.7. Having due regard to the need to foster good relations between persons who share a relevant protected characteristic and persons who do not share it involves having due regard, in particular, to the need to:
- tackle prejudice
 - promote understanding.
- 9.8. The EIA involved extensive work to consider the impact on different staff groups and protected characteristics and a great deal of research was completed particularly regarding the impact of cancers, as different groups, such as male and female and minority ethnicities can have higher incidences of cancer diagnosis. Consultation was thorough and included the Equality Support Groups, Inclusion team and People Services. The Inclusion team have approved the EIA. Ongoing consultation arrangements are in place with the Equality Support Groups to consider any issues that may arise following the introduction of the policy.

- 9.9. The overall equality impact of the policy and training is 'medium'. Against the individual protected characteristics, the EIA determined five positive impacts, three neutral impacts and one adverse impact. The adverse impact related to the potential adverse impact on firefighters wearing hijabs and not having sufficient spares to change following each Breathing Apparatus wear. This impact has been mitigated by Central Ops providing additional spares.
- 9.10. The Equalities Impact Assessment is attached as Appendix 3. It was first drafted in September 2020 and has been kept under review throughout the development of the policy, risk assessment and associated training.

10. Workforce comments

- 10.1. The FBU support the policy and it was agreed at the Brigade Joint Committee for Health & Safety at work (BJCHSW) on 17 March 2022. They are a member of the contaminates working group which influenced the policy and would like the policy to be published as soon as practicable. The FBU has agreed the risk assessment with the caveat that they are able to collectively consult on its development once the policy has been live for a period of time to evaluate its effectiveness.
- 10.2. The policy supports both the FBU DECON campaign and the FBU commissioned report entitled 'Minimising firefighters' exposure to toxic effluents – Interim Best Practice', published by the University of Central Lancashire (UCLAN).

11. Sustainability comments

- 11.1. The activities and equipment required by this policy have a high impact on sustainability and the environment, but the impact has been mitigated as far as practicable. This is indicated within the Sustainable Development Impact Assessment (SDIA) and agreed by the Head of Sustainable Development.
- 11.2. There will be an increase in contaminated water waste on the incident ground. The LFC has an exemption from Thames Water regarding the discharge of potentially hazardous water waste.
- 11.3. There will be a slight increase in water usage through the disrobe process and cleaning of equipment at scene and at station. Additionally, personnel may shower more regularly post incident.
- 11.4. There will be an increase in the use of plastic bags, wipes, nitrile gloves, plastic aprons and P3 filters, which require disposal.

12. Procurement comment

- 12.1. The majority of items of equipment or consumables that are required for this policy are either repurposed or already in use and procured through existing agreements. There are two additional items that are being added as additional requirements. In the future these will be built into on-going agreements and the spend involved for these does not in any case reach the threshold for procurement activity; therefore, there are no concerns from a procurement perspective. Comments provided by Procurement section.

13. Financial comments

13.1. This report recommends that the Fire Contaminants Policy is approved. The report states that this policy will require one off revenue expenditure of £16,244 in 2022/23, and an ongoing revenue replenishment cost of £14,759 from 2022/23. These costs will be contained within existing Fire Stations budget. Comments provided by finance advisor.

14. Legal comments

14.1. This report seeks approval of a new policy relating to Fire Containments, attached at Appendix 1.

14.2. The London Fire Commissioner has the functions of the fire and rescue authority for Greater London under the Fire and Rescue Services Act 2004 ('the Act'), with the core duties being set out in sections 6-9 such as firefighting, dealing with road accidents, fire safety and other emergencies. Section 5A of the same Act enables the Commissioner to do anything he considers appropriate for the purposes incidental or indirectly incidental for the purposes of carrying out any of the fire and rescue services functions.

14.3. Under s327A of the Greater London Authority Act 1999 the London Fire Commissioner must secure that the London Fire and Rescue Service is efficient and effective.

14.4. The introduction of the Policy is within the Commissioners powers set out above.

14.5. The LFC's Scheme of Governance gives delegated authority to the Head of Service to approve changes to policies and procedures of which they are the designated custodian. Where the policy has significant corporate impact, it must be discussed at the appropriate corporate board prior to a decision being made. The Commissioners Board may receive the report where there are substantial or new policies to be implemented, due to the corporate impact.

15. Health and Safety

15.1. The policy and risk assessment have been reviewed by the Health and Safety team and the procedure and control measures identified are proportionate to the known risks of exposure to the toxic products of combustion. It is important to recognise that whilst there is a correlation between smoke exposure and firefighter cancer this linkage needs further research and that there are other known factors, such as poor diet, excessive alcohol consumption, smoking tobacco products and poor sleep that have been shown to significantly increase the risks of cancer development for individuals. Comments provided by Health & Safety section.

Appendices:

Appendix	Title	Open or confidential
1.	Fire Contaminants Policy	Open
2.	Costings	Open
3.	Equalities Impact Assessment (EIA)	Open

Part 2 Confidentiality: Only the facts or advice considered to be exempt from disclosure under the FOI Act should be in the separate Part 2 form, together with the legal rationale for non-publication.

Is there a part 2 form – NO

ORIGINATING OFFICER DECLARATION:

Drafting officer

AC Spencer Sutcliff has drafted this report and confirms the following:

Assistant Director/Head of Service

AC Dom Ellis has reviewed the documentation and is satisfied for it to be referred to Board for consideration.

Advice

The Finance and Legal teams have commented on this proposal:

Hameera Darr Legal Advisor, on behalf of General Counsel (Head of Law and Monitoring Officer)

Omolayo Sokoya Financial Advisor, on behalf of the Chief Finance Officer

Drafting officer to confirm the following



Fire Contamination Policy

New policy number: _____
 Old instruction number: _____
 Issue date: _____
 Reviewed as current: _____
 Owner: **Assistant Commissioner Operational Policy**
 Responsible work team: **Hazardous Materials and Environmental Protection Team**

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1 Introduction

- 1.1 This Policy highlights the potential risks of fire contaminated Personal Protective Equipment (PPE) and equipment and how to minimise fire contamination.
- 1.2 This policy applies to all personnel who have the potential to come into contact with fire contaminants, whether directly or indirectly, and advises personnel on how to limit exposure and reduce the associated health risks.
- 1.3 Throughout this policy the term 'contamination' or 'contaminants' refers to the products of combustion from fires - often described as soot, carbonaceous materials and other terms for the material deposited onto: Personal Protective Equipment (PPE), clothing, equipment, skin and hair whilst at operational incidents. It should not be confused with hazardous materials incidents which result in contamination from, for example chemical, biological or asbestos contamination for which there are specific policies. [PN 584 Firefighter decontamination](#), [PN 519 Incidents involving asbestos](#) detailed in section 3.1 of this policy. This

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may be through primary exposure directly at

- 1.4 Fire contaminated PPE, equipment and appliances expose personnel to the health risks incidents, or through secondary exposure at places remote from the scene e.g. fire stations, workshops and third-party workplaces.
- 1.5 Maintaining clean structural firefighting PPE, firefighting equipment and appliances must be the goal of all operational personnel. If the procedures in this policy are not followed, potential contamination can be passed to all areas of the workplace and ultimately, the homes of personnel which may lead to health-related issues in the longer term. See Service Standard 6 Operational Readiness

2 Contamination routes

- 2.1 Personnel should always be aware of the potential risk of contamination from products of combustion and it should be continually monitored and reviewed. This may be at incidents, training venues or during the maintenance/cleaning of equipment.
- 2.2 There are three primary ways in which exposure to fire contaminants may take place:
 - Inhalation
 - Ingestion / Oral consumption (via mouth)Protected by Respiratory Protective Equipment (RPE)
 - Skin absorption Protected by PPE.

3 Respiratory protection

- 3.1 The most likely, exposure route, and the route which presents the greatest health risks on the incident ground is inhalation of carbonaceous products These exposures are prevented by wearing RPE. Proper use of RPE prevents direct damage to the upper and lower respiratory system (e.g. sinusitis, asthma, emphysema, interstitial pulmonary inflammation and fibrosis, throat cancer, lung cancer and mesothelioma) and systemic diseases, such as cancers within organs and heart disease.

- 3.2 The default level of RPE is Breathing Apparatus (BA) which prevents inhalation of fire contaminants. BA must be worn when personnel are committed to atmospheres with the potential to cause respiratory discomfort or injury. BA must be worn for damping down and cutting away operations where unburnt gases and particulates may be being produced at significant levels.
- 3.3 Respirators can be used following a risk assessment by the Incident Commander see [PN 759 Respiratory protective equipment - protection against particulates -operational procedure](#)
- 3.4 Half mask respirators with P3 filters used in conjunction with a Gas Detection Monitor (GDM) must be used at grass fires as a minimum (where BA can be impractical) and considered for use externally where products of combustion are present. It is important to note what is burning. For example, if a grass fire incorporates synthetic materials, dumped household refuse or other building materials, the default level of protection should be BA. BA protects against the products of combustion from these materials as half masks will only provide protection from particulates and not fire gases.
- 3.5 Half mask respirators with P3 filters must be worn by the Fire Investigation Team (FIT) when attending 'cold' scenes of fire and used by fire-fighters when entering and working in a building after the fire has been extinguished and there is no risk from fire gases.
- 3.6 Half mask respirators with P3 filters must be worn when cleaning fire contaminated equipment or bagging up and/or handling heavily contaminated PPE. There is no requirement to use half mask respirators with P3 filters when sending PPE to launder which has only become dirty over time and is not heavily soiled or contaminated.

4 PPE

- 4.1 PPE must be inspected and clean at the start of each shift and all personnel have a responsibility to ensure their PPE is kept clean and regularly inspected during their shift.
- 4.2 Personnel who are likely to wear Breathing Apparatus (BA) should carry their personal issue spare fire hood which can be stowed under the rear cab seats of the appliance.
- 4.3 The officer in charge (OIC) should ensure sufficient levels of replacement PPE are always maintained on station, including correct sizes for all personnel.
- 4.4 The PPE of personnel who have worn BA will have different levels of fire contamination depending upon the conditions that they have worked in. For example, BA teams that have undertaken compartment firefighting will typically have greater levels of contamination compared to a BA team that has only undertaken ventilation. The level of action required to minimise exposure should be proportionate to the level of contamination.
- 4.5 There are generally two levels of contamination we should be focusing on. The first being contamination which requires immediate removal of structural firefighting PPE and the second being a lighter level of contamination which will allow structural firefighting PPE to continue to be worn at the incident but which must be removed and bagged prior to entering the cab and leaving the incident.

Immediate removal of Structural Firefighting PPE

- 4.6 Structural Firefighting PPE which becomes heavily contaminated during firefighting in BA should be assessed by the officer in charge/sector commander in liaison with the individual and or BA team leader, –and if required – removed using the disrobe process.
- 4.7 In assessing the level of contamination individuals should focus on the areas of the PPE which are immediately in contact with the skin – these areas we will refer to as contact points and are the cuffs and collar of the tunic.
- 4.8 The image below provides an indication of when PPE should be considered for removal are using the disrobe process and bagged immediately following a BA wear. If the contact points
- 4.9 Firefighters without PPE should not undertake duties on the incident ground that require structural firefighting PPE and a relief crew implemented as soon as practicable and were



- 4.10 The image below provides an indication when PPE can continue to be worn following a BA heavily contaminated, then the PPE must be removed. necessary.

Removal of Structural Firefighting PPE prior to leaving the incident

wear. To reduce the risk of exposure, areas of the skin around the contact points should be wiped (see section 12). Prior to leaving the incident ground, the PPE disrobe procedure should be completed to prevent contaminants entering the appliance cab.



- 4.11 Fire gloves should also be handled carefully to avoid touching contaminated areas with unprotected hands. If you are reusing your fire gloves, they should be wiped down with a wipe to reduce the level of fire contaminants. Again prior to leaving the incident these should be removed as a part of the PPE disrobe procedure.
- 4.12 Contaminated PPE that is bagged should preferably be stored in the rear lockers of the appliance for the return journey to the station in order to minimise contaminants to the cab area. Contaminated PPE that is not bagged must not enter the cab. Consider the ordering of the OSU to collect significant amounts of PPE or equipment that cannot be transported on the appliance.

5 Zonal protection system

5.1

Three zones must be established and implemented at all incidents where fire contamination can occur to help identify and separate dirty and clean areas to prevent contamination spreading and primary contamination becoming secondary contamination.

5.2 The three zones to be established are:

Red (Hot) zone - This is the area in and around the fire and where most contamination may occur, and includes:

- Any area inside a structure or building which is involved in a fire
- Any area around the incident containing the products of combustion (smoke/soot)
- Any area which is beyond the Entry Control Point (ECP).

Note: this may include appliances used for pumping operations where RPE is required for pump operators.

Personnel inside this zone must wear RPE. This would be a minimum of half mask and P3 filter, subject to the Incident Commander (IC) risk assessment.

The boundary of this zone is where a GDM should be utilised to monitor conditions and the boundary adjusted where appropriate. The size of this zone may decrease as the fire is extinguished.

Amber (Warm) zone – This is the area:

- Located between the Red and Green zones -The amber zone is an area that is involved in operations but is in safe air, free from products of combustion (including the Entry Control Point (ECP), Decontamination areas, emergency crews, working appliances, etc)
- Area for disrobing, decontamination, cleaning and bagging of BA and PPE and equipment cleaning. building in a safe area where the disrobe procedure can take place.

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- In a high rise building this area should extend from the bridgehead to an area outside the

A dedicated fire contaminants decontamination area should be identified within this zone. At larger incidents each sector with an ECP must have a decontamination area.

Green (Cold) zone – This is an area away from the scene of operations:

- An area outside Red and Amber zones
- Location for Command and Control, Command Units (CUs), Portable Hygiene Units (PHU's), members of public, food consumption areas, etc.
- RVP
- Other emergency vehicles
- Access and egress route for appliances to the incident and/or the pathway to enter the Red and Amber zones.

5.3 Establishing fire contamination zonal areas will also support the implementation of decontamination if an incident transitions into a hazardous materials incident, for example where incidents involve *Asbestos, Hazmat or CBRN* risk. If the incident is subsequently determined to be a hazmat incident, the zones already established may be suitable for adoption following risk assessment.

5.4 Examples of small and large incident fire contamination zones are shown in appendix 3

6 Contamination and hygiene

6.1 The following must be considered by the Incident Commander (IC) at incidents that involve fire contaminants:

- Weather conditions and appliance positioning e.g. upwind, uphill, and upstream wherever possible.

- Appliance doors, windows and lockers kept closed when not in use to minimise contamination within the appliance.
 - Appropriate RPE and PPE to be worn.
 - Welfare breaks must be taken in a clean area (Green zone) away from the scene of operations. Hands should be washed with soap and water or using wipes and sanitising gel before eating and drinking.
(The only exception is immediately after the BA wear where urgent hydration is required. The lid or opening should not be touched with contaminated gloves, a clean fire fighter can assist with this process. Following hydration, the half mask respirator and P3 filter should be re-worn before progressing to the disrobe procedure in section 8)
- 6.2 The Salvation Army canteen vans are supplied with water, liquid soap and sinks. Food and drink must not be removed from the welfare area, this includes collection of food for personnel to consume at other locations around the incident. Consideration should be given to the provision of dedicated welfare officers and/or crew to ensure suitable arrangements are in place.
- 6.3 At larger incidents the Portable Hygiene Unit (PHU) can provide sinks, soap and water for this purpose. There are also soap and wipes on each appliance for this purpose.

7 Disrobe and cleaning area

- 7.1 The IC is responsible for designating the disrobe and cleaning area within the Amber zone away from operations where firefighters can undertake the safe undress procedure. The disrobe area should be established as soon as resources allow. It should be established where possible prior to any contaminated personnel exiting the red zone.
- 7.2 The IC must consider allocating a designated crew to manage the disrobe and cleaning area. This would include incidents such as;
- Four pumps and above
 - Where Stage 2 BA Entry Control is required
- 7.3 Personnel nominated to carry out the fire decontamination role should ensure the following equipment is available in the disrobe area;
- Personal issue half masks with P3 filters for BA wearers
 - Nitrile gloves
 - Salvage sheet
 - Bucket
 - Water for cleaning equipment
 - Fire contaminants box which contains the following items
 - Wipes for skin, PPE and equipment
 - Low foaming detergent
 - Brushes and cloths
 - Bags for used wipe disposal
 - Decontamination bags for BA sets and PPE
- 7.4 Personnel assisting with disrobe procedure must wear half mask and P3 filter and Nitrile gloves.

8 Disrobe procedure

- 8.1 Personnel who experience any welfare issues such as injury, heat stress or distressed wearer following or during a BA wear, priority should be given to the medical needs over the fire contaminants risk. If there is an opportunity to reduce the exposure, then the disrobe procedure should be performed.
- 8.2 The level of contamination and disrobe requirement should be assessed and determined by the incident commander or sector commander.
- 8.3 Contamination that is deposited on PPE can be transferred onto the skin while doffing PPE, particularly from firefighting gloves to the hands and from the fire hood to the neck and face.
- 8.4 Fire hood-doffing procedures historically involve the firefighter pulling the hood down around the neck while removing the BA face mask. By doing this, hazardous contamination on the exterior of the hood can transfer to the neck skin, which is some of the thinnest and most absorbent skin on the human body. The correct method to be employed to avoid contamination is - whilst still wearing BA, pull the fire hood over the head (from back to front) being careful not to dislodge the BA face mask and allow the fire hood to remain

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looped around the supply hose of the BA . See Appendix 2.

Using personal decontamination wipes on the neck after removing the BA face mask will remove contaminants from the skin and reduce the possibility of exposure through skin absorption.

Remember to remove ALL items from pockets of tunics and leggings prior to bagging and sending for laundry.

- 8.5 Disrobing on the incident ground should be carried out on the instruction of the IC/Sector Commander (SC) or Hazardous Materials and Environmental Protection Officer (HMEPO)
- 8.6 When bagging PPE and BA sets there is no requirement to double bag. The **red soluble bag must not be used for fire contaminated PPE**. Double bagging 'hazmat contaminated PPE' must be followed as per [PN 584 Firefighter decontamination](#).

9 Dealing with contaminated equipment

- 9.1 Firefighters undertaking cleaning and bagging up of contaminated equipment must ensure they wear nitrile gloves and half mask respirator with P3 filter.
- 9.2 Hard surface equipment that is contaminated with fire debris must be washed off at scene with soap and water prior to being placed back onto the appliance. For example, hose can be cleaned with soap and water and bass broom. Electronic equipment can be wiped down with a wipe or damp cloth. Where this is not practicable, for example contaminated hose is required to be transported away from the incident ground prior to cleaning, consider all areas that have been in contact with contaminated hose or equipment should be cleaned thoroughly and appropriate PPE. The OSU should be considered for this transportation.
- 9.3 If further cleaning is required, then it should be bagged before being placed on the appliance and cleaned at station. If this is unsuccessful then specialist cleaning may be required.

9.4 Heavily soiled BA sets can be cleaned with a bucket and brush with soapy water using low foaming detergent, before being bagged in the clear PVC contamination bags and sealed at the top. **Clean Cab** - They should, wherever possible, be transported back to the station secured in the rear lockers. Transportation in the crew cab of the appliance should be avoided unless all BA sets have been used. In these situations, the BA sets should still be bagged, and care taken not to tear the bag whilst stowing in their brackets. Consider the use of OSU's for large quantities of equipment or hose.

9.5 **NOTE: Prior to carrying out the process the BA set must be pressurised before washing, this will prevent water ingress.**

9.6 Only bagged and sealed contaminated PPE or equipment should be transported within the appliance cab, however, this should be a last resort when no stowage in the rear lockers is available.

9.7 Whilst transporting contaminated PPE post incident, the Officer in Charge (OIC) of the appliance must ensure that their appliance is placed status 7 (second line availability for mobilising).

9.8 The OIC of the appliance must send a message confirming to control that their appliance is off

the run due to contaminated PPE i.e. " **DRAFT** E402 now *status 7 due to contaminated PPE.*"

9.9 In **exceptional circumstances** when returning to station (for example call by stranger), bagged PPE can be reused following a Risk Assessment (RA) by the OIC. The appropriate priority message should be sent to control ordering a full attendance and at the earliest opportunity the contaminated fire fighters should be relieved as soon as practicable.

9.10 Appliances should only be placed available - status 1 - when the full post incident hygiene process has been completed as per this policy. Appliances must be returned to status 1 as soon as possible to maintain operational cover.

10 Station PPE procedure

10.1 Half mask with P3 filter and nitrile gloves must be worn for the following tasks:

- When bagging heavily contaminated PPE (tunic, leggings, fire hoods and gloves). Bags to be placed in well ventilated area within an Amber zone on station where the PPE contractor collection area is located.
- Undertaking the BA set after use 'B' test (bagged BA sets should be opened in a wellventilated area)
- When cleaning and drying contaminated fire helmet, radio, torch and boots. This must be completed where possible at the incident before returning to station using wipes carried on the appliance and available at the decontamination area.

11 Real fire training PPE procedure

11.1 Real fire training events should be treated the same as an operational incident in respect of dealing with fire contaminated PPE. Delegates should follow training providers disrobe procedures.

- 11.2 Bag all contaminated PPE (tunic, leggings, fire hoods and gloves) and leave in the designated training venue location for collection by the PPE provider.
- 11.3 Fire helmet, radio, torch and boots are to be wiped down and dried. This will limit the potential for cross contamination.
- 11.4 Personal kit bags internal linings are made with a Polyurethane material which should be cleaned with soap and water after use as required.

12 Hygiene procedure

- 12.1 Skin cleaning is a rapid and effective means for removing potential contamination that may transfer from PPE onto the skin. Skin cleansing wipes can be used at the incident during post wear recovery and hydration. Studies have shown that using wipes can greatly reduce the level of contamination on the neck, face and hands.
- 12.2 The ability to significantly reduce contamination quickly will reduce the contaminant exposure that could otherwise be absorbed into the body. Research has highlighted the need to shower as quickly as possible after an incident to fully remove any remaining contaminants and reduce further absorption.
- 12.3 Showering will remove potential cancer-causing particulates and further contamination. Once showered a change into fresh work wear/uniform should be also undertaken.

Remember 'shower within an hour' when returning to the station from an incident or

DRAFT following a real fire training exercise. Appliances should be status

7 until showering has completed and must be placed available – status 1 - as soon as possible.

13 Senior officers

- 13.1 Senior Officers should follow the guidance as per section 8 and 10 of this policy.
- 13.2 Bag all contaminated PPE (tunic, leggings, fire hoods and gloves) prior to placing in kit bag and transporting in vehicles. Senior officers should carry PVC bags in their car.
- 13.3 The fire helmet, radio, torch and boots are to be cleaned with a wet wipe and dried at the incident. This will limit the potential for cross contamination.
- 13.4 Personal kit bags are to be cleaned with soap and water when required. Senior Officers are to ensure they have a personal kit bag (or container) located in their car.

14 Fire Investigation

- 14.1 Fire Investigating Team (FIT) must ensure that they wear the appropriate RPE and they have assistance to carry out hygiene procedures upon completion of their on-site investigation. FIT also carry GDMs to monitor their working environment.

15 Owner/occupier notification

- 15.1 Ensure owner/occupiers are given advice on the potential risks surrounding fire contaminants and how to reduce exposure.

16 Station Contamination Arrangements

- 16.1 The following actions should be taken to limit the spread of contaminants on station, including.
- Before use, PPE must be clean and in good repair.
 - PPE should be stored in a designated area which is ventilated and away from station accommodation
 - Ensure stations and appliances are fully stocked with items for the fire contaminants box and BA maintenance room as listed in section 19 and 20.
 - An assessment of station facilities to ensure, wherever possible, potential contamination pathways are reduced.
- 16.2 Separate clean and dirty areas. These areas should be indicated by the 'Think Contaminants' sign. See Appendix 1.
- 16.3 Clean areas of the station should be known as Green zones, where personnel entering these areas should be able to eat, work and rest in a clean environment.
- 16.4 No PPE should be worn in the Green zones to eliminate the risk of cross contamination. The 'Think Contaminants' signs are intended to remind personnel of the need to keep the working environment and equipment clean for the benefit of all. **This includes not allowing Green zones of stations to be used for station BA search/rescue drills.** 16.5 Designated

Green zones should include (but not limited to):

- Offices
- Kitchens
- Dormitories
- Lecture/day rooms
- Community rooms
- Gyms

17 PPE/RPE cleaning

- 17.1 Clean BA as per policy [PN 476 RPE – Drager PSS 7000 breathing apparatus – technical information](#) . It is important to make sure the BA face mask is clean and not contaminated before placing it back in the face mask bag otherwise contaminants may build up within the bag. Where the bag does become contaminated it should be washed out with face mask washing solution and thoroughly dried.
- 17.2 Clean half masks with P3 filter as per policy [PN 956 RPE – Respirator – technical information](#).
- 17.3 A fire helmet can become contaminated inside and out, exposing the wearer to harmful substances and specific attention should be paid to the inner harness and padding. The fire helmet can be wiped inside first and then outside with a wipe post incident. It may also be washed with safety wash, but it must have sufficient time to naturally dry before being reused.

The fire helmet must never be used to store any equipment (such as gloves or fire hood) either on the appliance or when stored whilst off duty.

- 17.4 During an incident or training event, gloves are highly likely to become contaminated. Touching the outside of soiled gloves with bare hands should be avoided to reduce the risk of contaminants being absorbed through the skin. It is mainly the palm and fingers of gloves that become contaminated, it is therefore preferable to handle firefighting gloves using the cuffs.
- 17.5 Firefighting boots have a sole with a deep tread. Consequently, dirt and debris from the incident ground can accumulate in the tread and is easily transported back to the station unnoticed. Boots should be cleaned on the incident ground. Contaminated boots should be washed in a soap solution. If not possible to wash at scene they can be transported, as with the fire helmet, in the pump bay on Series 3 appliances or a locker on the Series 2 appliance.
- 17.6 Contamination may be present on hand tools, thermal image cameras and other equipment. All equipment should be cleaned thoroughly after use, before placing back on the appliance and disposable gloves and RPE should be worn where appropriate.
- 17.7 Appliances should leave the station with clean equipment and personnel and return to the station as clean as practicably possible. It is the responsibility of the OIC and of the personnel riding the appliance to follow this guidance.
- 17.8 If equipment is removed from the appliance at an incident, it needs to be cleaned before being placed back on the appliance where required.

18 Avoiding secondary contamination at home

18.1 Do not take contaminated PPE home.

18.2 If workwear is contaminated with blood, bodily fluids etc., it should be bagged up in water

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soluble bags and sent away for a contaminated wash. As per [PN 533 Uniform and personal protective equipment Appendix 3](#). If workwear has fire contamination, it may be hand washed at station with low foam detergent, placed in a drying room and, once dry, taken home for laundry.

19 Fire Contaminants Box Contents

19.1 This will be created by repurposing the half mask respirator filter box on all appliances, the stowage location is unchanged. The following equipment should be held on the appliances and as station reserve should also be kept; see table below

Item	PL/P	POMS ID number
Aide Memoire	1	N/A
	Issue date: xx June 2019	

PVC bags for bagging 10 per appliance

S1804: up BA sets, PPE and rubbish 800x1000mm

Brush to clean BA sets 1 per appliance ID V1120. and fire boots

Low foaming 1 per appliance V3008 detergent to wash contaminants off equipment

Ultragrime wipes - 3 packs per appliance V1949

Wipes for personal

(1 for contaminants)

decontamination	box and 2 for appliance cab area)	
Large nitrile gloves	1	V3006A or S3322
Seal bags – bag used filters from half mask	5	S2230
Cable ties – Seal contamination bag	1 pack	V2154 -
Biowaste Bags	2	V2277A
Respirator tally	5	PG996

20 BA Maintenance Room

20.1 Should contain the following items as a minimum to assist with cleaning the BA sets and a small stock kept on station

Item		POMS ID number
Brush from dustpan set to clean BA sets	2 x brushes	S1804:
Scrubbing brush	2x brushes	V1649
Safety wash	1 x 5L container	ID V1120.
Ultragrime Wipes - Wipes for personal decontamination	1 pack	V1949
Disposable aprons	1 roll of 100 aprons	V3007
Decon gloves (reusable)	2x pairs	PG201
Selection of various sized nitrile gloves	1 pack per size	
Tough cut scissors	5	S2230
Paltech wipes – Wipe	1	S3305
Cable ties – Seal contamination bag	1 pack	V2154

21 Further reading

- Minimising firefighters' exposure to toxic fire effluents - Interim Best Practice Report UCLAN and FBU
- <https://www.fbu.org.uk/publications/minimising-firefighters-exposure-toxic-fire-effluents>

22 Policies affected

22.1 None

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Appendix 1 Green (cold zones) in the fire station Think Contaminants sign Posters

think 
CONTAMINANTS



Spread the word,
not the risk

L F B
LONDON FIRE BRIGADE

Appendix 2 Disrobe procedure for contaminated PPE

If there are any welfare issues following BA wear. Priority should be given to the medical needs of the personnel which would override this policy. But if able and there is an

opportunity to reduce the exposure from fire contaminants then the disrobe procedure should be performed as listed below;.

Disrobe procedure for contaminated PPE and BA	
<u>1</u>	Nitrile gloves to be made available at Entry Control Point (ECP). (Included with the IEC pack)
<u>2</u>	Following BA wear report to Entry Control Operative (ECO). The level of contamination and disrobe requirement should be assessed by the officer in charge/sector commander in liaison with the individual and or BA team leader,
<u>3</u>	When instructed to close down remove fire helmet and pull fire hood over the head (from back
	to front) being careful not to dislodge BA face mask. Allow fire hood to remain looped around the in-line hose of the BA set. (Reference appendix 3)
	(Do not re-wear fire helmet unless it is a safety requirement for the risks)
<u>4</u>	Remove fire gloves, avoid touching the outside of the gloves where possible
<u>5</u>	Don nitrile gloves
<u>6</u>	Close down BA set and collect BA tally from the ECO
<u>7</u>	Report to the committing officer for debrief.
<u>8</u>	Report to the designated decontamination/disrobe area (Amber zone) (Decontamination areas should contain items as set out in section 7.3)
<u>9</u>	Don personal issue half mask with P3 filter as soon as practicably possible.
	Do not enter the appliance - Clean personnel may obtain the RPE from the appliance.
	(Should hydration be required it should be from a bottle and the lid or opening should not be touched with contaminated gloves and is for the shortest time possible with the half mask and P3 filter re-worn after)
<u>10</u>	Remove BA set
<u>11</u>	Wearer to have boots washed down with brush using soap and water before standing on salvage sheet

12 Wearers remove helmet (if not already performed)

13 Remove fire hood from BA set

14 BA set wash with low foaming detergent and brush

xxx

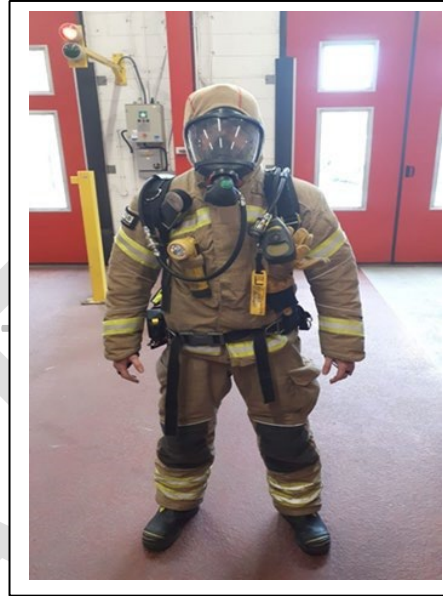
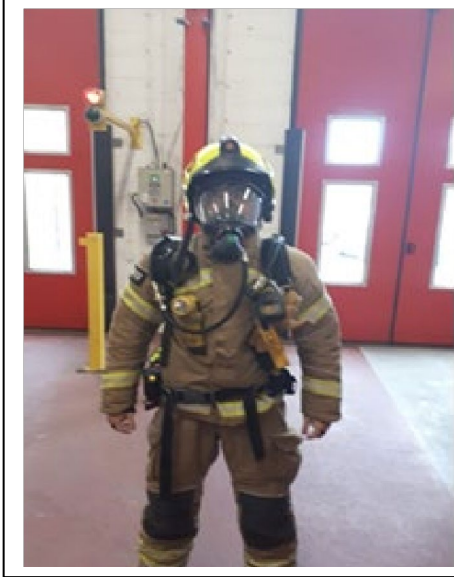
Issue date: xx June 2019

19 of 23

	(Prior to washing BA set water, it must be pressurised)
15	Depressurise the BA set and Bag (Ensure half mask respirator and P3 filter are kept in place whilst sealing bags of BA set or PPE)
16	Helmet, torch, and radio can be wiped down prior to reuse
17	Remove and bag tunic leggings, fire hood and gloves (Ensure personal belongings are removed and half mask respirator and P3 filter are kept in place whilst sealing bags)
18	Remove half mask and clean with wipes Replace back in storage bag
19	Remove nitrile gloves - Wipe exposed skin with wipes and disposed in a waste bag
20	Re-wear clean fire boots
21	Where possible keep the cab clear. Use all available lockers and pump bay for contaminated PPE. BA sets must be secured in the BA brackets.
22	Upon return to station further intensive cleaning of any equipment to take place In accordance with the BA B test procedure and half face mask technical note
22	Remember shower within an hour of returning to station

Appendix 3: - How to remove fire hood

Fire hoods can act as a sponge, absorbing contaminants into its fibres. When rolled down against the neck these contaminants can be absorbed through the skin. Firefighters exiting an incident should remove the fire hood in the following way.

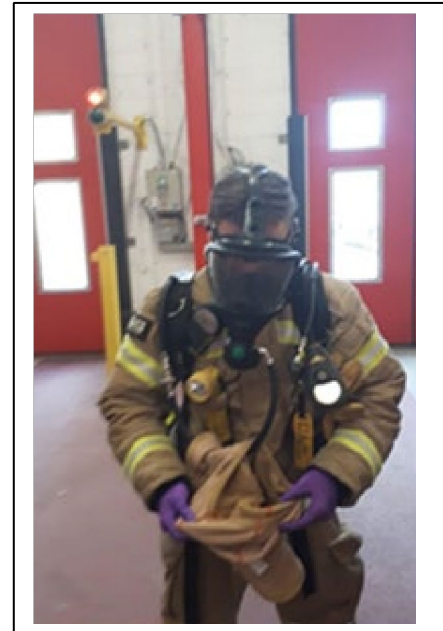


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Remove fire helmet and with the hood still in place pull the fire hood from the back starting at the shoulders over the head with the face mask still in place allowing it to hang on the in-line hose to the lung demand valve this will turn the fire hood inside out.



x



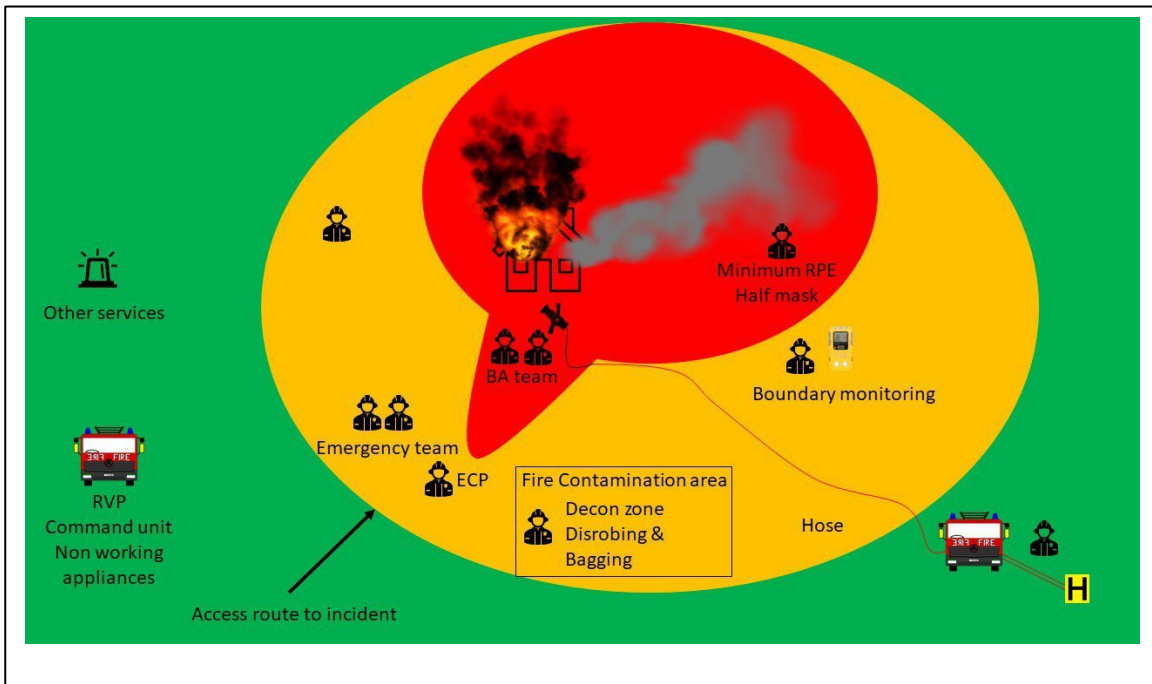
The fire hood should then be removed and placed in the decontamination bag along with tunic and leggings.

Remember to remove ALL items from pockets of PPE prior to laundry.

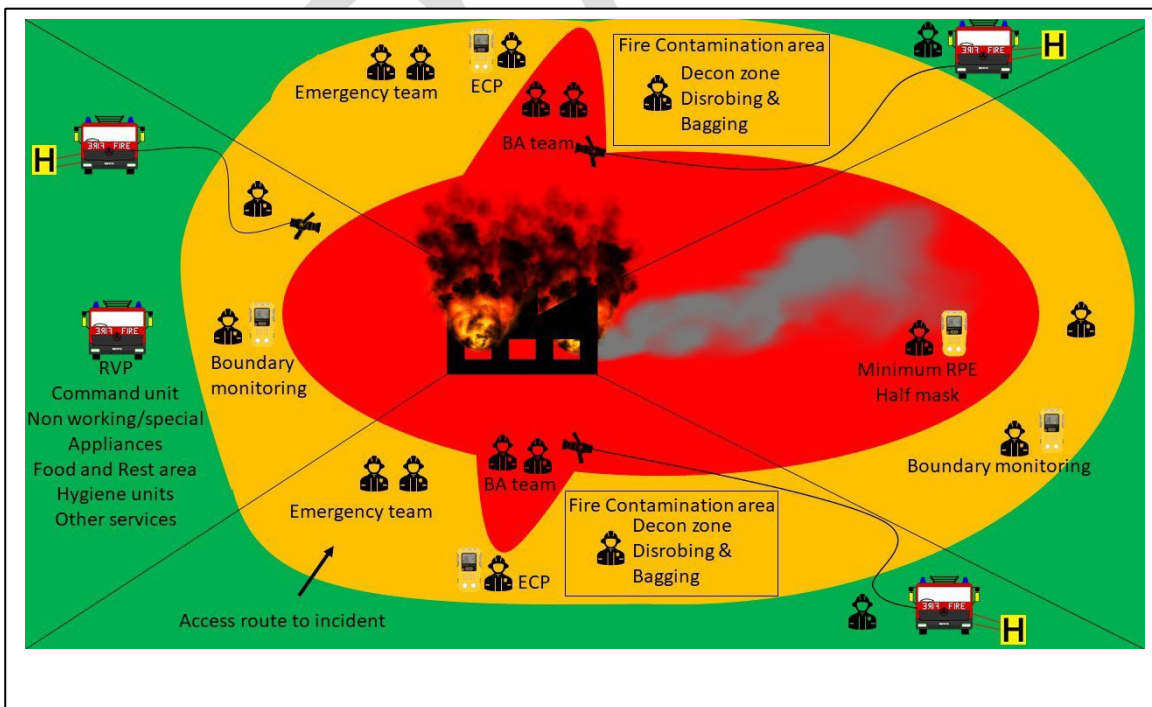
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Appendix 4 Fire contamination zonal system examples

Example of zones used at a small incident



Example of zones used at a large incident



Document history

Assessments

An equality, sustainability, or health, safety, and welfare impact assessment and/or a risk assessment was last completed on:

EIA	15/9/2020	SDIA	15/9/2020	HSWIA	15/9/2020	RA	2/9/2020
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Audit trail

Page/para nos.	Brief description of change	Date

Listed below is a brief audit trail, detailing amendments made to this policy/procedure.

Subject list

You can find this policy under the following subjects.

Freedom of Information Act exemptions

This policy/procedure has been protectively marked due to:

Considered by: (responsible work team)	FOIA exemption	Protective marking descriptor

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Appendix 2

Aquisition cost for fire contaminants box for all front line and training pumping appliances

Contaminants Box Contents	Amount for box	Cost Per items	POMS Number	Cost for contaminants box
Brush from dustpan brush set	1	£0.80	V1120	£0.80
Ultragrime wipes	1	£6.60	V1949	£6.60
Cable ties	1	£3.01	V2154	£3.01
Polythene Bags	10	£0.37	S1804	£3.70
Seal Bags for Respirators	5	£0.03	S2330	£0.15
Washing Up Liquid	1	£4.32	131132	£4.32
Nitrile Gloves default Large	1	£13.89	V2990	£13.89
Bio Bag	2	£0.06	V2277A	£0.12
Orange respirator tally (item is already purchased)	5	£1.95	PG996	£0.00
Aide-memoire	1	Print out local station	N/A	N/A
Total Cost				£32.59

Number of pumping appliances 158

£5,149.22

Aquisition cost for BA maintenance room based on 103 stations

BA Maintenance Room	Amount for room	Cost Per items	POMS Number	Cost for BA maintenance room
Brush from dustpan brush set	2	£0.80	V1120	1.60
Ultragrime Wipes	1	£6.60	V1949	6.60
Paltech Wipes	1	£2.88	S3305	2.88
Scrubbing Brush	2	£1.73	V1649	3.46
Disposable Aprons pack 100	1	£9.00	DP/041	9.00
Safety Wash	1	Included with BA room (£9.56)	S3315	N/A
Tough cut scissors	2	£0.73	S2230	1.46
Nitrile Gloves range of sizes one of each size	5	£13.89	Various	69.45
Decon gloves (reusable)	2	£5.13	PG201	10.26
Cable ties – Seal contamination bag	1	£3.01	V2154	3.01

Total Costs				107.72
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Number of fire stations 103

£11,095.16

Ongoing replenishment costs – based on average usage at incidents of 3 pumps and above

Ongoing cost	Quantity	Cost
Incidents		
Number of primary fire incidents in a 12 month period (Power BI data) 01/04/21 - 01/04/22	8629	
Number of 3 pump fires and above - approx. 6%	500	
Large contamination bags		
Firefighting PPE - approx. x8 firefighters bag PPE per incident - 2 sets per bag (4 x 500)	2000	
BA sets - approx. x4 BA sets required bagging per incident - 1 BA set per bag (4 x 500)	2000	
Number of bags required in total p.a. (2000 x 2)	4000	
Cost of bags @ £0.37 (4200 x 0.37)		1,480.00
P3 filters		
P3 filters - on average 8 personnel will wear respirator and change every 2nd incident (8 x 500/2)	2000	
P3 Filter cost @ £3.97 (2000 x 3.97)		7,940.00
Replacement pre-filter replaced after every incident - cost @ £0.03 (4000 x 0.03)		120.00
Small respirator bags		
Small respirator bags replaced after each second incident (8 x 500/2)	2000	
Cost of cartridge bags £0.03 (2000 x 0.03)		60.00
Wipes		
Average wipe - 50 per incident (50 x 500) - 100 wipes per ultragrim box	25000	
Number of boxes required	250	
Cost of Ultragrim wipes @ £6.60		1,650.00

Cable ties		
8 ties used on average per incident - 100 per pack	4000	
Packs required (4000/100)	40	
Cost of cable ties @£3.01 (40 x 3.01)		120.40
Low foaming detergent		
Low foaming detergent contaminants bottle 1 every 10 incidents @ £4.43 (50 x 4.43)		2,215.00
Nitrile gloves		
Nitrile gloves used per incident = 16 (8 pairs)		
Total nitrile gloves used (16 x 500)	8000	
Packs of 100, number of packs (8000/100)	80	
Cost @ £13.89 (80 x 13.89)		1,104.00
Biobags		
Biobags (average 1 will be used per incident) @ Cost £0.06 (500 x 0.06)		30.00
Dustpan set		
Dustpan set cost £0.80 - replacement required every 10th incident (500 x 0.8/10)		40.00
Total cost p.a.		14759.40

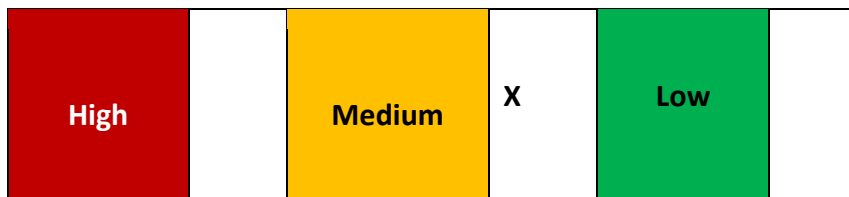
Equality Impact Assessment (EIA) Form

The **purpose** of an EIA is to give **as much information as possible** about potential equality impacts, to demonstrate we meet our **legal duties** under the Equality Act 2010.

Please read the EIA Guidance [on Hotwire](#) before completing this form.

1. What is the name of the policy, project, decision or activity?
Fire Contamination Policy – new policy (PNXXX) and associated training video and materials.

Overall Equality Impact of this policy, project, decision or activity (see instructions at end of EIA to complete):



2. Contact details	
Name of EIA author	Stn.O Adam Stone
Department and Team	Hazardous Materials & Environmental Protection (HMEP) Team Operational Policy & Assurance (OPA)
Date of EIA	First draft 15/9/2020 Reviewed 1/6/2021 Updated to new form 10/6/2021 Updated 22/4/2022

3. Aim and Purpose

What is the aim and purpose of the policy, project, decision or activity?

The policy note and associated training are being implemented to increase awareness regarding the risk of fire contaminants and introduce procedures to reduce that risk.

The associated health risks include:

- Cancers
- Sinusitis
- Asthma
- Emphysema Throat, lung
- Mesothelioma
- Heart disease

The policy and training will introduce (but is not limited to):

- increased awareness into potential health risks
- zonal areas on the incident ground and at stations • new contaminants box
- safe disrobe process.

This will reduce or mitigate the harmful health effects to both front line operational and support staff working groups and the wider community.

This policy and training are aimed at establishing a cleaner culture regarding contaminants within LFB.

Risk

Various scientific studies have shown the potential link between chemicals that are used to make a variety of everyday products, producing further harmful chemicals when involved in fire. These include:

- Firefighting foam is known to contain- Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) which is a known to be a possible human carcinogen (development is ongoing in this area within LFB for a replacement foam – which will see an outright ban in 2023).
- Polyaromatic hydrocarbons (PAH) some of which are a group one carcinogen to humans and the most harmful. It can be inhaled or absorbed dermally through the skin. It can therefore put firefighters and support staff at a greater risk of contracting illness (as listed above) and to a lesser degree the wider community.
- Benzene hydrocarbon which is again known to cause a variety of cancers and can be produced during the incomplete combustion in a fire.

	<p>Secondary contamination/exposure may potentially affect families at home and the wider communities. Secondary exposure is where contamination leaves the incident ground and if not removed adequately may be present at the fire station and potentially onto the homes of staff.</p> <p>For example, a dirty fire tunic will contaminate the appliance cab and if not removed will contaminate clean areas of a fire station (e.g. mess, office). This contamination may be present on workwear uniform and come into contact with cars, home, family, friends etc.</p>
<p>Who is affected by this work (all staff, specific department, wider communities?)</p>	<p>All staff, their families, third party contractors, communities affected by fire and communities entering fire stations.</p>

4. Equality considerations: the EIA must be based on evidence and information.

<p>What consultation has taken place to support you to predict the equality impacts of this work?</p>	<ul style="list-style-type: none"> • Inclusion team • People Services • Equality Support Groups – online consultation • Staff side representation (FBU, FOA, Unison) • Operational staff – several face to face consultations with station staff in the development of the policy. • Liaison with members of staff that are potentially adversely affected e.g. hijab wearers – online liaison. <p>Consultation summary</p> <p>Overall, the consultation has been very positive and the policy is welcomed by stakeholders, in particular staff side representation groups.</p> <p>The FBU Women’s section raised concerns regarding the availability of appropriately sized PPE on station, when PPE requires laundering. The PPE contract is currently under review (in part generated by the introduction of this policy) to consider the availability of PPE. These concerns have been communicated to that group.</p> <p>The consultation with the Inclusion team and People Services has been very useful to work</p>
	<p>through the challenges, particularly regarding race and religion and ensuring all mitigation is considered.</p> <p>Workshops have been offered to all ESGs to consider any potential issues and this offer will continue throughout the introduction of the policy to identify any unforeseen concerns.</p> <p>Meetings have been scheduled with the Women’s section of the FBU to work through the policy.</p>

5. Assessing Equality Impacts

Use this section to record the impact this policy, project, decision or activity might have on people who have characteristics which are protected by the Equality Act.

Protected Characteristic	Impact: positive, neutral or adverse	Reason for the impact	What information have you used to come to this conclusion?
<i>Example: Age</i>	<i>Adverse</i>	<i>Moving this service online will adversely affect older people, who are least likely to have access to a computer or smart phone and may not be able to use the new service.</i>	<i>GLA Datastore: X% of the London community are aged 70 or over. GLA data shows that only 10% of those over the age of 70 have regular access to a computer or smart phone.</i>

<p>Age (Younger, older or particular age group)</p>	<p>Positive</p>	<p>Age can put someone at a greater risk of cancers. Cancer Research UK Statistics show (link opposite) an increase in cancer diagnosis from the ages of 50yrs in both female and male. Chronic exposure to fire contaminants over many years of service, may increase the likelihood of cancer diagnosis. There are also additional factors such as diet and medical</p>	<ul style="list-style-type: none"> • <i>UCLAN and FBU Minimising fire fighters' exposure to toxic fire effluents 2020</i> https://www.fbu.org.uk/publications/minimisingfirefighters-exposure-toxic-fire-effluents <p><i>New Action plan created to address all recommendations</i></p> <ul style="list-style-type: none"> • <i>Holland University report -</i> https://www.ifv.nl/kennisplein/Documents/20180821-IFVExposure-to-smoke.pdf <p>https://www.bmj.com/content/337/bmj.a2467</p>
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		<p>history of cancers that need to be taken into account.</p> <p>Cancer Research UK statistics show that:</p> <ul style="list-style-type: none"> • Age 15-24 account for 1% of all UK cancer diagnosis (2016-18) • Age 25-49 is 10% • Age 50-74 is 50% <p>LFB staff already undertake regular medicals and fitness tests, with the aim of monitoring and improving firefighters' health and wellbeing. LFB have currently chosen not to screen for cancers. This is for a variety of reasons including cost and the invasive nature of the process. There is a stipulation within the current provision that the provider must have the facilities to provide this service in the future if required. The only method of detection currently available is through NHS screening which is usually triggered by age.</p> <p>The policy and training will give staff a greater awareness of the risks and mitigate and/or reduce the exposure from fire contaminants. This will have</p>	<p>https://oem.bmj.com/content/73/11/761</p> <p>www.gov.uk</p> <p><i>Independent report Firefighters and cancer; position paper 47</i></p> <p>https://www.cancerresearchuk.org/health-professional/cancerstatistics/incidence/age#heading-Zero</p> <p>Total workforce composition of fire stations, borough teams, fire investigation and operational support group.</p> <p>Total staff 4,309, of which 9.07% are female. Total number of operational staff aged 50-64 across this area equates to 770. Data from 2022.</p>
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		<p>a potential outcome of reducing cancers.</p> <p>By potentially reducing this risk it is likely to have a greater benefit to those with longer years/time of service and therefore have a positive impact for older staff. We will continue to monitor this by reviewing soft data relating to cases.</p> <p>LFB gather and keep data relating to cancer causing sickness across all staff groups, but does not gather data regarding the specific types of cancer or against particular staff groups (e.g. age, sex, role etc.). This is because the numbers are so small and makes individuals identifiable.</p>	
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<p>Disability (Physical, sensory, mental health, learning disability, long term illness, hidden)</p>	<p>Positive</p>	<p>The policy is supported with a training video which has audio narration to support different learning styles.</p> <p>Considered adding subtitles in the training video but there are only a small number of operational staff with hearing impairments. Should a number of personnel request subtitles then we would explore using You Tube to provide this facility. Individual</p>	<p>Approximately - 273 operational staff are registered disabled, 46 have not provided more information and there are 4 people who would prefer not to say. The cohort of disabled operational staff equates to 6.10% of the total workforce but, 1.12% have not provided any information in terms of their disability or otherwise. (Data from 2021)</p> <p>Work is ongoing with workforce planning and the inclusion team to get more detailed information relating to recording disability data.</p>
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		<p>support will be provided upon request, liaising with learning support.</p> <p>Following a cancer diagnosis there is potential for disability post medical treatment. A survey in 2012 showed that although over 80% of those who were working when diagnosed with cancer thought it important to continue working, 47% had to give up work or change their roles as a result of their diagnosis.</p> <p>There are also the associated physical and mental health issues that can arise with cancer diagnosis. Support is currently provided in this area by people services, Trauma and counselling services, Firefighters charity, Equality Support Groups and staff side representation groups.</p> <p>Additionally, members of the community with an existing disability, such as visual impairment could be more prone to come into contact with fire contaminants e.g. visiting a fire station. This policy and training will reduce that risk.</p> <p>Public Health England research indicates (link opposite) that people</p>	<p><i>Workingwithcancer.co.uk –</i></p> <p><i>https://fingertips.phe.org.uk/documents/Health_inequalities_cancer.pdf</i></p>
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		<p>with disabilities may suffer from a variety of cancers owing to high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use and alcohol use when compared to the general population. If exposed to fire contaminants the individual may not be able to carry out the tasks required to reduce exposure and would require assistance.</p> <p>This policy and training should have a positive impact on those with this protected characteristic, because they are more vulnerable to exposure from fire contaminants and this policy will reduce that risk.</p>	
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<p>Gender reassignment (Someone proposing to/undergoing/undergone a transition from one gender to another)</p>	<p>Neutral</p>	<p>No adverse impact is anticipated as the policy only covers the removal of firefighting PPE, not general workwear clothing.</p> <p>Since PPE is donned in a public space (fire station) there is no difference to its removal on the incident ground.</p> <p>The policy/training also covers the need to ensure personnel adopt good hygiene practices on the fireground and upon return to station.</p>	<p>No specific information is available regarding staff in this category.</p>
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		<p>Personnel are not undressing at the scene.</p> <p>Additionally, the recommendation to shower within the hour upon return to station, is covered by fire stations privacy for all.</p> <p>Language used within training materials will be inclusive when communicating the policy, avoiding unnecessary gendered terms to ensure staff outside of binary gender are not excluded. <i>And staff will ensure they have attended inclusive language workshops delivered by the Inclusion Team.</i></p> <p>Therefore, it is likely this policy/training will have a negligible impact on this protected characteristic group.</p>	
<p>Marriage / Civil Partnership (Married as well as same-sex couples)</p>	<p>Neutral</p>	<p>This policy and training should be the first line of defence when managing firefighter safety regarding fire contaminants and the potential associated carcinogenic hazard in the workplace. It is also intended to reduce cross contamination from the incident ground and reduce secondary</p>	<p>No specific information is available regarding staff in this category.</p> <p>UCLAN and FBU Minimising fire fighters' exposure to toxic fire effluents 2020 https://www.fbu.org.uk/publications/minimising-firefightersexposure-toxic-fire-effluents</p>

		<p>contamination to the workplace and beyond (people’s homes).</p> <p>The impact of a cancer diagnosis can be far reaching not only to the individual but to their family, friends and colleagues.</p> <p>It is unlikely that there will be any adverse impact on married staff (including same sex couples).</p> <p>The training/policy considers family life and ensures that language is inclusive and avoids unnecessary terms to ensure staff are not identified regarding their relationship or partnership status.</p>	
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<p>Pregnancy and Maternity</p>	<p>Positive</p>	<p>In line with Policy Note 555b “Maternity, Maternity Support and Adoption Provisions, including maternity and adoption support leave and shared paternity leave – uniformed staff” and Home Office recommendations, pregnant uniformed operational staff should be removed from operational firefighting duties and only return when they have regained physical fitness or have ceased breastfeeding.</p>	<p>No specific information is available regarding staff in this category.</p> <p>UCLAN and FBU Minimising fire fighters’ exposure to toxic fire effluents 2020 https://www.fbu.org.uk/publications/minimising-firefightersexposure-toxic-fire-effluents</p> <p>https://news.berkeley.edu/2020/02/26/women-firefighters-face-highexposure-to-toxic-forever-chemicals/</p>
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		<p>There is a potential risk that fire contaminants can affect pregnancy and nursing baby. This is covered in the maternity policy/guidance and that as soon as an individual is aware they are pregnant or nursing a baby; they are placed on restricted duties/light duties typically administrative tasks but can remain on station.</p> <p>Fire stations are a potential source of cross contamination from fire contaminants. This policy/training will reduce that risk of cross contamination.</p> <p>Zonal areas which are introduced in the policy and training will reduce the concentration of carcinogenic/harmful chemicals in protected areas such as mess, dorm and office etc., and potentially mitigate/reduce risk for the pregnant individual.</p> <p>Therefore, this policy/training has a positive effect on this protected characteristic.</p>	
<p>Race (including nationality, colour, national</p>	<p>Positive</p>	<p>It is unlikely that there will be any adverse impact on race.</p>	<p>The ethnicity breakdown of operational staff from firefighter to station officer is as follows: White: 3,762 (83.99%) BAME: 641 (14.31%) No</p>

<p>and/or ethnic origins)</p>	<p>The policy targets the risk of all cancers and reducing the potential impact from fire contaminants (not the specific types of cancers).</p> <p>There is evidence regarding the rate and different types of cancer incidence within specific ethnic groups (Reference links provided).</p> <p>There are certain types of cancers that appear higher in black, Asian and mixed/multiple ethnic group such as prostate (x2 rate) and myeloma. Hodgkins lymphoma diagnosis has higher incidents in the black and ethnic group when compared to white groups.</p> <p>Therefore, communities from black, Asian and mixed/multiple ethnic groups could be more adversely affected from fire contaminants.</p> <p>The training/policy will reduce/mitigate this risk and therefore have a positive effect on this protected characteristic.</p> <p>The training will ensure language is inclusive and avoid unnecessary racial terms to ensure staff are not identified by their nationality, colour</p>	<p>information provided: 67 (1.50%) Prefer not to say: 9 (0.20%) – Data from 2021 https://www.nature.com/articles/s41416-022-01718-5 http://raceequalityfoundation.org.uk/wp-content/uploads/2018/07/REF-Better-Health-471-1.pdf</p>
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		<p>or ethnic origins. Trainers will attend the Inclusion Team’s inclusive Language workshop.</p>	
<p>Religion or Belief (people of any religion, or no religion, or people who follow a particular belief (not political))</p>	<p>Adverse</p>	<p>The policy/training does not have any religious element directly, but the equipment used may have a religious impact, such as the use of vegan or non-alcoholic based wipes. (An EIA has been completed on the new wipes and these wipes are currently in service).</p> <p>Head coverings such as hijabs and patkas can be worn with breathing apparatus (BA) - EIA completed for use of hijab completed by BA replacement project. These head coverings and are recommended to be made from natural fibres. Head coverings could potentially come into contact with fire contaminants from the fire hood, following a BA wear.</p> <p>Head coverings will need to be handled in the same vein as workwear and regularly washed and replaced with clean items after each BA wear upon returning to station - this is</p>	<p>Make up of FRS staff and operational staff from firefighter to station officer (whose needs have been considered) is as follows: Muslim: 70 (1.62%) Hindu: 14 (0.32%) Sikh: 15 (0.35%) Jewish: 13 (0.30%) – LFB Data 2022.</p>

		<p>included within the policy and training.</p> <p>The safe undress procedure and recommendation of showering within an hour on returning to station will reduce exposure from fire contaminants and reduce potential absorption through the skin.</p> <p>It is important to change head coverings that are in direct contact with the fire hood as soon as practicable owing that the fire hood is only one layer of fabric. It may be possible that fire contaminants could wick or transfer onto the head covering and allow for absorption of fire contaminants through the scalp where the skin is thinnest.</p> <p>Although there is no scientific testing that has been performed to definitively substantiate this. A reasonable assumption has been made through general structural PPE testing, which showed that fire contaminants can breach through multiple layers of fabric.</p>	
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		<p>The recommendation of replacing religious head coverings straight after the BA wear or at the scene will</p>	
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		<p>require privacy. This is challenging on the incident ground, unless there is a Fire Rescue Unit or Personnel Hygiene Unit available.</p> <p>Following a discussion with a Firefighter that currently wears a hijab, they had recently attended the two day BA training course which includes an introduction to fire contaminants. They confirmed that they would be able to wipe the skin around the back of the neck and areas of exposed skin and mitigate the risk. Currently they have two spare hijabs and central operations group are increasing this spare supply to ensure a change can be made following each BA wear.</p> <p>There may be issues with religious beliefs and the expectation of washing hair following a fire. Difficulty, for example could arise with dreadlocks. The policy strongly encourages showering within the hour and this includes washing hair. This will be down to the individual choice of the firefighter based on the policy, training</p>	
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		<p>and risk awareness of fire contaminants they will receive.</p>	
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		<p>Following the policy and training this could help reduce the concentration/ exposure to the harmful chemicals from fire contaminants.</p> <p>Due to the issues raised regarding head coverings, the assessment determines a potential adverse impact, with mitigating actions recorded below.</p>	
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<p>Sex (men and women)</p>	<p>Positive</p>	<p>An individual may reconsider a career in the fire service if they read the report by UCLAN on fire contaminants. If the contaminants risk is not managed and communicated effectively, it could harm future recruitment or retaining diverse staff.</p> <p>The policy/ training should reduce this risk and demonstrate that LFB are committed to act upon the research relating to fire contaminants and thus improving safety for all. This should improve the health and wellbeing of staff.</p> <p>Women are potentially more likely to be deterred from either joining or staying with LFB due to concerns relating to these risks and the</p>	<p>Total workforce composition of operational staff from firefighter to station officer is 4,479. Women make up 8.82% of the total operational staff workforce composition (equal to 395) compared to men who make up 91.18% (equal to 4,084) between the ranks of firefighter to station officer. (LFB Data - 2021)</p> <p><i>REDUCE YOUR RISK FDNY's Call to Action for Reducing Occupational Exposure to Fireground Contaminants</i></p> <p>https://www.sffcpf.org/research-and-studies/</p> <p>https://news.berkeley.edu/2020/02/26/women-firefighters-face-highexposure-to-toxic-forever-chemicals/</p>
		<p>potential increase in specific female related cancers.</p> <p>Therefore, by reducing this risk and communicating the approach taken, it will have a positive effect on recruitment of women, retention and it is therefore likely there will be a positive impact on this protected characteristic.</p>	

<p>Sexual Orientation (straight, bi, gay and lesbian people)</p>	<p>Neutral</p>	<p>This policy/training does not include any issues that would adversely affect sexual orientation, which have not already been detailed. Any further phases of the project will require consultation with the Equality Support Groups (particularly the LGBTQ+ group) to ensure that language is inclusive.</p>	<p>Intended end users of the policy are across the ranks of firefighter to station officer. The sexual orientation of this operational workforce comprises as follows: Heterosexual staff: 68.05% (3,048) Those who prefer not to say: 26.39% (1,182) LGBTQ+ staff: 5.52% (249) (LFB Data 2021)</p>
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<p>6. Impacts outside the Equality Act 2010</p>
<p>What other groups might be affected by this policy, project, decision or activity?</p>
<p>The groups potential affected by this are:</p> <ul style="list-style-type: none"> • LFB staff – all groups – both operational and FRS staff • Third party providers – e.g. cleaners, PPE providers • Communities affected by fire
<ul style="list-style-type: none"> • Communities entering fire stations and LFB workspaces <p>This EIA considers all these groups and the impact of the policy and training.</p>

7. Legal duties under the Public Sector Equality Duty (s149 Equality Act 2010)

How does this work help LFB to:	
Eliminate discrimination?	<p>This policy and training reduce the risk of fire contamination and associated illness, which can adversely affect groups covered by the equalities act 2010. By reducing that risk, LFB reduce discrimination to the groups identified within this EIA. Ensuring training is inclusive will also help mitigate this risk.</p>
Advance equality of opportunity between different groups?	<p>It is anticipated that the contaminants policy/training will meet the needs of all staff who may come into contact with (directly or indirectly) fire contamination irrespective of their protected characteristics or differences, because it takes positive steps to ensure that everyone can mitigate the risks from fire contaminants.</p> <p>There are a complex set of considerations around this policy to ensure people with different protected characteristics are not adversely affected. It is important to continue to liaise with different groups and ESGs to work through any potential issues, particularly through the initial introduction of the policy and training, where new concerns may arise. Workshops have been offered with the ESGs to support this.</p> <p>It is also important to recognise differences within intersectionality and accept that different staff will have different needs from across the protected characteristics and these needs may be unique and should be considered.</p>
Foster good relations between different groups?	<p>The effective management of carcinogenic hazards in the workplace requires ongoing liaison with all stakeholders including management, Equality Support Groups, Trade Union rep bodies and operational staff. This is essential to further develop the policy and training.</p> <p>The Service embraces a positive Health and Safety culture, and this is demonstrated by senior management's commitment to the UCLAN report and in the future, invest in new and improved equipment and PPE when it becomes available.</p>

8. Mitigating and justifying impacts		
Where an adverse impact has been identified, what steps are being taken to mitigate it? If you're unable to mitigate it, is it justified ?		
Characteristic with potential adverse impact (e.g. age, disability)	Action being taken to mitigate or justify	Lead person responsible for action
Religion – wearing of hijab or other headgear	Provide additional spare hijabs to ensure it can be changed frequently and as necessary	Central Operations

Now complete the RAG rating at the top of page 1:

High: as a result of this EIA there is evidence of significant adverse impact. This activity should be stopped until further work is done to mitigate the impact.

Medium: as a result of this EIA there is potential adverse impact against one or more groups. The risk of impact may be removed or reduced by implementing the actions identified in box 8 above.

Low: as a result of this EIA there are no adverse impacts predicted. No further actions are recommended at this stage.