

Chen Yong Kai

Lieutenant-Colonel Chen Yong Kai is an officer of the Singapore Civil Defence Force, where he has dedicated 15 years of service to safeguarding public safety. He has served in roles including Commander of a fire station and Head of Operations of a land division.

In his current role as Senior Assistant Director of the Fire Safety Management Branch within the Fire Safety Department, he leads initiatives to enhance fire safety standards and compliance across Singapore.

Lieutenant-Colonel Chen recently completed his Masters in Fire Safety Engineering at Ulster University, where his academic excellence earned him both the 'Best Student' and 'Best Dissertation' awards in 2024.

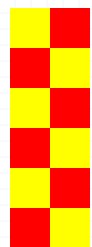




SCDF

The Life Saving Force

... for a safer Singapore



Singapore's Approach – Protecting Firefighters from Toxic Fire Effluent through Post-Fire Hygiene Measures

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Singapore Civil Defence Force (SCDF)



SCDF
The Life Saving Force
... for a safer Singapore

**A People-Centric SCDF:
Caring for our People**



Mission

To protect and save lives and property for a safe and secure Singapore

Vision

A world-leading life saving force through people, innovation & partnership for an emergency ready nation

Core Values

- We take **pride** in saving lives and property
- We **care** for our people and those we serve

SCDF's Primary Roles and Functions



Firefighting &
Rescue



Hazardous
Materials
Mitigation



Emergency
Medical
Services



Fire Safety &
Public
Protection



Community
Engagement



SCDF – One of the Best Employers

"Singapore's Best Employers 2025" Survey

- Based on The Straits Times and global data firm Statista, SCDF has been ranked:
 - ✓ 81 out of the top 250 private and public sector organisations
 - ✓ The top government sector employer
- This recognition highlights SCDF's strong workplace culture and employee-centric policies



Protecting Firefighters through Post-Fire Hygiene (PFH) Measures

- SCDF implemented PFH measures for firefighters given the higher risk of exposure to potential carcinogenic substances
- Key consideration – implementation in a safe and practical manner
- To minimize firefighters' exposure to harmful fire toxicants, thereby protecting them from long-term health risks



Fire Types Requiring PFH Measures

- Moderate-size fires in enclosed areas (e.g., housing unit fires and vehicle fires in multi-storey car parks)
- Large-size fires (e.g., warehouse fires, factory fires and ship fires)
- Fires involving petroleum and flammable materials or toxic chemicals
- Other fire types where firefighters may be exposed to similar amounts of fire toxicants



Tiered Approach for Practical Implementation

Tier 1 Measures

- For firefighters deployed within the immediate risk area
- Deployed in area(s) where self-contained breathing apparatus (SCBA) generally needs to be used

Tier 2 Measures

- For firefighters deployed outside the immediate risk area
- Deployed in area(s) where SCBA is generally not required



Tiered PFH Measures to Reduce Exposure

- At post-fire incident scene
 - ✓ Don P100 masks for post-fire activities (e.g., fire investigation and recovery) as the use of SCBA may be impractical given the nature and/or risks of such activities
- During post-fire outside the risk area
 - ✓ Responders undergo quick washing with soap and water
 - ✓ Spot-cleaning of exposed personal protective equipment (PPE) with brush, soap and water
 - ✓ Bag their bunker gear for advanced chemical wash

Tier 2
measures

Tier 1
measures



Tiered PFH Measures to Reduce Exposure

- Rear of fire engine with the in-built water tap for:
 - ✓ Washing and cleaning exposed skin surfaces of firefighters
 - ✓ Spot cleaning of PPE



Types of Bunker Gear Cleaning

- Spot Cleaning

- ✓ Scrubbing and washing the bunker gear and other PPE with soap and water
- ✓ To remove any surface stains
- ✓ Back at base, the bunker gear shall be hung in an open area, away from direct sunlight



Types of Bunker Gear Cleaning

- Advanced Chemical Wash
 - ✓ Applicable to personnel operating in SCBA-required area (Tier 1)
 - ✓ Deep cleaning of the bunker gear with special chemicals that remove hydrocarbons and other contaminants
 - ✓ Performed by the vendor who will collect, wash, dry and return the bunker gear within 48 hours
 - ✓ Also scheduled semi-annually with inspection to ensure bunker gear remains fit for use



Other Measures to Reduce Exposure

- Prior to proceeding to the rest/rehab area,
 - ✓ Firefighters are advised to remove their bunker gear jackets and place them at a separate area (approx. 20m away) from the rest area to minimize cross-contamination
 - ✓ Exposed skin areas of personnel and dirty PPE should be subjected to a quick 'spot-cleaning' before proceeding to the rest area

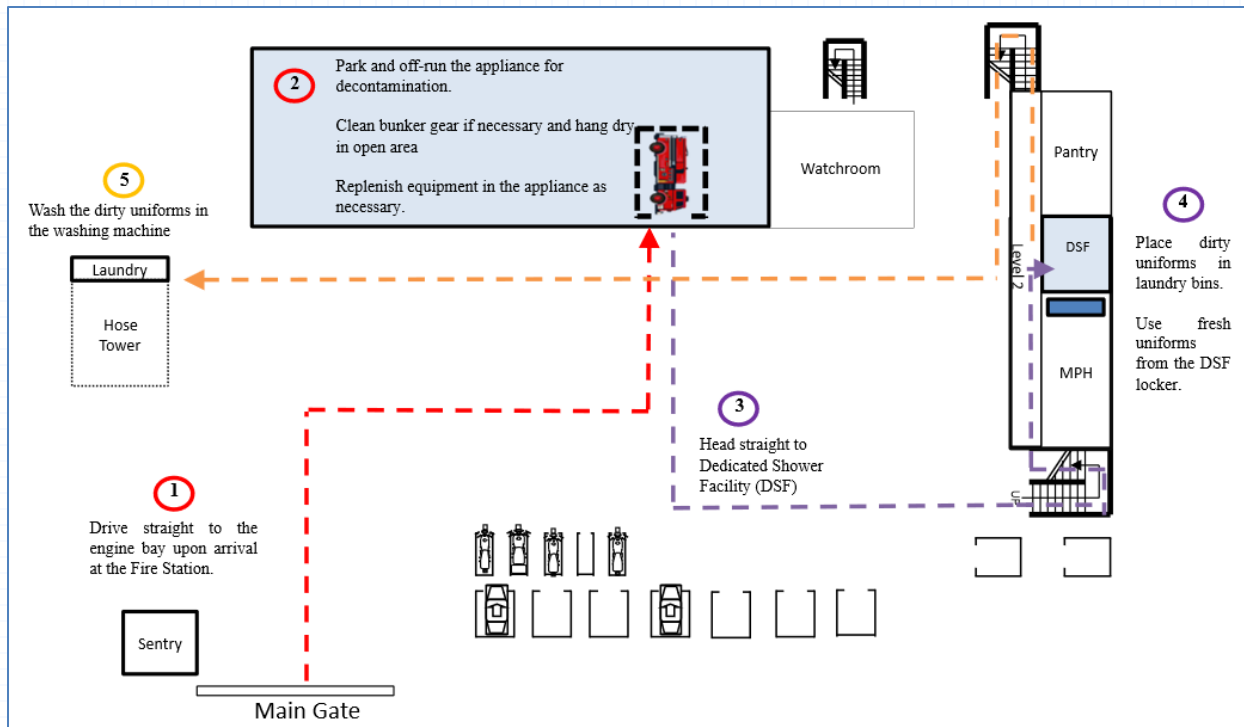


Managing Hygiene within the Fire Stations

- Upon returning to the fire station,
 - ✓ Dirty equipment will be cleaned
 - ✓ Bunker gear will be hung in an open area/ sent for advanced chemical washing
 - Firefighters shall use their spare bunker gear if required
 - ✓ Firefighters will proceed to dedicated shower facility



Movement of Firefighters through the Dedicated Shower Facility (DSF)



Thank you!

