



## Ontario Emergency Medical Services Section 21 Sub Committee

### Emergency Medical Services Guidance Note #3

#### Issue: Reducing Diesel Exhaust in EMS Stations

Although commercial EMS diesel vehicles currently meet emissions standards and are legislated to undergo an annual emission testing requirement, the potential for exposure to diesel fumes may still exist inside EMS stations. Workers and employers should take the necessary steps to prevent or adequately control their exposure to diesel emissions in the workplace.

Incomplete combustion by diesel engines produces diesel exhaust fumes. Breathing in diesel fumes can have adverse health effects on workers. Exposure to the fumes can cause irritation of the eyes or respiratory tract. Prolonged exposure to diesel exhaust fumes may lead to respiratory diseases. Diesel exhaust is a complex mixture of gases and diesel particulate matter (DPM).

Components of the diesel exhaust include:

- carbon monoxide
- carbon dioxide
- sulphur dioxide
- nitrogen oxides
- aldehydes including benzene and formaldehyde
- hydrocarbons
- polycyclic aromatic hydrocarbons (PAHs)
- soot (carbon).

Air sampling for these chemical components has been found to be both difficult and expensive. In addition, results of these tests have been inconsistent due to the varying factors involved (i.e.: engine revolution levels, engine efficiency etc). Workplaces are advised to seek the assistance of a qualified industrial hygiene consultant when developing an air quality program.



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In the development of an air quality program and air sampling with respect to diesel emissions the workplace parties are advised to reference the Regulation for Industrial Establishments (Reg.851), sections 124, 127, and 128, the Regulation respecting Control of Exposure to Biological or Chemical Agents (Reg.833) and the OHSA section 25(2)(h).

It is recommended that the installation of direct capture type exhaust system extractors or automated vehicle exhaust removal/ventilation systems be installed through renovation or new construction. An engineered ventilation system should also be considered to limit workers exposure to diesel exhaust emissions.

In addition exposures to diesel fumes may be reduced through engineering controls at the source such a diesel exhaust converters or purifiers. The discharge of air from any exhaust system should be in such a manner so as to prevent the return of contaminants to the workplace.

The following actions may further assist in decreasing exposure to diesel exhaust fumes:

- Ventilate the garage by opening the doors prior to starting the engine.
- Move vehicles outdoors as soon as possible after start up period. In the event EMS vehicles are equipped with air brakes, the vehicle should be moved as soon as low pressure warning devices are deactivated.
- Isolate adjacent occupied spaces from all emissions by ensuring that doors are self-closing and have adequate seals.
- Ensure regular diesel engine tuning/maintenance.
- Avoid unnecessary idling of vehicles.
- Selection of fuel with reduced sulfur content if possible.
- Ensure all patient care equipment, linen, or personal belongings are enclosed if stored in garage area
- Ensure annual review of this guidance note by The Health and Safety Committee and/or worker health and safety representative.



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A reduction in soot discoloration of stations will be a visible indication that your controls are reducing exposure to EMS staff.

**This document should be shared with the workplace Joint Health and Safety Committee or Health and Safety Representative, incorporated into the workplace occupational health and safety policy and program where appropriate and posted on the AMEMSO and PSHSA web-sites.**

**For additional information on the requirements under the Occupational Health and Safety Act (OHSA), please contact your local Ministry of Labour Office, or visit the website at;**  
<http://www.labour.gov.on.ca>

**This guidance note is developed for informational purposes only. Reference should always be made to the OHSA and regulations to ascertain one's rights and duties under the law. It is the responsibility of all workplace parties to ensure compliance with the OHSA and regulations, and to seek independent legal advice where questions remain.**

**The Public Services Health & Safety Association (formerly: Municipal Health and Safety Association) of Ontario may be contacted for assistance in the development and implementation of an occupational health and safety policy and program: <http://www.mhsao.com>**