Guidelines

Emergency Response – Vehicle Exhaust Extraction System

All workmanship and materials shall be in accordance with applicable codes, regulations and guidelines. The following codes, regulations and guidelines are to be considered part of these specifications and are a minimum standard of evaluation for this Hazardous Material Exhaust System.

- NIOSH
- Underwriters Laboratory (UL)
- National Fire Protection Agency (NFPA)
  1. National Electric Code (NEC)
  2. NFPA 1500 – 2002 Edition
- Air Movement and Control Association International, Inc. (AMCA)
- International Mechanical Code (IMC)
- Uniform Mechanical Code (UMC)
- American National Standards Institute (ANSI)
- American Society of Mechanical Engineers (ASME)

☐Comply ☐Exception

The system shall meet the following minimum performance criteria:

1. The exhaust removal system must provide virtually 100% complete evacuation of all vehicle emissions (particulate, gasses and fumes) at the source from start up to exit of the apparatus from the fire station. Independent certification documents shall be provided and attached to the bid proposal.

2. The exhaust system shall not block doorways, exits, and aisles in the apparatus bay, which could endanger the welfare of fire personnel or visitors.

☐Comply ☐Exception

Standard Products:

Equipment and materials provided for the system installation(s) shall be manufactured and provided by the supplier of primary exhaust removal system (Equipment Manufacturer) and be a standard product of manufacturer currently engaged in the manufacture of Vehicle Exhaust Extraction Systems. Where the requirement calls for a packaged exhaust system to be provided, all items shall be the standard product of the manufacturer. The Vehicle Exhaust Extraction System Manufacturer has provided Vehicle Exhaust Systems for a minimum period of ten (10) years.

☐Comply ☐Exception

Quality Assurance:

The manufacturer must be ISO 9001:2000, certificate must state for the Design, Assembly, Marketing and Sales of Extraction and Filtration Systems and Equipment. UL and CUL Certified and certified by the Air Movement and Control Association (AMCA) to ensure quality, consistency and reliability of products. Certification documents shall be provided and attached to the bid proposal. All Workmanship, manufacturing procedures, airflow design and materials shall be performance guaranteed. If any performance as outlined in the performance/technical specifications, the bidder shall remove and replace at his expense the materials in question.

☐Comply ☐Exception

Manufacturers Qualifications:

Bids shall only be accepted from bidder's supplying equipment from manufacturers that have an established reputation in the business of manufacturing Vehicle Exhaust Extraction Systems for a minimum of no less than ten (10) years. System bid shall have a life of service of no less than ten (10) years to establish proof of quality, longevity and service. Equipment life of service shall meet the department's expectations for similar types of equipment.

☐Comply ☐Exception

All Manufactures shall have or will have a performance bond

☐Comply ☐Exception

Requirement of Exhaust Extraction System:

1. Upon emergency vehicle(s) starting, the exhaust ventilation fan shall be automatically energized by the output pressure generated by any internal combustion engine and evacuate the toxic exhaust fume.

☐Comply ☐Exception

2. The nozzle must release and disconnect near the threshold of the exit door regardless of the speed the vehicle may exit the door.

☐Comply ☐Exception

3. Systems which limit the exiting speed are not acceptable as they can limit emergency response time.

☐Comply ☐Exception

4. Due to harmful effects of diesel exhaust, the system must be designed and capable of virtually capturing 100% of the exhaust gases and particulate even in the event of a complete power failure. Stand alone system with no additional wiring to make it operate.

☐Comply ☐Exception

5. The system will not detach itself from the apparatus for any reason during a power failure other than normal exiting of the apparatus bay.

☐Comply ☐Exception

6. Systems that require additional or alternate power source to eliminate detaching during power failure are not acceptable due to additional maintenance requirements.

☐Comply ☐Exception

7. To protect the apparatus electrical system from any possible damage, the system bid shall not incorporate any type of electromagnetic device that requires the apparatus to be utilized as an electrical ground for the system's operation.

☐Comply ☐Exception

8. The system will not incorporate any electromagnetic or magnetic devices that require either fastening or drilling into the side body panels or tailpipes of the fire apparatus, which could affect vehicle warranty. A pneumatic system is preferred.

☐Comply ☐Exception

9. The nozzle release mechanism must be external on the system to insure safe disconnect of nozzle from tailpipe.

☐Comply ☐Exception

10. The upper hose assembly must be rated for 600˚F continuous, 700˚F intermittent temperature to ensure the exhaust fume does not deteriorate the hose and leak. The lower hose assembly must be rated for 900˚F continuous, 1221˚F intermittent.

☐Comply ☐Exception

11. A safety disconnect handle shall completely separate the lower nozzle section from the upper hose assembly.

☐Comply ☐Exception

12. All electronic and electrical components shall be UL listed and shall provide documentation of such. Control panel must meet NFPA 74 for arc flash protection and panel shall be manufactured in a 508A panel shop.

☐Comply ☐Exception

13. The upper and lower hose sections must be capable to swivel 360 degrees, (if swivel is incorporated in design) allowing free flowing system operation, thus allowing no tension on the hose attachment and the hose release features.

☐Comply ☐Exception

14. Systems that utilize adaptors which mate with Magnetic type nozzle connection in order to secure the nozzle to exhaust pipe in a fastening mode must be metal to metal connection.

☐Comply ☐Exception

15. Systems which require disconnection of nozzle from vehicle when working on vehicle's fuel system, recharging batteries or whenever there is a risk of inflammable dust or explosive gases, are not acceptable.

☐Comply ☐Exception

16. Manufacturer must be an ISO 9001:2000 Certified Company with Certification issued to United States Facility. Certification bust be accompanied with bid.

☐Comply ☐Exception

17. Attachment shall be made in any direction of the nozzle, no attachment point mandated. It may be a Clip and Go.

☐Comply ☐Exception

18. Due to safety of fire personnel, systems which require tailpipes or their adapters to protrude beyond the outside edge of the chassis are no acceptable due to NFPA 1901, 2009 requirements.

☐Comply ☐Exception

19. The transition from the Magnetic nozzle to the flexible hose (if used) shall be one piece welded construction to prevent leaks of exhaust fumes. The transition shall be made of stainless steel for durability.

☐Comply ☐Exception

20. All components used along the track and in system shall be of non-rusting material. Components shall be set at heights to not impede movement of apparatus.

☐Comply ☐Exception

21. Nozzle construction at point of contact to exhaust pipe must be metal to metal connection.

☐Comply ☐Exception

22. System must allow in station pump test for 15 minutes / 1500 RPMs, this feature must be printed on Control Center for System Operation procedures.

☐Comply ☐Exception

23. Tailpipe Adapters (if used) must be bolted onto the exhaust system, welded on adapters will not be acceptable.

☐Comply ☐Exception

24. Control panel must have system indicator lights.

☐Comply ☐Exception

25. Controls that require electrical or pneumatic devices installed to exhaust blower must not cause interference with any equipment.

☐Comply ☐Exception

26. Control panel will have AUTO START-STOP-MANUAL RUN controls.

☐Comply ☐Exception

27. System shall have an automatic timer set to properly operate for the duration of the 100% exhaust capture. After the time has expired, the exhaust blower will shut off.

☐Comply ☐Exception

28. Blower must provide design flow for use. Specifications will be supplied by bidder for use design.

☐Comply ☐Exception

29. Duct work shall be designed to meet extraction system.

☐Comply ☐Exception

30. All non-welded ductwork, fittings and joints must be securely fastened and sealed with a mechanical Teflon duct collar with locking bolt mechanism as required by the International Mechanical Code and the Uniform Mechanical Code.

☐Comply ☐Exception

31. Back-draft damper exhaust rain cap must provide protection from rain and other inclement weather.

☐Comply ☐Exception

32. Silencer/Muffler must be connected to exhaust discharge to reduce discharge air noise for all fans to reduce noise decibels to 64dba.

☐Comply ☐Exception

33. System must be covered for warranty of not less than 5 years of full parts and labor complete. Submitting company must include service center location within IL and provide such address and contact information.

☐Comply ☐Exception

34. Training to be provided by Bidder at the time of installation to the Fire Staff for the use and operation of the Vehicle Exhaust Extraction System to all three shifts.

☐Comply ☐Exception

35. Bidder must make an on-site survey of the facility and provide a layout drawing showing location of vehicles and equipment to be supplied. This is a mandatory requirement to ensure the proposed system meets the intent of the specifications and fits within the building space. Drawing must be included with the bid.

☐Comply ☐Exception

These specifications must be completed and returned with bid with response noted in each box. If boxes are not fully checked the bid will be considered non-responsive and disqualified in its entirety.

Explanations of Exception to Specifications to be notes on enclosed form and also included in bid package.

Bidder_____ Signature_____

Address_____ Printed Name_____

_____ Title_____

Phone_____ Date_____

Explanation of Exceptions to Specifications

ITEM	EXPLANATION