

INCH-POUND

A-A-59818A

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SUPERSEDING

A-A-59818

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COMMERCIAL ITEM DESCRIPTION (CID)

TRUCK, FIRE FIGHTING (AIRCRAFT RESCUE) (A/S32P-34 - RAPID INTERVENTION VEHICLE)

The General Services Administration has authorized the use of this commercial item description for all federal agencies.

1. **SCOPE.** This CID covers a commercial light Aircraft Rescue and Fire Fighting (ARFF) vehicle designed for rapid intervention. It has a 4x4 chassis; a diesel engine; an automatic transmission; a three person cab with at least two passenger doors and two access doors. The vehicle is equipped with a ultra high pressure (UHP) firefighting system with a minimum 400 gallon capacity water tank; equipment compartments; a front mounted bumper turret, and fire hose. The ARFF vehicle is capable of extinguishing aircraft, aircraft fuel, and weapon system fires associated with airfield and flight line operations. The ARFF vehicle is intended to carry limited rescue and firefighting equipment for rescuing occupants and combating aircraft fires.

2. **SALIENT CHARACTERISTICS.** The ARFF truck shall be in accordance with the applicable requirements of National Fire Protection Association (NFPA) 414, *Standard for Aircraft Rescue and Firefighting Vehicle*, 2007 Edition, except as otherwise specified herein. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: WR-ALC 542 CSW/642 CBSG, 295 Byron Street, Robins AFB, GA 31098-1611.

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2.1 Administration.

2.1.1 Manuals.

2.1.1.1 Technical manuals. The overall format for the manuals may be military specification, commercial, or a combination of both. Each technical manual shall have a title page. Line art shall be used to the maximum extent possible for illustrations and parts lists.

a. The contractor may submit digitized technical manuals in lieu of printed paper copies. The contractor may recommend the delivery of files developed in a "native" format as the final delivery medium. Native formats include: MS Word, Framemaker, Interleaf, et cetera. However, all recommendations for native formatted data or graphics shall be approved by the Technical Order Manager prior to any work being performed.

b. The contractor shall validate the technical manuals for accuracy prior to submission to the procuring activity for verification. The contractor shall submit one complete set of draft manuals to the procuring activity for verification no later than 60 days prior to the first production test. Any changes or corrections noted by the procuring activity shall be corrected and updated pages or manuals shall be submitted to the procuring activity.

c. Once approved by the procuring activity and a Technical Order number is assigned, the contractor shall pack two complete sets of both hard copy and electronic format to each base. An additional set of both hard copy and electronic format shall be submitted to the procuring activity for stock at:

580 CBSS/GBZV
Attn: Mr. Dallas Perry
380 Richard Ray Blvd, Suite 104
Robins AFB, GA 31098-1640

d. The contractor shall provide written reproduction rights to the United States Air Force for all technical manuals, to include manuals developed by the contractor as well as those for all subsystem components used in the manufacture of the vehicle. The prime contractor is responsible for ensuring that all subcontractors comply with this requirement. This document shall be presented on official company letterhead.

2.1.1.1.1 Operator's manual. The operator's manual shall include all information required for the safe and efficient operation of the vehicle, including the fire extinguishing equipment, and any special attachments or auxiliary equipment. The operator's manual shall include at least the following:

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- a. Location and function of all controls and instruments shall be illustrated and fully described.
- b. Safety information that is consistent with the safety standards established by the Occupational Safety and Health Administration (OSHA).
- c. Checks and adjustments in preparation for placing the vehicle in service upon receipt from the contractor.
- d. Preparation for shipment or storage.
- e. Warranty information and period of the warranty for the complete vehicle and for any component warranty that exceeds the warranty of the complete vehicle. Addresses and telephone numbers shall be provided for all warranty providers.
- f. General description of and step-by-step instructions for the operation of the vehicle and its fire extinguishing system(s) and auxiliary equipment.
- g. Description of the post-operational procedures (draining, flushing, et cetera).
- h. Checklists for the daily maintenance inspection and mission readiness checks that the operator is expected to perform, including basic troubleshooting procedures.
- i. Procedures for towing a disabled vehicle.
- j. Procedures for changing a tire.
- k. Schedules for required preventative maintenance and required periodic maintenance.
- l. A line art drawing and solid models of the vehicle, including front, rear, left, and right side views, showing basic dimensions and weights (total vehicle and individual axle weight for the unloaded and fully loaded vehicle).

2.1.1.1.2 Service manual. The service manual shall identify any special tools and test equipment required and shall cover troubleshooting and maintenance as well as minor and major repair procedures. The text shall contain performance specifications, tolerances, and fluid capacities; current, voltage, and resistance data; test procedures; and such illustrations, solid models and exploded views as may be required to permit proper maintenance by qualified mechanics. The manual shall contain an alphabetical subject index as well as a table of contents. The service manual shall contain at least the following, where applicable:

- a. Fire fighting system schematic(s).
- b. Hydraulic schematic.
- c. Pneumatic schematic.

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- d. Electrical schematic.
- e. Winterization schematic.
- f. Fuel schematic.
- g. Schedules for required preventative maintenance and required periodic maintenance.
- h. Location, procedure, and interval for parts of the truck and equipment that require lubrication.

2.1.1.1.3 Parts manual. The parts manual shall include illustrations, solid models and exploded views, as needed, to properly identify all parts, assemblies, subassemblies, and special equipment. All components of assemblies shown in illustrations or exploded views shall be identified by reference numbers that correspond to the reference numbers in the parts lists. All purchased parts shall be cross-referenced with the original manufacturer's name and part number. The parts identification manual shall provide the description and quantity of each item used per vehicle. The size, thread dimensions, torque specifications, and special characteristics shall be provided for all nonstandard nuts, bolts, screws, washers, grease fittings, and similar items. The manual shall contain a numerical index. The parts manual shall contain a list of all of the component vendor names, addresses, and telephone numbers referenced in the parts list.

2.1.2 Painting, plating, and corrosion control.

2.1.2.1 Finish. Exterior surfaces shall be prepared, primed, and painted with polyurethane paint in accordance with all of the paint manufacturer's instructions and recommendations. Unless otherwise specified (see 6.2), the exterior finish color shall be Candy Apple Red, Sikkens Color Number FLNA3021, DuPont Color Number 97902U or 4737U, PPG Color Number 71528 (the PPG name for this color is Cardinal Red), or equal. When specified, the exterior finish color shall be Desert Sand, Color Number 30313 of FED-STD-595. The interior of all compartments shall be painted with an impact resistant, textured coating that resists stains, scuffs, chips, and scratches.

a. For vehicles painted Candy Apple Red, the cab upper body (from the bottom of the windshield) and roof shall be painted White, Color Number 17875 of FED-STD-595. All bright metal and anodized parts, such as mirrors, horns, light bezels, treadplate, and roll-up compartment doors, shall not be painted. Compartment interiors shall be Gray.

b. For vehicles painted Desert Sand, all exterior surfaces, excluding all normally bright metal and anodized parts, shall be painted body color. All interior surfaces visible with any compartment door open, excluding the interior of the cab, shall also be painted body color. This includes compartment shelves and mounting hardware, but does not include items mounted in the compartments. Non-metallic materials may be black or gray.

2.1.2.2 Dissimilar metals. Dissimilar metals, as defined in MIL-STD-889, shall not be in contact

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with each other. Metal plating or metal spraying of dissimilar base metals to provide electromotively compatible abutting surfaces is acceptable. The use of dissimilar metals separated by insulating material is permitted, except in systems where bridging of insulation materials by an electrically conductive fluid can occur. Sealants or gel type gasket materials shall be used between faying surfaces and butt joints.

2.1.2.3 Protective coatings. Materials that deteriorate when exposed to sunlight, weather, or operational conditions normally encountered during service shall not be used or shall have a means of protection against such deterioration that does not prevent compliance with performance requirements. Protective coatings that chip, crack, or scale with age or extremes of climatic conditions or when exposed to heat shall not be used. Surface preparation and pretreatment shall be in accordance with the respective primer and topcoat specifications. Structures shall be cleaned, degreased and scuffed or blasted prior to priming; primer shall be applied before any oxidation or rusting occurs. Topcoat shall be applied to a dry film thickness of 1.6 to 2.4 mils in all instances, regardless of the primer system utilized. The coating shall be free from runs, sags, orange peel, or other defects.

2.1.2.4 Sound suppression material. Sound absorbing and suppression material shall be of the non-moisture absorbing type, so that condensation and rain water are not absorbed and held adjacent to metal structure and panels. Fiberglass, felt, and open cell foam shall not be used for sound suppression.

2.1.2.5 Exclusion of water. The design of the system shall be such as to prevent water leaking into, or being driven into, any part of the system interior when either in an operating or traveling configuration. All windows, doors, panels, covers, etc., shall be provided with sealing arrangements such that the entry of water is minimized when these items are correctly closed. Particular care shall be taken to prevent wetting of equipment, heat, and sound proofing materials. Sharp corners and recesses should be avoided so that moisture and solid matter cannot accumulate to initiate localized attack. Sealed floors with drainage shall be provided for storage compartments, engine compartments, and other areas in the design that could collect and retain water.

2.1.2.5.1 Fluid traps and faying surfaces. There shall be no fluid traps on the item. Faying surfaces of all structural joints, except welded joints, shall be sealed to preclude fluid intrusion.

2.1.2.5.2 Ventilation. Ventilation shall be sufficient to prevent moisture retention and buildup.

2.1.2.5.3 Drainage. Drain holes shall be provided to prevent collection or entrapment of water or other unwanted fluid in areas where exclusion is impractical. All designs shall include considerations for the prevention of water or fluid entrapment and ensure that drain holes are located to effect maximum drainage of accumulated fluids. The number and location of drain holes shall be sufficient to permit drainage of all fluids when the unit is in a 10° incline in any plane. The minimum size of the drain holes shall be 0.25 inch.

2.1.2.6 Reflective stripes. Vehicles shall be uniformly marked with reflective striping to comply with the surface area of coverage as prescribed by 4.12 of National Fire Protection Association

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(NFPA) Standard 414, Aircraft Rescue and Fire Fighting Vehicles. Perimeter horizontal striping will be located below the body centerline, covering at least 60 percent of the length (or as space permits) of each facing surface (length or width). Bright metal trim or anodized parts may interrupt the reflective stripes. The pattern shall be a 7-inch pattern: 1-inch stripe, 1-inch body color, 3-inch stripe, 1-inch body color, 1-inch stripe (1-3-1). The reflective stripes shall be white for vehicles painted Candy Apple Red and Desert Sand.

2.1.2.7 Lettering. Vehicles painted Candy Apple Red shall have the letters "UNITED STATES" and "AIR FORCE" applied in synthetic or encapsulated gold leaf, with outline and black shadow, on the front door on both sides in long radius elliptical arches above and below the lettering center line. The size of the lettering shall be a minimum of 2½-inches to a maximum of 6-inches. Vehicles painted Desert Sand shall not have lettering.

2.1.3 Identification plate. A permanently marked identification plate shall be securely mounted at the driver's compartment. The identification plate shall contain the following information:

- a. NOMENCLATURE
- b. MANUFACTURER'S MAKE AND MODEL
- c. MANUFACTURER'S SERIAL NUMBER
- d. REGISTRATION NUMBER
- e. NATIONAL STOCK NUMBER (NSN)
- f. VEHICLE CURB WEIGHT: kg (pounds)
- g. PAYLOAD, MAXIMUM: kg (pounds)
- h. GROSS VEHICLE WEIGHT (GVW): kg (pounds)
- i. FUEL CAPACITY AND TYPE: gal (gallons) / L (liters)
- j. DATE OF DELIVERY (month and year)
- k. WARRANTY (months and km / miles)
- l. CONTRACT NUMBER
- m. PAINT COLOR AND NUMBER
- n. VEHICLE LENGTH, WIDTH AND HEIGHT (in / cm).

2.1.3.1 Secondary Identification Plate. A second permanently marked information data plate shall be securely mounted on the interior of the driver's compartment door. The plate shall contain the information required by 1.3.5 of NFPA 414.

2.1.3.2 Combined Identification Plate. A single plate that combines or contains the information required for both plates is acceptable.

2.1.4 Environmental conditions.

2.1.4.1 Temperature range. The vehicle shall be capable of satisfactory storage and operation in temperatures ranging from 0°F to 110°F. The vehicle shall be equipped with a cab, chassis, and agent winterization system, permitting operation at 0°F. Operation of the system shall be automatic anytime the cab heater is on. The winterization system shall not detract from the

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performance of the vehicle or the firefighting system in ambient temperatures up to 110°F. The vehicle chassis winterization system shall maintain the engine coolant, lubricants, fuel, and electrical systems operational at ambient temperatures of 0°F. The vehicle agent winterization system shall provide sufficient insulation and heating capacity, by means of hot circulating liquids and forced air heat exchangers, to permit satisfactory operation of the vehicle and firefighting systems for a 2-hour period at ambient temperatures as low as 0°F with the vehicle fully operational and the engine running. At the end of this 2-hour period, the vehicle shall be capable of successfully discharging its agents.

2.1.5 Foreign object damage. All loose metal parts, such as pins and intake/discharge valve caps, shall be securely attached to the vehicle with wire ropes or chains. "Dog tag" style beaded chains shall not be provided. Removable panels, if provided, shall be attached with captive fasteners. Tire valve stem caps shall be made of plastic.

2.1.6 Mobility.

2.1.6.1 Operating terrain. The vehicle shall operate on paved roads, graded gravel roads, and off road (cross country) terrain. Cross country terrain shall consist of open fields, broken ground, and uneven terrain.

2.1.6.2 Gradeability. The fully loaded vehicle shall be able to ascend any paved slope up to and including 50-percent.

2.1.6.3 Side slope stability. The fully loaded vehicle shall be stable on a 30 degree side slope when tested in accordance with 4.1 of NFPA 414. A slip/trip rail, with a maximum height of 2 inches, may be used. If an adjustable height suspension system is provided, the suspension system may be set to the height normally used on hard pavement.

2.1.6.4 Cornering stability. The fully loaded vehicle shall be stable in accordance with 6.3.2 of NFPA 414 when tested in accordance with 6.3.2 of NFPA 414.

3.2 Weights and dimensions.

2.2.1 Overall dimensions. Overall dimensions shall be the minimum consistent with the operational performance and the design constraints necessary to achieve the specified performance. Overall dimensions shall not exceed:

Length (inches)	340
Width (inches, excluding mirrors)	96
Height (inches)	110

2.2.2 Angles of approach and departure. The fully loaded vehicle shall have an angle of approach and departure of not less than 30°.

3.2.3 Field of vision. The vehicle shall have a field of vision in accordance with 6.3.4 of NFPA

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414.

3.2.3.1 Mirrors. Combination flat and convex outside rearview mirrors shall be installed on each side of the cab. The flat mirrors shall be of the motorized remote control type, providing not less than 60° horizontal rotational viewing range. The flat mirrors shall also have electrically heated heads. Mirror remote and heating controls shall be located on the instrument panel within reach of the seated driver.

2.3 Chassis and vehicle components.

2.3.1 Engine. The vehicle shall have a turbocharged diesel engine that is certified to comply with the Environmental Protection Agency (EPA) on- or off-highway emission requirements at the time of manufacture. An engine block heater shall be provided.

2.3.1.1 High idle switch. A high idle switch, which does not increase engine speed more than 25-percent above normal low idle speed and does not exceed the engine manufacturer's recommendation, may be provided to increase alternator, air compressor, or air conditioning compressor output to meet the maximum load requirements. A lighted rocker or toggle switch, accessible from the driver's seated position, shall activate the high idle control unit. The high idle switch shall operate only when the vehicle is out of gear and the parking brake is engaged. The high idle control unit shall automatically disengage if the transmission is placed in gear, the parking brake is released, or the fire pump is engaged. The high idle control unit shall not engage automatically; the high idle control unit shall only engage when the high idle switch is in the "ON" position.

2.3.1.2 Acceleration. The fully loaded vehicle shall accelerate from 0 to 50 miles per hour (mph) within 30 seconds on a level, paved road.

2.3.1.3 Maximum speed. The fully loaded vehicle shall attain a minimum top speed of 70 mph on a level, paved road.

2.3.1.4 Pump and roll on a 40-percent grade. The fully loaded vehicle shall be capable of pump and roll operations independent of the vehicle speed on a paved, dry, 40-percent grade in accordance with 6.3.6 of NFPA 414.

2.3.2 Engine cooling system. The engine cooling system shall be in accordance with 4.3 of NFPA 414. Silicone radiator and heater hoses, constant-torque clamps, and a coolant filter shall be provided. A label shall be installed near the coolant reservoir reading "Coolant Fill."

2.3.3 Fuel system. The fuel system shall be in accordance with 4.3.3 NFPA 414.

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2.3.3.1 Fuel filters. Primary and secondary fuel filters and a heated fuel/water separator shall be provided. The fuel/water separator shall include a water coalescer and a drain valve that is readily accessible by an operator or a mechanic and shall be in accordance with SAE J1839. A combination fuel filter and fuel/water separator may be provided. Fuel filter elements shall be easily replaceable by a mechanic without loss of engine prime.

2.3.3.2 Fuel tank. The vehicle shall have one or two fuel tanks with a minimum usable capacity in accordance with 4.3.3 of NFPA 414. Each tank shall have a fill opening, readily accessible to personnel standing on the ground, and designed to prevent fuel splash while refueling. Each tank shall be located and mounted so as to provide maximum protection from damage, exhaust heat, and ground fires. If more than one tank is furnished, a means shall be provided to assure equalized fuel levels in both tanks. An overturn fuel valve shall be provided for each tank to prevent spillage in the event of a rollover. Each tank shall be prominently labeled with the type of fuel required "Diesel Fuel, or Ultra Low Sulfur Diesel."

2.3.4 Exhaust system. The exhaust system shall be in accordance with 4.3.4 of NFPA 414. The exhaust system shall be constructed of stainless steel. The muffler(s) shall be constructed of aluminized steel or stainless steel. All components of exhaust systems including clamps, weather stops, bolts, nuts, fasteners, and specially designed components not constructed of a corrosion resistant stainless steel alloy shall require the application of a corrosion resistant finishing system. Exhaust system outlet(s) shall be directed upward or to the rear, away from personnel accessing equipment compartments, the engine air intake, and shall not be directed toward the ground. The design of the exhaust system outlet(s) shall preclude the entry of rain.

2.3.5 Transmission. A fully automatic transmission with a hydraulic torque converter and at least five forward speeds shall be provided. The normal driving range selector position shall provide at least four gear ratios without movement of the selector. The transmission shall be in accordance with 4.5 of NFPA 414. The transmission shall include an oil cooling system capable of limiting the transmission temperature to the maximum recommended by the transmission manufacturer.

2.3.6 Driveline. The vehicle driveline shall be in accordance with 4.5 of NFPA 414. If the driveline is equipped with a differential locking control, a warning/caution label shall be placed in view of the driver indicating the proper differential locking/unlocking procedures. The operator's manual shall also include a similar warning/caution.

2.3.7 Axle capacity. Each axle shall have a rated capacity, as established by the axle manufacturer, in accordance with 4.5.7 of NFPA 414. For the purposes of this buy, 4.2.1.2.2 of NFPA 414 does not apply to Class 1, 2, or 3 ARFF vehicles. The minimum Gross Vehicle Weight Rating (GVWR) shall be 19,500 lbs.

2.3.8 Suspension. The suspension system shall be in accordance with 4.6 of NFPA 414.

2.3.9 Tires and wheels. Tires and wheels shall be in accordance with 4.7 of NFPA 414. The vehicle shall be equipped with single tires on the front axle and dual tires on the rear axle. The vehicle shall be equipped with tubeless steel belted radial tires with non-directional on/off-road

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type tread mounted on disc wheel assemblies. Tires and wheels shall be certified for not less than 25 miles of continuous operation at 60 mph at the normal operational inflation pressure. If all tire and wheel assemblies are identical, one spare tire and wheel assembly shall be provided. If two different tire and wheel assemblies are provided, two spare tires and wheel assemblies shall be provided, one of each configuration. Spare tires and wheels are not required to be mounted on the vehicle. Tires shall be new. Retreads, recaps, or re-grooved tires shall not be permitted. A Central Tire Inflation System (CTIS) shall not be provided.

2.3.10 Towing connections. The vehicle shall be equipped with towing connections in accordance with 4.8 of NFPA 414. The vehicle shall be designed for flat towing; the capability to lift and tow the vehicle is not required.

2.3.11 Brake system. The vehicle shall be equipped with hydraulic four-wheel disc brakes with an all-wheel antilock brake system in accordance with 4.9 of NFPA 414.

2.3.12 Steering. The vehicle shall be equipped with power steering.

2.3.12.1 Steering effort. The steering system performance shall be in accordance with 4.10 of NFPA 414.

2.3.12.2 Turning diameter. The fully loaded vehicle shall have a wall-to-wall turning diameter of less than three times the overall length of the vehicle in both directions.

2.3.13 License plate bracket. A lighted license plate bracket shall be provided at the left rear of the vehicle.

2.3.14 Fenders. Rear fenders and fender liners having tire chain clearance shall be provided.

2.4 Cab. The vehicle shall have a non-tilting cab for at least three persons with two passenger doors and two access doors. At least one grab handle shall be provided for each crew member, located inside the cab for use while the vehicle is in motion. The lowermost step(s) shall be no more than 22 inches above level ground when the vehicle is fully loaded. A tilt steering column shall be provided.

2.4.1 Windshield and windows. The windshield and windows shall be of tinted safety glass. Each door window shall be capable of being opened far enough to facilitate emergency occupant escape in the event of a vehicle accident.

2.4.2 Cab interior sound level. The maximum cab interior sound level shall be in accordance with 6.3.34 of NFPA 414.

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2.4.3 Instruments and controls. All instruments and controls shall be illuminated. Gauges shall be provided for oil pressure, coolant temperature, and automatic transmission temperature. All switches and/or controls that activate systems or system components shall be labeled as to their function. In addition to the instruments and controls required by NFPA 414, the following shall be provided within convenient reach of the seated driver:

- a. Master warning light control switch.
- b. Work light switch(es).
- c. Compartment "Door Open" warning light and intermittent alarm that sounds when a-compartment door is open and the parking brakes are released or the transmission is in any position other than neutral.
- d. Pumping system controls that include pump instrument panel switch, pump engine start, digital pressure gauge, pump engine warning lights, throttle, water/foam discharge, dry chemical discharge, water level gauge and foam level gauge.

2.4.4 Climate control system. The offeror/contractor's standard heater/defroster and air conditioning system shall be provided. In 100°F ambient temperature and at maximum compressor speed, the air conditioning system shall cool the fully occupied cab to 75°F within 30 minutes. The climate control system shall induct at least 60 cubic feet per minute of fresh air into the cab. At least four adjustable panel louvers shall be provided, approximately evenly spaced across the width of the cab; each shall provide approximately equal flow. Cab mounted components shall be protected from inadvertent damage by personnel.

2.4.5 Seats. The driver's seat shall be adjustable fore and aft and for height. The two crew member seats shall be fixed (non-suspension) type seats. Only the turret operator's seat located on the right front side of the cab shall be provided with a backrest and a bracket designed to store a 1-hour capacity self-contained breathing apparatus (SCBA) in accordance with NFPA 1901. The second crew member's seat will be located in the rear of the cab and accessed through the access doors. Each seat shall be provided with a Type 2 seat belt assembly (i.e., 3-point restraint) in accordance with Code of Federal Regulations (CFR) 49 CFR 571.209. A seat belt which is an integral part of the seat with no remote mounting point is preferred.

2.4.6 Windshield wipers and washer. The vehicle shall be equipped with electrically powered windshield wipers. The wiper arms and blades shall be of sufficient length to clear the windshield area described by SAE J198. Individual wiper controls shall include a minimum of two speed settings and an intermittent setting. The wiper blades shall automatically return to a park position, out of the line of vision. The vehicle shall be equipped with a powered windshield washer system, including an electric fluid pump, a minimum one gallon fluid container, washer nozzles mounted to the wiper arms (wet arms), and a momentary switch.

2.4.7 Warning signs. Signs that state "Occupants must be seated and wearing a seat belt when apparatus is in motion" shall be provided in locations that are visible from each seated position in

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accordance with 4.11.16 of NFPA 414.

2.5 Body, compartments, and equipment mounting.

2.5.1 Body. The vehicle shall have an all aluminum or all stainless steel body.

2.5.2 Compartments. The vehicle body shall have lighted compartments in accordance with 4.12 of NFPA 414. The storage space shall be maximized to ensure sufficient space is provided to transport/store firefighting and personal protective equipment as referenced in A.4.2.1 of NFPA 414, excluding items (1), (6) and (10).

2.5.2.1 Compartment doors. Storage compartments shall have clear anodized aluminum, counterbalanced, non-locking, roll-up doors. Door latch handles shall be full-width bar type. Door straps shall be provided to assist in closing the compartment doors when the rolled up door height exceeds 6 feet above the ground.

2.5.2.2 Scuffplates. Replaceable scuffplates shall be provided at each compartment threshold to prevent body damage from sliding equipment in and out of the compartments. The scuffplates shall be securely attached to the compartment threshold but shall be easily replaceable in the event of damage.

2.5.2.3 Drip rails. Drip rails shall be provided over each compartment door. If the drip rails are not integral with the body, they shall be of anodized extruded aluminum and shall have a bright finish for vehicles painted Candy Apple Red.

2.5.2.4 Shelves. An adjustable and removable compartment shelf shall be provided for every 18 inches of each vertical storage compartment door opening. Shelving adjustments shall require no more than common hand tools, and shall not require disassembly of fasteners. Shelves shall support a minimum of 200 pounds without permanent deformation. Each shelf shall be accessible to crew members standing on the ground or using a pull out and tip-down configuration for shelving over 54 inches from the ground. Access to any shelf over 54 inches from the ground shall be facilitated by the installation of a pull-out step and grab rail. Each shelf shall have drain holes located so as to allow for drainage of any water from the stowed equipment.

2.5.2.5 Drainage mats. Each compartment floor and shelf shall be covered with a removable black mat designed to allow for drainage of any water from the stowed equipment.

2.5.3 SCBA storage tubes. Tubes for storage of three 1-hour SCBA bottles shall be provided on the vehicle. The tubes shall be in accordance with NFPA 1901. The tubes shall be of sufficient size to accommodate any commercially available 1-hour SCBA cylinder and valve head.

2.5.4 Ladder, handrails, and walkways. Ladders, stepping, standing, and walking surfaces shall be in accordance with 4.12 of NFPA 414. The lowermost step(s) or ladder rungs shall be no more than 22 inches above level ground when the vehicle is fully loaded. A tubular style running board or custom step shall be provided at each vehicle door location (4).

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2.6 Agent system. The truck shall have one UHP firefighting system. The truck shall have one front mounted bumper turret and two UHP handlines.

2.6.1 Agent pump. The vehicle shall be equipped with an agent delivery fire pump system that is capable of delivering a minimum of 60 (with a maximum of 100) gpm water/foam solution at an UHP of 1100-1500 psi at the bumper turret nozzle and 15 gpm at 1100-1500 psi at the UHP handline nozzles. The agent delivery fire pump system shall have measures in place to prevent relieving foam onto the ground. The UHP pump shall be equipped with a low pressure switch in the pump inlet to shut down operation in the event loss of suction pressure, if such a situation will result in damage to the pump. The agent delivery fire pump system shall discharge at full flow within 1.5 seconds of actuation. The pump shall have a cast iron body, bronze impeller and a stainless steel shaft. The pump and gear box shall have a cooling system that allows the pump to be continuously operated if attached to an alternate water source. The agent pump shall have the capability to provide agent to the bumper turret and handlines simultaneously. The vehicle shall have a pump and roll capability independent of the vehicle speed with simultaneous operation of the bumper turret and handlines. Provisions shall be made so that the bumper turret and/or handlines can be activated or deactivated independent of one another.

2.6.1.1 Agent system piping. All metallic surfaces of the piping and associated components that come into contact with the agent shall be of brass, bronze, or passivated stainless steel. A flushing system shall be provided to purge all of the piping and associated components with clear water.

2.6.1.2 Tank to pump connection. A check valve and shutoff valve shall be provided in each tank to pump line.

2.6.1.3 Intake connections. The vehicle shall be equipped with one valved 2½-inch suction intake connection. The inlet shall be capable of drafting or operating from a hydrant source located on the left driver's side structural panel. The 2½-inch intake connection shall have rocker lug female National Hose threads, a quarter-turn control valve, a bleeder valve, a strainer, and a plug in accordance with NFPA 1901.

2.6.1.4 Discharge connections. All agents shall be delivered to bumper turret and pre-connected handlines.

2.6.1.5 Piping, couplings, and valves. The agent system piping shall incorporate groove type couplings to the maximum practical extent. All piping sections between agent system components shall be readily removable without disturbing the components.

2.6.1.6 Overheat protection. The agent system shall be equipped with an overheat protection system in accordance with 4.14 of NFPA 414.

2.6.1.7 Pressure relief valves. The agent system shall be equipped with pressure relief valves in accordance with 4.14 of NFPA 414.

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2.6.1.8 Drains. The agent system shall be equipped with a drainage system in accordance with 4.14 of NFPA 414.

2.6.1.9 Priming pump. The vehicle shall be equipped with a priming pump in accordance with 12.2.5 of NFPA 1901, or a manufacturer supplied remote portable priming/transfer pump capable of filling the tank from 20 feet away shall be provided. If a transfer pump is provided, it shall be securely carried on the vehicle in a compartment.

2.6.2 Water tank. The vehicle shall have a baffled water tank with a manufacturer certified minimum capacity of at least 400 gallons. The tank shall store water only. Premix agent tanks are not acceptable. .

2.6.2.1 Water tank construction. The water tank shall be constructed of polypropylene. All materials used shall be capable of storing water, foam concentrate, and water/foam solutions.

2.6.2.2 Water tank drain. The water tank shall incorporate a drain and drain valve. The valve shall be on the left side of the vehicle and controlled by a crew member standing on the ground. The drain line shall be 2-inch internal diameter (ID) minimum. The point for discharge for the water tank drain shall be below the under body panels.

2.6.2.3 Water tank overflow system and venting. The water tank shall incorporate a vent system to relieve pressure on the tank during fill and discharge operations at maximum flow rates and an overflow system to relieve excess liquid in the event of tank overflow. The vent and overflow system shall prevent leakage of water when the tank is filled to capacity and the vehicle is operating on the maximum side slopes and grades specified herein. Drainage from the vent and overflow system shall not flow over body panels or other vehicle components and shall not be in the track of any of the tires. Tank vent hoses shall be of the non-collapsible type.

2.6.2.4 Water tank top fill opening. A top fill opening of not less than 8 inches internal diameter with a readily removable ¼-inch mesh strainer shall be provided. The fill opening may be incorporated as part of the manhole cover, and shall be sized to accommodate a 2½-inch fill hose.

2.6.2.5 Water tank fill connection. The water tank shall incorporate a 2½-inch rocker lug female National Hose thread connection on the left side of the vehicle. The connection shall be fitted with a 30° turn-down fitting. The water fill shall allow external re-supply of the water tank during discharge pumping operations. The tank fill connection shall be in accordance with 4.15.3 of NFPA 414.

2.6.3 Foam system.

2.6.3.1 Foam concentrate tank. The foam concentrate tank(s) shall have a working capacity sufficient for two tanks of water at the maximum tolerance specified in 4.16.1 of NFPA 412, *Standard for Evaluating Aircraft Rescue and Fire-Fighting Foam Equipment* for 6-percent foam concentrate (i.e., 7-percent). The vehicle shall have a foam tank with a manufacturer certified minimum capacity of at least 50 gallons. The tank shall store foam only. Premix agent tanks are

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not acceptable.

2.6.3.1.1 Foam tank construction. The foam tank shall be constructed of polypropylene. All materials used shall be capable of storing foam concentrate.

2.6.3.1.2 Foam tank drain. The foam tank shall incorporate a drain and drain valve. The valve shall be on the left side of the vehicle and controlled by a crew member standing on the ground. The drain line shall have a minimum 1½-inch ID. The foam tank drain outlet shall be located so that the contents of the tank can be drained into 5-gallon cans and 55-gallon drums.

2.6.3.1.3 Foam tank top fill trough. The foam tank shall incorporate a top fill trough mounted in the top of the tank readily accessible on top of the vehicle. The top fill trough shall incorporate a cover and latch, sealed so as to prevent spillage under any operating condition. The top fill trough neck shall extend sufficiently close to the bottom of the tank to reduce foaming to a minimum during the fill operation. The top fill trough shall incorporate readily removable, rigidly constructed 10 mesh stainless steel or brass strainers. All components in and around the top fill trough shall be constructed of materials that resist all forms of deterioration that could be caused by the foam concentrate or water.

2.6.3.2 Foam tank fill connections. The foam tank shall incorporate a 1½-inch National Hose thread female hose connection on the left side of the vehicle to permit filling by an external transfer hose at flow rates up to 75-gpm. The connection shall be provided with chained-on long handled plugs or rocker lug plugs. The top of the connection shall be no higher than 48 inches above the ground and readily accessible. The fill line shall incorporate check valves and readily removable, rigidly constructed ¼-inch mesh strainers. All components in the foam tank fill system shall be constructed of materials that resist all forms of deterioration that could be caused by the foam concentrate or water.

2.6.3.2.1 Foam tank vent and overflow system. The foam tank shall incorporate a vent system to relieve pressure on the tank during fill and discharge operations at maximum flow rates and an overflow system to relieve excess liquid in the event of tank overfill. The vent and overflow system shall prevent leakage of foam when the tank is filled to capacity and the vehicle is operating on the maximum side slopes and grades specified herein. Drainage from the vent and overflow system shall not flow over body panels or other vehicle components and shall not be in front of or behind any of the tires. Tank vent hoses shall be of the non-collapsible type.

2.6.3.3 Foam transfer pump. An electric motor driven self-priming, diaphragm pump shall be provided and mounted in a compartment on the vehicle. The pump shall be driven from the vehicle electrical or air system. The pump shall be capable of transferring and drawing foam liquid concentrate at adjustable flow rates up to 10-gpm directly through the pump and loading connection (see 2.6.3.2). All materials and components that come in contact with the foam shall be compatible with the foam concentrate. The pump and its plumbing shall have provisions for flushing with water from the water tank. The pump shall be removable as an assembly without disturbing other components. A length of hose with appropriate connections shall be provided for filling the foam tank from an external foam storage container located on the ground.

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2.6.3.4 Foam flushing system. The foam concentrate system shall be designed in accordance with 6.3.16 of NFPA 414 so that the system can be readily flushed with clear water.

2.6.3.5 Foam concentrate piping. All metallic surfaces of the piping and associated components that come into contact with the foam concentrate shall be of brass, bronze, or passivated stainless steel. The foam concentrate piping shall be in accordance with 4.14 of NFPA 414.

2.6.4 Foam proportioning system. The vehicle shall have an electronic "DIRECT INJECTION FOAM PROPORTIONING SYSTEM" for Aqueous Film-Forming Foam (AFFF). The UHP system shall automatically and uniformly proportion water and 3% foam concentrate within a minimum ratio of 3.5% to a maximum ratio of 7% foam concentrate to water by volume. The foam proportioning system shall not be configured in a manner as to routinely relieve excess foam flow onto the ground. The foam system shall be capable of relieving excess foam back to the foam tank prior to mixing with water.

2.6.5 Bumper turret. The vehicle shall be equipped with an agent delivery bumper turret in accordance with paragraph 4.18 of NFPA 414 and be capable of delivering ultra high pressure (UHP) water/foam solution (rated at 1100-1500 psi and 60 gpm). The bumper turret shall have a speed proportionally controlled joystick (in both horizontal and vertical motion) and also be provided with a manual override. It shall be capable of automatic oscillation, with an adjustable range of up to 80° each side of center. It shall be capable of horizontal movement with a range of up to 90° each side of center. It shall have a minimum depression of 30° and a maximum elevation of 75°. Discharge control and operation shall be within reach of the driver and the turret operator. The bumper turret shall not extend into the field of view for the driver or operator by more than 4 inches.

2.6.5.1 Ultra high pressure bumper turret nozzle. The UHP nozzle shall deliver a water/foam solution through a constant flow, 1500 psi rated nozzle that is capable of discharging 60 gpm of foam or water, with a pattern infinitely variable from straight stream to a fully dispersed pattern.

2.6.5.2 Bumper turret throw distance. The UHP nozzle shall produce a throw distance of at least 100 feet and a minimum expansion ratio of 6:1. The UHP bumper turret shall also maintain consistent pressure in fog pattern.

2.6.6 Handline Nozzles.

2.6.6.1 UHP handlines. Two 200 foot UHP handlines equipped with a hose rated at a minimum of 1500 psi (no larger than 1 inch diameter), along with a constant flow, 1500 psi rated pistol grip shutoff-type nozzle capable of both fog and straight stream patterns. The handline shall be capable of discharging 15 gpm of water/foam solution at 1100-1500 psi, maintain a minimum throw distance of 65 feet, and a minimum expansion ratio of 6:1. The UHP handline shall be designed in such a way that all components likely to be touched shall not exceed 100°F in temperature. Hose storage areas shall be fabricated from non-corrosive material and shall be designed to drain effectively.

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2.6.6.2 Hose reels and storage. The storage area shall be smooth and free from all projections that might damage the hose. No other equipment shall be mounted or located where it can obstruct the removal of the hose. The discharge control to each handline shall be adjacent to the handline and accessible to the person using the handline. All electrical components shall be sealed against entry of water. The hose reels shall have both electric and manual rewind provisions. The manual rewind handle shall be bracket mounted and stored in the compartment. A quick acting control to activate the handline from the cab of the vehicle shall be provided.

2.7 Structural panel. The vehicle shall be equipped with a secondary agent system structural control panel, on the forward most left side of the vehicle, operable while standing on the ground. The structural panel activation shall be interlocked to operate only with the vehicle parking brakes set and the transmission in neutral position. Controls and instruments shall be weatherproof and grouped by function. The control panel shall be hinged or accessible from the rear for maintenance. Instruments shall be lighted for night operation. The structural panel shall include, as a minimum, the following:

- a. Panel activation switch, including the panel lights.
- b. Manual engine throttle with micro adjustments, or may be pilot controlled by manually regulated agent system pressure.
- c. Engine tachometer.
- d. Engine oil pressure gauge with low pressure warning light.
- e. Engine coolant temperature gauge with high temperature warning light.
- f. Liquid filled pump suction gauge, -30 inches Hg vacuum to 600 psi.
- g. Liquid filled pump high pressure gauge, 0 to 2000 psi.
- h. Manually adjustable pump pressure, using either a relief valve with indicator lights, pilot controlled engine throttle, or an electronic pressure sensing governor.
- i. Foam or water selection switch.
- j. Primer pump control.
- k. Water and foam tank liquid level indicators.
- l. Hour meter indicating pump hours.

2.8 Electrical systems and warning devices. The vehicle shall have a 12-volt electrical and starting system.

2.8.1 Alternator. A single or dual alternator charging system in accordance with NFPA 1901

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shall be provided. The minimum continuous electrical load shall include operation of the air conditioning system.

2.8.2 Batteries. Batteries shall be of the maintenance-free type; addition of water shall not be required during normal service life. The battery cover and vent system shall be designed to prevent electrolyte loss during service and to keep the top of the battery free from electrolyte.

2.8.2.1 Battery compartment. The batteries shall be enclosed in a weatherproof box or compartment and be readily accessible. If the batteries are located in the engine compartment, a battery box shall not be required. . The battery compartment shall not be near the fuel tank or any other fuel or hydraulic system component.

2.8.3 Battery charger or conditioner. The vehicle shall have a DC taper type battery charger or an automatic battery conditioner, providing a minimum 12-amp output. The charger/conditioner shall be permanently mounted on the vehicle. The charger/conditioner shall be powered from the electrical shoreline receptacle (see 2.9.1). A charging indicator shall be installed next to the receptacle. When a battery conditioner is provided, the conditioner shall monitor the battery state of charge and, as necessary, automatically charge or maintain the batteries without gassing, depleting fluid level, overheating, or overcharging.

2.8.4 Electromagnetic interference. The vehicle electrical system shall be in accordance with SAE J551/2 for electromagnetic interference.

2.8.5 Work lighting.

2.8.5.1 Cab interior lights. Cab interior light levels shall be 2 foot candles. At least one red and one white cab interior dome light shall be provided.

2.8.5.2 Compartment lights. White lighting sufficient to provide an average minimum illumination of 1 foot-candle shall be provided in each compartment greater than 4 cubic feet and having an opening greater than 144 square inches. Where a shelf is provided, this illumination shall be provided both above and below the shelf. Lights shall automatically illuminate only when the respective door is opened and the vehicle electrical master switch is in the "on" position. Light switches shall be of the magnetic (non-mechanical) type. Non-glare engine compartment lights with switches located in the engine compartment, shall be arranged to illuminate both sides of the engine.

2.8.5.3 Ladder, step, walkway, and area lights. Non-glare white or amber lighting shall be provided at ladders and access steps where personnel work or climb during night operations. The step and ladder lights shall be controlled by a master switch located on the cab instrument panel as well as by marker light actuation. In addition, ground lighting in accordance with NFPA 1901 and one located under each rear corner of the vehicle shall be provided. The ground lights shall be controlled by a master switch located on the cab instrument panel as well as by switches on the cab doors.

2.8.5.4 Deck lights. Two (2) deck lights shall be installed on the top rear of the vehicle body,

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one (1) each side. Each individual deck light shall be controlled by a main power switch in the cab warning light switch console and by a switch mounted on each light.

2.8.5.5 Scene lights. A total of two 12-volt High Intensity Discharge (HID) high-mounted floodlights shall be provided to illuminate the work area at the rear of the vehicle: one on each rear corner of the vehicle. Each rear mounted light shall be controlled by a switch mounted at the light source and by a switch mounted on the instrument panel.

2.8.5.6 Telescoping HID lights. Two HID lights (one on each side) mounted on telescoping poles shall be installed on each side of the front corners of the rear box, behind the chassis. Poles shall rise to a maximum height of 12 feet above the ground.

2.8.5.7 Bumper turret spotlights. Two halogen spot/floodlights shall be attached at the end of the bumper turret assembly. The floodlights shall illuminate the area covered by the turret. The floodlights shall be switched from the cab instrument panel.

2.8.6 Audible warning devices.

2.8.6.1 Siren. The vehicle shall be equipped with an electronic siren system. The amplifier unit shall include volume control and selection of "Radio," "PA," "Manual," "Yelp," "Wail," and "Hi-Lo" (European) modes, and a magnetic noise canceling microphone. The amplifier, microphone, and controls shall be within reach of the driver and the turret operator. Siren activating foot switches shall be located in front of the driver and the turret operator. The siren speaker shall be rated at 100 watts minimum and shall be located in a guarded position as low and as far forward on the vehicle as practical.

2.8.7 Emergency warning lights. All emergency warning lights shall use light emitting diode (LED) elements. One LED light bar with two red and two clear LED modules shall be required. The two red modules shall be on the front corners of the light bar. The two clear modules shall be on the rear corners of the light bar. Two amber super LED lights mounted such that they are visible 360° around the vehicle. Two red warning lights (as a minimum or IAW NFPA standards) shall be provided on each side, one mounted as far forward and one mounted as far to the rear as possible. Two warning lights shall be provided and mounted on the grille and two mounted at the upper rear of the vehicle. Two warning lights shall be mounted on the rear of the vehicle, one each side beneath the scene lights. A switch shall be provided on the instrument panel to control all of the top, side, front, and rear emergency warning lights. A switch shall also be provided on the instrument panel to disable all lower emergency warning lights when desired. When specified (see 6.2), trucks shall be equipped with a steady red front warning light as required by California state law.

2.8.7.1 Emergency warning light color. Unless otherwise specified, all emergency warning lights shall be red. When specified (see 6.2), the rearward, red emergency warning lights shall be replaced with amber. When specified (see 6.2), all red emergency warning lights shall be replaced with blue lights.

2.8.7.2 Headlight flashing system. A high beam, alternating/flashing, headlight system shall be

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provided. The headlight flasher shall be separately switched from the warning light panel.

2.8.7.3 Radio circuit. The vehicle shall have two separate 30-amp circuits, with breakers and at least 6-foot long wires, routed to a space provided adjacent to the driver and turret operator for purchaser provided radios and other electrical equipment. The wiring shall be tagged indicating its purpose.

2.8.7.4 Auxiliary power receptacles. The vehicle shall have two 12-volt auxiliary power receptacles mounted adjacent to the driver and crew member positions, preferably in the instrument panel.

2.8.7.5 Clearance and marker lights. Clearance lights, marker lights, and reflectors shall be installed on the apparatus along the length and rear of the body. They shall be hermitically sealed cartridge lights for ease of service and durability.

2.9 Line voltage electrical system.

2.9.1 Electrical shoreline connection. The battery charger/conditioner shall be powered from a covered, three wire, straight blade, polarized, insulated, labeled, recessed, 120 volt, NEMA 5-15P male plug inlet, in a weatherproof AC auto-eject receptacle. It shall be located on the exterior of the vehicle, adjacent to the driver's side door. The shoreline connection's location shall not pose a tripping hazard to pedestrians walking by the vehicle when the shore line is connected. A 50 foot long, three wire, 15 amp rated, 120 volt, AC power cable, with straight blade (non twist-lock), NEMA 5-15R and 5-15P style, in accordance with NEMA WD-6, connectors, shall be provided. A weatherproof charge meter shall be installed next to the receptacle. A matching female receptacle shall be provided with the vehicle and placed in the glove box. When specified (see 6.2), the receptacle and power cable shall be for 220 volts in lieu of 110 volts.

2.10 Winch. A winch with at least 12,000 pound-pull capacity shall be installed, recessed behind the front bumper. The winch shall be electric or hydraulic powered and shall have one or more forward and reverse speeds of not less than 15 feet per minute. The winch shall be equipped with a minimum 125 feet of 3/8-inch galvanized aircraft cable, with 36 inch end chain and hook. The winch shall include a four way cable guide. A 10 foot minimum remote control cable shall be provided for operation of the winch. If an extended bumper is used, a cover fabricated of treadplate shall be installed over the winch and the space between the cab and bumper.

2.11 Workmanship. The vehicle, including all parts and accessories, shall be fabricated with quality workmanship as a priority. Particular attention shall be given to freedom from blemishes, burrs, defects, and sharp edges; accuracy of dimensions, radii of fillets, and marking of parts and assemblies; thoroughness of welding, brazing, soldering, riveting, and painting; alignment of parts; tightness of fasteners; et cetera. The vehicle shall be thoroughly cleaned of all foreign matter.

2.11 Warranty. The firefighting unit shall be cover by a minimum one year warranty after delivery. The chassis shall have a minimum 3 year/36,000 mile warranty. All polypropylene

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tanks shall be covered by a lifetime warranty.

2.12 Training. A minimum of two days of training shall be provided at the receiving base following delivery of the vehicle. Training shall consist of driver/operator training, and informational overview training for maintenance personnel.

3. REGULATORY REQUIREMENTS.

3.1 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with 23.403 of the Federal Acquisition Regulation (FAR). However, used, rebuilt, or refurbished items shall not be provided.

3.2 Green Procurement Program. Green Procurement Program (GPP) is a mandatory federal acquisition program that focuses on the purchase and use of environmentally preferable products and services. GPP requirements apply to all acquisitions using appropriated funds, including services and new requirements. FAR 23.404(b) applies and states the GPP requires 100% of EPA designated product purchase that are included in the Comprehensive Procurement Guidelines list that contains recovered materials, unless the item cannot be acquired: a) competitively within a reasonable timeframe; b) meet appropriate performance standards, or c) at a reasonable price. The prime contractor is responsible for ensuring that all subcontractors comply with this requirement.

4. PRODUCT CONFORMANCE PROVISIONS.

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First production inspection (see 4.2).
- b. Conformance inspection (see 4.3).

4.2 First production inspection. The first production vehicle shall be subjected to the examinations and tests described in 4.6.3.1 through 4.6.3.4 . The contractor shall provide or arrange for all test equipment and facilities.

4.3 Conformance inspection. Each production vehicle shall be subjected to the examinations and tests described in 4.6.3.1, 4.6.3.1.3, 4.6.3.1.5, 4.6.3.1.8, 4.6.3.1.9, 4.6.3.1.11, 4.6.3.1.12, and 4.6.3.3.1 through 4.6.3.4.

4.4 Product conformance. The products provided shall meet the salient characteristics of this PD, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The

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Government reserves the right to require proof of such conformance.

4.5 Commercial item requirement. The vehicle furnished shall comply with the "commercial item" definition of FAR 2.101 as of the date of award. The Government reserves the right to require the offeror/contractor to prove that their product complies with the referenced commerciality requirements and each salient characteristic of this CID. The offeror/contractor shall provide an itemized technical proposal that describes how the proposed model complies with each salient characteristic of this CID; a paragraph by paragraph response to the salient characteristics section of this CID shall be provided. The proposal shall be provided with the pricing submission. Failure to provide this information may deem a vendor as non-responsive and their proposal may be rejected. The offeror/contractor shall provide two copies of their commercial descriptive catalogs with their offer as supporting reference to the itemized technical proposal. The offeror/contractor shall identify all modifications made to their commercial model in order to comply with the requirements herein.

4.6 Inspection requirements.

4.6.1 General inspection requirements. Manufacturer test equipment used in conjunction with the inspections specified herein shall be laboratory precision type, calibrated at proper intervals, to ensure laboratory accuracy. Current calibration dates for the equipment used shall be provided.

4.6.2 Test rejection criteria. Throughout all tests specified herein, the vehicle shall be closely observed for the following conditions, which shall be cause for rejection:

- a. Failure to conform to design or performance requirements specified herein or in the contractor's technical proposal.
- b. Any spillage or leakage of any liquid, including fuel, coolant, lubricant, or hydraulic fluid, under any condition, except as allowed herein.
- c. Structural failure of any component, including permanent deformation, or evidence of impending failure.
- d. Evidence of excessive wear.
- e. Interference between the vehicle components or between the vehicle, the ground, and all required obstacles, with the exception of normal contact by the tires.
- f. Misalignment of components.
- g. Evidence of undesirable roadability characteristics, including instability in handling during cornering, braking, and while traversing all required terrain.
- h. Conditions that present a safety hazard to personnel during operation, servicing, or maintenance.

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- i. Overheating of the engine, transmission, or any other vehicle component.
- j. Evidence of corrosion.
- k. Failure of the firefighting system.

4.6.3 Detailed inspection requirements.

4.6.3.1 Examination of product. Each vehicle shall be examined to verify compliance with the requirements herein. A Government generated checklist that identifies each relevant requirement and the inspection results shall be used. Particular attention shall be given to materials, workmanship, dimensions, surface finishes, protective coatings and sealants and their application, welding, fastening, and markings. Proper operation of each vehicle function shall be verified. A copy of the vehicle manufacturer's certifications shall be provided with each vehicle in accordance with 1.3 of NFPA 414. Each production vehicle shall be inspected to a reduced version of the checklist.

4.6.3.1.1 Roadability test. The fully loaded first production vehicle shall be driven over ten miles of paved and ten miles of cross country terrain consisting of open fields, broken ground, and uneven terrain. All loads shall be removed and all structure and surfaces shall be visibly inspected for failure or permanent deformation.

4.6.3.1.2 Gradeability test. The first production vehicle shall be tested in accordance with 6.3.8 of NFPA 414 to demonstrate compliance with 2.1.6.2.

4.6.3.1.3 Tilt table test. The first production vehicle shall be tested in accordance with 6.4.1 of NFPA 414 to demonstrate compliance with 2.1.6.3. A slip/trip rail with a maximum height of 2-inches may be used. If an adjustable height suspension system is provided, the suspension system may be set to the height normally used on hard pavement.

4.6.3.1.4 Cornering stability test. The fully loaded first production vehicle shall be tested in accordance with 6.3.2 of NFPA 414 to demonstrate compliance with 2.1.6.4.

4.6.3.1.5 Weight and weight distribution measurement. Each vehicle shall be weighed in accordance 6.4.2 of NFPA 414 to demonstrate compliance with NFPA 414.

4.6.3.1.6 Dimension measurement. The first production vehicle shall be measured in accordance with 6.3.3 of NFPA 414. In addition to the dimensions listed in NFPA 414, the overall length, width, and height shall be measured to demonstrate compliance with 2.2.1.

4.6.3.1.7 Angles of approach and departure measurement. The angles of approach and departure of the fully loaded vehicle shall be measured to demonstrate compliance with 2.2.2.

4.6.3.1.8 Acceleration test. Each vehicle shall be tested in accordance with 6.4.3 of NFPA 414 to demonstrate compliance with 2.3.1.2. For the first production vehicle, a time-distance

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recorder shall be used to record data for this test.

4.6.3.1.9 Maximum speed test. Each vehicle shall be tested in accordance with 6.4.4 of NFPA 414 to demonstrate compliance with 2.3.1.3. For the first production vehicle, a time-distance recorder shall be used to record data for this test.

4.6.3.1.10 Pump and roll on a 40-percent grade test. The first production vehicle shall be tested in accordance with 6.3.5 of NFPA 414 to demonstrate compliance with 2.3.1.4.

4.6.3.1.11 Service brake system test. Each vehicle shall be tested in accordance with 6.3.10 of NFPA 414. For the first production vehicle, a time-distance recorder shall be used to record data for this test.

4.6.3.1.12 Turning diameter test. The fully loaded first production vehicle shall be tested in accordance with 6.3.13 of NFPA 414 to demonstrate compliance with 2.3.12.2.

4.6.3.2 Cab interior sound level test. The cab interior sound levels of the first production vehicle shall be measured in accordance with 6.3.34 of NFPA 414 to demonstrate compliance with 2.4.2.

4.6.3.3 Agent system tests.

4.6.3.3.1 Agent discharge pumping test. Each vehicle shall be tested in accordance with 6.4.7 of NFPA 414.

4.6.3.3.2 Pump and maneuver test. Each vehicle shall be tested in accordance with 6.4.9 of NFPA 414.

4.6.3.3.3 Hydrostatic pressure test. Each vehicle shall be tested in accordance with 6.4.10 of NFPA 414.

4.6.3.3.4 Priming device test. Each vehicle that is equipped with a priming pump shall be tested in accordance with 16.13.5 of NFPA 1901.

4.6.3.3.5 Agent tank capacity test. The first production vehicle shall be tested in accordance with 6.3.1 – 6.3.1.5 of NFPA 414 to demonstrate compliance with the capacity requirements of 2.6.2 and 2.6.3.1. A copy of the manufacturers' certification certificate will be provided for verification upon first production model testing.

4.6.3.3.6 Water tank fill and overflow test. The first production vehicle shall be tested in accordance with 6.3.15 of NFPA 414 to demonstrate compliance with 2.6.2.3.

4.6.3.3.7 Foam concentration test. Each vehicle shall be tested in accordance with 6.3.26 of NFPA 414 at the 3-percent concentration setting to demonstrate compliance with the foam concentration quality requirements of 2.6.4.

4.6.3.3.8 Bumper turret flow rate test. The first production vehicle shall be tested in accordance

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with 6.3.23 of NFPA 414 to demonstrate compliance with NFPA 414 as prescribed in paragraph 2.6.5.2. Each subsequent vehicle shall also be tested in accordance with NFPA 414 to demonstrate compliance with NFPA 414.

4.6.3.4 Electrical system tests.

4.6.3.4.1 Electrical charging system test. The first production vehicle shall be tested in accordance with 6.3.6 of NFPA 414.

4.6.3.4.2 Electromagnetic interference test. The first production vehicle shall be tested in accordance with B.7 of NFPA 414 to demonstrate compliance with 2.8.4.

5. PACKAGING.

5.1 Preservation, packing, and marking shall be in accordance with the contract or order.

6. NOTES.

6.1 Source of documents.

6.1.1 Department of Defense and Federal documents may be obtained at <http://assist.daps.dla.mil> or from the Document Automation and Production Service, Bldg 4D (DPM-DODSSP), 700 Robbins Avenue, Philadelphia PA 19111-5094.

6.1.2 The Code of Federal Regulations (CFR) may be obtained at <http://www.gpoaccess.gov/cfr/> or from the Superintendent of Documents, U.S. Government Printing Office, Washington DC 20402.

6.1.3 SAE documents may be obtained <http://www.sae.org/servlets/index> or from SAE, Inc., 400 Commonwealth Drive, Warrendale PA 15096.

6.1.4 NFPA documents may be obtained at <http://www.nfpa.org/index.asp> or from NFPA, Batterymarch Park, Quincy MA 02269-9101.

6.2 Ordering data. The contract or order should specify the following:

- a. Finish color required (Desert Sand in place of Candy Apple Red) (see 2.1.2.1). Note: Desert Sand only applies to vehicles slated for delivery to CENTAF locations.
- b. Emergency warning light color required (amber or blue in place of red) (see 2.8.7.1). Note: Amber lights may be required and selected based on applicable state laws. Note: The blue light option only applies to USAFE.
- c. If a steady red front warning light is required (see 2.8.7). (NOTE: Applies to deliveries in California only).

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d. Electrical shoreline voltage, 220 volts instead of 110 volts (see 2.9.1). Note: This option only applies to USAFE.

e. Engine fuel type (diesel fuel or ultra low sulfur diesel).

6.3 Key Words.

Flight Line Operations
Gallon per minute
Ultra High Pressure

Custodian:
Air Force - 84

Preparing activity:
Air Force - 84

Agent:
Air Force - 99

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NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil> .