INCH-POUND
A-A-58028D
23 SEP 2010
SUPERSEDING
A-A-58028C
27 May 2009

COMMERCIAL ITEM DESCRIPTION

TRUCK, FIRE FIGHTING, HAZARDOUS MATERIALS (HAZMAT) RESPONSE VEHICLE

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

1. SCOPE. This commercial item description (CID) covers a commercial hazardous materials (HazMat) truck. It has a 4x2 or a 4x4 chassis with a diesel engine and an automatic transmission; a cab with at least three doors which can accommodate at least four seated persons; and a utility body for equipment storage. The HazMat truck is intended to stow and transport hazardous materials response equipment for the purpose of mitigating chemical leaks, spills, and releases of hazardous substances in both on- and off-road environments. The HazMat truck is also intended to provide a hazardous materials incident command work station area for the purpose of research, command, control, and communications.

2. SALIENT CHARACTERISTICS. The hazardous materials truck shall be in accordance with the applicable requirements of the following chapters of National Fire Protection Association (NFPA) 1901, Standard for Automotive Fire Apparatus, Current Edition, for Special Service Fire Apparatus:

Chapter	Title
1	Administration
2	Referenced Publications
4	General Requirements
10	Special Service Fire Apparatus
12	Chassis and Vehicle Components
13	Low-Voltage Electrical Systems and Warning Devices
14	Driving and Crew Area
15	Body, Compartments, and Equipment Mounting
23	Line Voltage Electrical Systems
25	Air Systems

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: WR-ALC 542 CSW/CBSSS, 295 Byron Street, Robins AFB, GA 31098-1611. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at https://assist.daps.dla.mil/online .

FSC 4210

Chapter	Title
26	Winches

Unless otherwise specified (see 6.2), the vehicle shall have a 4x2 chassis. The 4x2 and 4x4 versions shall be identical except for the driveline differences and as otherwise specified herein.

2.1 Administration.

2.1.1 Environmental conditions.

2.1.1.1 Altitude. Unless otherwise specified (see 6.2), the vehicle shall be designed for operation at 2,000 feet above sea level.

2.1.1.2 Temperature range. The vehicle shall be capable of satisfactory storage and operation in temperatures ranging from 0° to 125° F. When specified (see 6.2), the vehicle shall be equipped with a winterization system that includes an engine coolant heater and a battery heater (a blanket type battery heater is not acceptable). The winterization system shall be powered through the electrical shoreline connection (see 2.6.2).

2.1.2 Foreign object damage. All loose metal parts, such as pins and 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.

2.1.3 Roadability.

2.1.3.1 Operating terrain. The vehicle shall operate on paved and graded gravel roads; the 4x4 version shall also operate on off-road (cross country) terrain.

2.1.3.2 Acceleration. The fully loaded vehicle shall accelerate from 0 to 50 miles per hour (mph) within 60 seconds on a level, paved road.

2.1.3.3 Maximum speed. The fully loaded vehicle shall attain a minimum top speed of 65 mph on a level, paved road.

2.1.3.4 Gradeability. The fully loaded vehicle shall be able to maintain a speed of at least 30 mph while ascending any paved slope up to and including 8.0 percent. The fully loaded 4x4 version shall also be able to maintain a speed of at least 5.0 mph while ascending any paved slope up to and including 30 percent.

2.1.4 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	390 inches
Width	100 inches (excluding mirrors)

Height 130 inches (4×4)

2.1.5 Turning diameter. The fully loaded vehicle shall have a wall to wall turning diameter of less than three times the length of the vehicle.

2.1.6 Angles of approach and departure. The fully loaded vehicle shall have angles of approach and departure of not less than 11°.

2.1.7 Vehicle Stability. Vehicle shall comply with roll over stability criteria as defined by NFPA 1901, paragraph 4.13.

2.1.8 Manuals.

2.1.8.1 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.

a. 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 to the procuring activity for verification 30 days before 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.

b. Once approved by the procuring activity, the contractor shall pack two complete sets of technical manuals with each vehicle. An additional two complete sets shall be submitted to the procuring activity for stock.

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 CDs with each vehicle and one complete set of both hard copy and CDs shall be submitted to the procuring activity for stock. The procuring activity's address will be provided.

d. The contractor shall grant the United States Air Force a non-exclusive, non-assignable, royalty free U.S. Government (Government) Purpose License, to scan into CENTRA (the USAF repository) and to reproduce and distribute (either electronically or via hard medium) copies or facsimiles of manuals produced and distributed by the contractor for this CID. These rights extend to Government agencies only, and the data contained in the technical manuals is not to be sold, disclosed or otherwise provided to any other entity or entities outside the Government. The license shall remain in effect as long as the vehicles described in the required technical manuals remain under Government control and usage. In addition, the contractor shall grant permission for the Government to place an Air Force TO (Technical Order) number and publication date as well as distribution, warning, handling and destruction statements on the cover / title pages of the TO.

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

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 for 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 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.

i. Procedures for towing the HazMat truck if it becomes disabled.

j. Schedules for required preventative maintenance and required periodic maintenance.

2.1.8.1.2 Service manuals. 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 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. Hydraulic schematic.

b. Pneumatic schematic.

c. Electrical schematic.

d. Winterization schematic.

e. Schedules for required preventative maintenance and required periodic maintenance.

f. Location, procedure, and interval for parts of the truck and equipment which require lubrication.

2.1.8.1.3 Parts manual. The parts manual shall include illustrations 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 which 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, length, dimensions, and quantity of each item used per vehicle. 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.

2.1.9 Painting, plating, and corrosion control.

2.1.9.1 Dissimilar metals. Dissimilar metals, as defined in MIL-STD-889, shall not be used in intimate contact with each other.

2.1.9.2 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.

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. Compartment interiors shall have a standard commercial finish. All bright metal and anodized parts, such as mirrors, horns, light bezels, and tread plates, shall not be painted. Roll-up compartment doors may be painted or unpainted.

b. For vehicles painted Desert Sand, all exterior surfaces, excluding all normally bright metal and anodized parts and any interior surfaces visible with any compartment door open (but not the interior of the cab), shall 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.

2.1.9.3 Reflective stripes. Vehicles shall be uniformly marked with reflective striping to comply with the surface area of coverage as prescribed by, and 15.9.3 of NFPA Standard 1901, Automotive Fire Apparatus. 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.

2.1.9.4 Chevron Striping. In accordance with 15.9.3.2 of NFPA 1901 at least 50 percent of the rear-facing vertical surfaces, visible from the rear of the apparatus, excluding any pump panel areas not covered by a door, shall be equipped with retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees. 3M part number 983-17 (red) and 983 -23 (florescent yellow/green) reflective diamond grade or equivalent shall be utilized. stripe in the chevron shall be a single color alternating between red and fluorescent yellow in accordance with 15.9.3.2.1. Each stripe shall be 6-inches (150 mm) in width in accordance with 15.9.3.2.2 of NFPA 1901 and the example provided below.

2.1.9.5 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.

2.1.10 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. USAF VEHICLE 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. LENGTH, WIDTH, AND HEIGHT OF VEHICLE IN INCHES AND CENTIMETERS.

2.2 Chassis and vehicle components.

2.2.1 Capacity. The vehicle shall have a payload capacity of 8,000 pounds of equipment and an additional allowance for two crew members and shall have a minimum Gross Vehicle Weight Rating (GVWR) of 34,500 pounds.

2.2.2 Engine. The truck shall have a diesel engine that is certified to comply with the Environmental Protection Agency (EPA) on-highway emission requirements at the time of manufacture. The engine shall run on Ultra Low Sulfur Diesel Fuel unless otherwise specified (see 6.2).

2.2.2.1 High idle switch. A high idle switch, which does not increase engine speed more than 100 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 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 and shall automatically disengage if the transmission is placed in gear or the parking brake is released.

2.2.2.2 Fuel filters. Primary and secondary fuel filters and a fuel/water separator shall be provided. The fuel/water separator shall include a water coalescer and a drain valve, and shall be in accordance with SAE J1839. A combination fuel filter and fuel/water separator may be provided. Fuel filter elements shall be replaceable without loss of engine prime.

2.2.3 Exhaust system. The exhaust system outlet(s) shall be directed away from personnel accessing equipment compartments, the roof access ladder, or the cab.

2.2.4 Brake system. The vehicle shall be equipped with an all-wheel antilock brake system; the brakes shall be fully air-actuated. Brakes shall be in accordance with Code of Federal Regulations (CFR) 49 CFR 393.40 through 393.42(b)), 393.43, and 393.43 through 393.52. The braking system complete with all necessary components shall include:

a. Air compressor having a capacity of not less than 15 standard cubic feet per minute (scfm).

b. Air storage reservoir(s), each tank equipped with drain, and with safety and check valves between the compressor and the reservoir tank.

c. Automatic moisture ejector on air storage reservoir.

d. Automatic slack adjusters on cam brakes or internal self-adjusting brakes on wedge and disc brakes on all axles.

e. Spring set parking brakes.

All components of the braking system shall be installed in such a manner as to provide adequate road clearance when traveling over uneven or rough terrain, including objects liable to strike and cause damage to the brake system components. No part of the braking system shall extend below the bottom of wheel rims, to ensure, in case of a flat tire, that the weight of the vehicle will be supported by the rim and the flat tire and not be imposed on any component of the braking system. Slack adjusters and air chambers shall be located above the bottom edge of the axle carrier.

2.2.4.1 Air dryer. A replaceable cartridge desiccant air dryer shall be installed in the air brake system. The dryer shall have the capability of removing not less than 95 percent of the moisture in the air being dried. The dryer shall have a pre-cooler and a filter to screen out oil and solid contaminants. The dryer shall have an automatic self-cleaning cycle and a thermostatically controlled heater to prevent icing of the purge valve.

2.2.4.2 Compressed air shoreline. A flush mounted, checked, auto-eject compressed air shoreline connection shall be provided to maintain brake system pressure while the vehicle is not running. It shall be located on the exterior of the vehicle, either adjacent to the driver's door or within 6 inches of the left side front corner of the body. An air chuck shall be provided as loose equipment.

2.2.4.3 Auxiliary braking system. The service brakes shall be augmented by one of the following auxiliary braking systems:

a. A system which opens all or some of the engine exhaust valves near the end of the compression stroke, thereby converting vehicle motion to a pumping loss. The engine brake shall be approved by the engine manufacturer.

b. A hydrodynamic retarder integral with the transmission.

A dash mounted switch shall be provided to activate, modulate, or cut out the brake augmentation. The switch shall be marked to indicate its position. When active, the system shall be fully controlled by means of the conventional driving controls to apply retardation during vehicle deceleration, and to cut it out in the other operating modes.

2.2.5 Tires and wheels.

2.2.5.1 4x2 version. The 4x2 version 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 radial tires with on/off-road type tread mounted on steel disc wheel assemblies. 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 tire and wheel assemblies shall be provided, one of each configuration. Spare tires and wheels are not required to be mounted on the vehicle. The assembly (mounted tire on rim) shall be shipped as loose equipment.

2.2.5.2 4x4 version. The 4x4 version 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 radial tires with on/off-road type tread mounted on steel disc wheel assemblies. Tire and wheel assemblies shall be identical at all positions. A spare tire and wheel assembly shall be provided; however, it is not required to be mounted on the vehicle. The spare tire(s) and rim(s) shall be inventoried, crated and shipped as loose equipment.

2.2.6 Tire chains. When specified (see 6.2), the 4x2 version shall be equipped with driver activated automatic type tire chains for the rear axle.

2.2.7 Fenders. Rear fenders and fender liners having tire chain clearance shall be provided. Chrome fender flairs shall be provided at all wheel locations.

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

2.2.9 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 net torque capacity and the net power rating of the transmission shall exceed the output ratings of the engine.

2.2.10 Traction control. The 4x2 version shall be equipped with a limited slip or automatic locking differential. The 4x4 version shall be equipped with limited slip, automatic locking, or driver controlled, air actuated, locking differentials in the rear axle and between the axles.

2.2.11 Fuel tank. Fuel tank(s) having a minimum usable capacity in accordance with 12.3.4 of NFPA 1901 or 50 gallons, whichever is greater, shall be provided. The location of the fuel tank(s) shall protect it (them) from mechanical damage during normal use of the vehicle.

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

2.3 Low-voltage electrical systems. The vehicle shall have a 12 volt electrical and starting system.

2.3.1 Alternator. A single alternator charging system in accordance with 13.3 of NFPA 1901 shall be provided. The minimum continuous electrical load shall include operation of the air conditioning system.

2.3.2 Batteries. Batteries shall be of the maintenance-free type. The addition of water shall not be required during the battery's 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.

2.3.2.1 Battery compartment. The batteries shall be mounted in an acid-resistant tray and shall be enclosed in a weatherproof box or compartment.

2.3.3 Battery charger or conditioner. The vehicle shall have a DC taper type battery charger or an automatic battery conditioner, providing a minimum 15 amp output. The charger/conditioner shall be permanently mounted on the vehicle in a properly ventilated, accessible location. The charger/conditioner shall be powered from the electrical shoreline receptacle (see 2.6.2). A charging indicator shall be installed next to the receptacle. When a battery conditioner is provided, it shall monitor the battery state of charge and, as necessary, automatically charge or maintain the batteries without gassing, depleting fluid level, overheating, or overcharging.

2.3.4 Warning lights. All warning lights shall use light emitting diode (LED) elements. The warning light system, related components, and devices shall be in accordance with 13.8 of NFPA 1901.

2.3.4.1 Light bar. A six element LED light bar, with both forward and side facing heads, shall be mounted on the cab roof. Forward facing lenses shall be red-white-red-red-white-red, with the white lights switched off in blocking right-of-way mode. Rearward facing lenses shall be red-amber-red-red-amber-red. The light bar shall be separately switched from the warning light panel. All trucks shall be equipped with a steady red front warning light as required by California state law regardless of shipping destination.

2.3.4.2 Warning light color. When specified (see 6.2), the rearward, red lights shall be replaced with amber. When specified (see 6.2), all red warning and lights shall be replaced with blue.

2.3.4.3 Headlight flashing system. A high beam, alternating/flashing, headlight system shall be provided. The headlight flasher shall be separately switched from the warning light panel.

2.3.5 Audible warning devices.

2.3.5.1 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 right front passenger. Siren activating foot switches shall be located in front of the driver and the right front passenger. The siren speaker shall be rated at 100 watts minimum and shall be located in a guarded position in the front bumper.

2.3.5.2 Horn. Dual forward facing air horns shall be installed in protected locations near the front of the truck. Air horn activating foot switches shall be located in front of the driver and the right front passenger.

2.3.6 Work lighting.

2.3.6.1 Cab interior lights. Cab interior light levels shall be a minimum of 2 foot-candles.

2.3.6.2 Compartment lights. White lighting sufficient to provide an average minimum illumination of 2.0 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 doors are opened.

2.3.6.3 Ladder, step, and area lights. Non-glare white lighting shall be provided at ladders and access steps where personnel work or climb during night operations. These area lights shall be controlled with switches on the cab instrument panel and near the light sources.

2.3.7 Scene lights. A total of 8 12-volt LED high-mounted floodlights shall be provided to illuminate the work areas around the tanker: two on each side, two at the rear, and two in the front. Individual switches shall be located in the work areas and on the instrument panel. A switch shall be provided to control the lights on the left side of the tanker, a second switch shall be provided to control the lights on the right side of the tanker, and a third switch shall be provided to control the lights at the rear of the tanker. A separate switch for the front lights shall be located on the instrument panel only. Three way switches shall be used.

2.3.8 Radio circuit. The vehicle shall have two separate 30 amp circuits, with breakers and wires routed to a space provided between the driver and crew chief for a purchaser provided radio. The radio circuit wires shall be tagged for easy identification.

2.3.9 Radio Antennas. An antenna mounting base with coaxial cable and waterproof cap shall be provided for 2 way radios. The mount shall be located on the cab roof to the rear of the front seats and will be clear of any obstructions. The cable shall be routed to the center console, length of the cable shall be determined at Post Award. Two shall be provided.

2.3.10 Auxiliary power outlet. The vehicle shall be equipped with one 12-volt, 15 amp, protectively, capped auxiliary power outlet near the passenger-seated position for portable electronic equipment. There shall also be one 12-volt, 15 amp, protectively capped auxiliary power outlet near each crew cab seated position.

2.3.11 Cellular phone circuits. The vehicle shall have two dedicated 12 volt, 15 amp circuits, with breakers and wires, routed, one each, to the work stations for the connection of cellular phones.

2.3.12 Work station light circuit. The vehicle shall have a dedicated, switched, 12 volt, 15 amp circuit, with breaker, connected to lights above each work station. The "ON"/"OFF" switch shall be placed at the central work station.

2.3.13 Work station power points. The vehicle shall have two dedicated 12 volt, 20 amp circuits, with breakers and wires, routed, one each, to the work stations. There shall be four 12-volt, 20 amp, power point connections at each work station.

2.4 Driving and crew areas.

2.4.1 Cab. The vehicle shall have a tilting or non-tilting cab with at least 3 doors for at least four persons. The cab shall be of all aluminum or all stainless steel construction. Aluminum thickness shall be at least 0.125 inches, except for door skins, which shall be at least 0.090 inches. Stainless steel thickness shall be at least 0.090 inches. The cab shall have a wrap-around windshield and a matching contour cab face. Cab door openings shall extend for the full vertical height of the side panels. Steps and handrails shall be provided for all crew doors, and at least one grab handle shall be provided for each crew member, located inside the cab for use while the vehicle is in motion. A vehicle data recorder shall be added in provided with 4.11 of NFPA 1901. Provisions must be made for fire helmet storage for all seated positions IAW 14.1.8 and 14.1.11 of NFPA 1901.

2.4.1.1 Command area. The command area shall have a raised roof with visibility to the sides. Floor to ceiling height in the rear crew compartment shall be not less than 70 inches clear. The cab rear crew area shall have an arrangement of two work stations. Each work station shall include: a writing surface with clear space above, book storage shelving, and a drawer shall be mounted below each workstation to accommodate administrative supplies. Also, a permanently mounted swivel seat with backrest shall be included in the command area.

2.4.1.2 Seats. The driver's seat shall be of an adjustable air suspension design. The crew member seats shall be of a non-suspension design. 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 except for the two command chairs if inboard mounted may include Type 1 seat belts in accordance with same CFR regulations. All seats shall be equipped with seat belt sensors in compliance with 14.1.3.10 of NFPA 1901. All seat belts shall be red in color.

2.4.1.3 Cab interior sound level. The maximum sound level at any seat location shall not exceed 80 dBA without any warning devices in operation, as measured in accordance with 49 CFR

393.94(c), "Vehicular interior noise levels test procedure," except that the test shall be performed with the vehicle traveling at a steady speed of 45 mph on a level, hard, smooth surface road.

2.4.1.4 Windshield and windows. The windshield and windows shall be of tinted safety glass in accordance with industry standards.

2.4.1.5 Heated Mirrors. Combination flat and convex outside rearview mirrors shall be installed on each side of the cab, mounted on fold-back west coast style brackets. 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.

2.4.1.6 Climate control system. The manufacturer’s standard heater/defroster system shall be provided. The manufacturer’s standard air conditioning system shall also be provided. In 100° F ambient temperature with 50 percent relative humidity and at maximum compressor speed, the air conditioning system shall cool the fully occupied cab to 75° F within 30 minutes. For the purposes of air conditioner design, the work station electrical load is 500 watts each.

2.4.1.7 Instruments and controls. All instruments, controls, switches, and gauges shall be clearly labeled. Gauges shall be provided for oil pressure, coolant temperature, and automatic transmission temperature. In addition to the instruments and controls required by 14.3.6 of NFPA 1901, the following shall be provided within convenient reach of the seated driver:

a. Master warning light control switch,

b. Work light switch(es), and

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.

2.5 Body, compartments, and equipment mounting.

2.5.1 Body. The vehicle shall have a body constructed entirely of non corroding materials. The body shall be at least as strong as if it were constructed of 0.125 inch thick aluminum. A copy of the fire apparatus manufacturer's warranty shall be included with the bid. The warranty shall state that the body shall be free of structural failures caused by defective design or workmanship for a warranty period of fifteen (15) years from the date the new vehicle is first delivered or 100,000 miles, whichever occurs first, and that defective parts under the warranty shall be repaired or replaced without charge to the original purchaser.

2.5.2 Compartments. The utility body shall have side, rear, and roof compartments with a minimum of 700 cubic feet of enclosed storage space. Floors for side and rear compartments shall be accessible to crew members standing on the ground. The compartment floor areas shall support a minimum load of 1,000 pounds without permanent deformation.

2.5.2.1 Compartment doors. Compartments shall have clear anodized aluminum, counterbalanced, non-locking, roll-up doors and will be provided with an aluminum tray/guard that protects the roll up door from damage. Guard shall not be provided on medical cabinets located inside cabs. 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 six feet above the ground.

2.5.2.2 Scuffplates. Replaceable scuffplates shall be provided to prevent body damage from sliding equipment in and out of the compartments. The scuffplates shall be attached in a manner that does not allow them to become loose during normal use.

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 trucks 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 500 pounds without permanent deformation. Each shelf shall be accessible to crew members standing on the ground. A pull out and tip-down configuration shall be used for shelving over 54 inches from the ground when the compartment is more than 18 inches deep. Each shelf shall have ¼ inch diameter drain holes located in each corner of the shelves 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 mat designed to allow for drainage of any water from the stowed equipment.

2.5.2.6 Pass-through compartments with roll-out trays. Two pass-through compartments with roll-out trays shall be provided. The length of each roll-out tray shall be the full interior width of the utility body and shall extend four feet from either side of the utility body. Each roll-out tray shall support a 500 pound load without permanent deformation. The roll-out trays shall be adjustable for incremental vertical height. Slide out adjustments shall be accomplished without the use of tools. Automatic latches shall secure the stowed trays and shall prevent over-travel when fully extended. The engagement and disengagement of these latches shall not pose a pinching hazard to the hands or fingers. One roll-out tray shall support a customer provided and mounted diesel engine powered rescue tool kit.

2.5.2.7 Underside compartments. Where the side roll-up door compartments do not extend below the top of the chassis frame rails, one or more underside compartments shall be provided on each side of the vehicle, from the front of the utility body to the rear axle wheelhouse opening and extending down to the nominal (12°) interaxle clearance point. Open underside compartment doors shall not interfere with access to the above compartments. Push button latches shall not be used.

2.5.3 Hatch style compartments. Weather resistant hatch style compartments with gasketed covers shall be mounted on the roof of the utility body; they shall extend the entire length of the

utility body on both sides of the walkway, except for the area provided for the installation and operation of the light mast (see 2.6.6). The compartments, their latches, and associated hardware shall not present a tripping hazard.

2.5.4 SCBA storage rack. A rack for storage of eight SCBA one hour bottles shall be installed in a compartment. The top of the rack shall not be higher than 66 inches above the ground. The tubes shall be designed to a length and diameter of sufficient size to accommodate any commercially available one hour SCBA cylinder.

2.5.5 Ladder, handrails, and walkways. The utility body roof shall have a walkway, which shall extend from the back of the cab to the rear of the utility body, with a depth and a width of not less than 30 inches. A walkway access ladder with non-slip handrails and rungs shall be provided. Retractable or folding steps shall be provided to assist crew members reaching equipment located on higher compartment shelves. Steps shall have automatic locking devices to secure steps in both extended and stored positions. All ladders, stepping, standing, and walking surfaces shall be in accordance with 15.7 of NFPA 1901. Handrails shall be provided in accordance with 15.8 of NFPA 1901.

2.5.6 Chocks. Two folding wheel chocks and mounting hardware shall be provided as loose equipment. The wheel chocks shall hold the apparatus, when loaded to its GVWR or GCWR, on a hard surface with a 20 percent grade with the transmission in neutral and the parking brake released.

2.5.7 Body and compartment lighting. All standard body and compartment lighting shall be LED type.

2.5.8 Awnings. A manually operated, spring loaded, automatic retracting roll out awnings that extend the full length of both sides of the utility body shall be provided. One shall be located on each side of the vehicle. The awning will be equipped with a pull down/retraction rod.

2.6 Line voltage electrical system.

2.6.1 Auxiliary generator. A 25 kilowatt (kW) (continuous rating), 120/240 volt, 60 Hertz, split shaft power takeoff (PTO) driven generator shall be provided. The PTO shall be activated from the driver's position and shall have a monitor light to indicate engagement. The PTO shall operate only when the vehicle is out of gear and the parking brake is engaged; it shall automatically disengage if the transmission is placed in gear or the parking brake is released. A governor shall regulate engine speed to match the generator output to the connected load. Gauges shall monitor the operation of the generator system and indicate the connected load. Access for maintenance shall be provided above and below the generator. Individual circuit breaker tripping or failure shall not affect operation of other active circuits.

2.6.2 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 be the vehicle when the shore line is connected. A weatherproof charge meter shall be installed next to the receptacle. 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. When specified (see 6.2), the receptacle(s) and power cable(s) shall be for 220 volts in lieu of 110 volts.

2.6.3 Receptacles. One duplex NEMA 5-20R, 120 volt, 20 amp shall be provided at each corner of the body. Directly adjacent to the duplex outlet, a 120 volt, 20 amp, L5-20R shall be provided. The receptacles shall be powered by the auxiliary generator (see 2.6.1). Two 120 volt AC, 20 amp, electrical outlets shall be provided, one at each corner of the body. Each outlet shall have weatherproof cover(s) and shall provide L5-20R and one duplex NEMA 5-20R receptacles. The receptacles shall be powered by the auxiliary generator (see 2.6.1). See example below. Specific locations will be annotated to design drawings at the post award meeting.

2.6.4 Cable reels. The vehicle shall be equipped with two electrical cable reels, ceiling mounted in a compartment on each rear side. Each reel shall be equipped with 200 feet of 10/3 SO, 20 amp, 600 volt, 90° C insulated electrical cable. The electrical cables shall be equipped with rubber ball stops to prevent cable pull through during rewinding operations. A four-way roller guide shall be provided for each cable reel to prevent chafing of cable insulation. Each cable reel shall have an electric rewind motor with provisions for manual rewind in the event of motor failure; the manual rewind handle shall be securely stored near the cable reel. A portable weatherproof duplex outlet box, with built-in circuit breakers and twist-lock, NEMA L5-20R style in accordance with NEMA WD-6, receptacles, shall be provided for each cable end. The cable reels shall be powered by the auxiliary generator (see 2.6.1).

2.6.5 Scene lights. The vehicle shall be equipped with four 1,000 watt quartz halogen scene lights, two on each side, mounted at the top front and rear corners of the utility body. The scene lights shall be recessed into the utility body. The light enclosures shall be pitched for drainage and shall permit air circulation. Access shall be provided for removal or replacement of the light elements or complete light assemblies. Switches for the scene lights shall be located in both the work areas and on the cab instrument panel and shall be clearly labeled. The scene lights shall be powered by the auxiliary generator (see 2.6.1).

2.6.6 Light mast. The vehicle shall be equipped with an elevating light mast with four 1,500-watt "instant-on" halogen lights. The light mast shall be of a free standing design, shall not require outriggers or guy wires, and shall survive 100 mph winds with no damage. The light mast shall extend a minimum of 15 feet above its stowed position on the vehicle

roof and shall reach a minimum height of 25 feet above the ground. It shall stop at any vertical height between its maximum and minimum height. The light head shall rotate at least 360° (it is not necessary for the head to rotate when it is in the stored position). Electrical power shall be provided by the auxiliary generator (see 2.6.1). The light mast shall include a remote control on a 25-foot cord to provide pan-and-tilt and rotation of the lights. A bracket for storage of the remote control shall be provided. The bracket shall be located in close proximity to the tower control area. The lights and light mast shall be operable by a person standing on the ground. The light system shall be interlocked to operate only while the engine is running and the parking brake is applied. A master or deadman switch for controlling the activation of the "stand-up" mode of the light mast shall be provided. This switch shall have a light to indicate when the circuit is active. Pneumatic controls, if provided, shall include a permanently set air regulator, air control valves, and a system air pressure gauge. A red warning light shall flash continuously, in front of the driver, while the light mast is extended or not firmly set in its support cradle. The vehicle horn shall blow continuously if the transmission is placed in gear or the parking brake is released while the mast is extended or not set firmly in its support cradle.

2.6.7 Command area power supply. Two 120 volt, NEMA 5-15R, 15 amp receptacles shall be provided at each work station. The receptacles shall be powered by the auxiliary generator (see 2.6.1) and shall be in accordance with NEMA WD-6.

2.6.8 Computer system power supply. A minimum of 2 duplex NEMA 5-15R style outlets shall be provided for each work station. Each outlet shall be in accordance with NEMA WD-6. Sufficient power shall be provided to allow all outlets to simultaneously deliver power at their maximum rating.

2.7 Air systems.

2.7.1 Cascade air system. When specified (see 6.2), the vehicle shall be equipped with a cascade air system and booster pump in accordance with 24.2 of NFPA 1901. The air system shall meet the requirements for a compressed air system used to provide air suitable for human respiration with self-contained breathing apparatus. The cascade system shall have a total volume of 1,776 standard cubic feet at the system working pressure of 6,000 pounds per square inch gauge (psig). The cascade system shall be piped for a four storage bank cascading operation. The system shall be mounted within the utility body.

2.7.1.1 Cascade air system environmental conditions. The cascade system shall be capable of operating in a range of ambient temperatures of 0° to 125° F. The air system shall be capable of withstanding storage temperatures from 0° to 125° F without damage. The air system shall be capable of being stored and operated in environments with relative humidity up to and including 100 percent.

2.7.1.2 Cascade air system hose. All flexible hose shall be installed in such a manner as to prevent cuts, abrasions, exposure to damage, excessive temperatures, damage from loose equipment, and excessive bending. The hose shall be installed in a manner that permits removal of hose without removal of major vehicle components or vehicle mounted equipment.

2.7.1.3 Cascade air system maintainability. The air system design shall provide for maintainability by ensuring that the arrangement of the components shall allow easy inspections, servicing, calibration, and adjustment without removing the components.

2.7.1.4 Cascade air system labels. All major components in the air system, including accessories, shall be clearly identified and labeled. Appropriate caution and warning labels shall be affixed where necessary to allow the equipment to be safely operated and adjusted.

2.7.1.5 Cascade air system major components. The cascade system shall consist of the following major components.

a. Four (4) storage vessels.

b. Four (4) storage vessel shutoff valves.

c. Four (4) storage vessel relief devices.

d. One (1) storage vessel mounting rack.

e. Four (4) inlet/outlet connections.

Each cascade system component shall have a rating of 6,000 psig or greater.

2.7.1.5.1 Cascade air system storage vessels. Storage vessels shall be designed, constructed, and marked in accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. Storage vessels shall be securely mounted in a rack in a compartment. Each storage vessel shall have a design pressure of 6,000 psig and 444 standard cubic feet volume at pressure.

2.7.1.6 Air control panel. The air control panel shall be hinged for ease of repair and shall protect the components behind it. All tubing behind the panel shall be stainless steel with the exception of the supply lines from the air storage and the flexible fill whips. All stainless steel tubing shall have a minimum 4:1 safety factor. All flexible hose shall have a minimum 3.3:1 safety factor. The line valves shall be located at the air control panel.

2.7.1.6.1 Air control panel gauges, valves, and fittings. A gauge and a 6,000 psi valve shall be supplied on the air control panel for each storage bank. A supply gauge shall be provided to monitor the supply of air to the regulator and also provide a secondary monitor of the storage vessels. An SCBA screw type fill valve shall be provided between the regulated pressure gauge and the SCBA fill gauge. Each SCBA being filled shall have a fill gauge and fill valve on the air control panel for manually metering the flow of the air into the SCBA. The operator shall have the capability to vary the fill rates depending on the pressure and volume in accordance with the SCBA manufacturer. All gauges shall be a minimum of 2½-inch diameter and be filled with glycerin. Bank and supply gauges shall read up to 7,500 psi. A gauge shall be used on the downstream side of each regulator for reading the regulated pressure. All gauges downstream of

the regulator shall read up to 7,500 psi. A male Compressed Gas Association (CGA) 677 fitting shall be provided at the air control panel with a check valve to refill the storage vessels.

2.7.1.6.2 Air control panel location. The air control panel shall be installed in a compartment selected by the procuring activity.

2.7.1.6.3 Cascade air system breathing air regulator. At the air control panel, one (1) regulator with a gauge shall be supplied showing the set pressure of the regulator for use in filling SCBA bottles. A device to prevent inadvertent or accidental adjustment of the regulator shall be provided. A pressure relief valve preset at not over 10 percent above the regulator output setting shall be provided. A warning label shall be installed next to the regulator to indicate the relief valve setting warning against setting the regulator to an excessive pressure.

2.7.1.6.4 Cascade air system fill valve and gauge. Provided on the air control panel shall be one (1) SCBA screw type fill valve along with an SCBA fill gauge. The valve and gauge shall be used to manually control and monitor all SCBA fills. The operator may vary the fill rates in accordance with the SCBA manufacturer's recommendations.

2.7.1.7 SCBA fill enclosure. The cascade air system shall have a fill enclosure designed for filling two SCBA cylinders simultaneously or separately. The enclosure shall be designed to withstand the impact of suddenly expanded air and to contain displaced fragments in the unlikely event of a cylinder rupture. The loading door shall be designed to be completely trapped inside the fill enclosure cabinet frame when closed. This design shall include an automatic safety interlock to prevent filling unless the loading door is completely latched in the closed position. The fill enclosure shall allow the fill process to be accomplished from the front. The front loading door shall be designed so that, when opened, the SCBA cylinder holder sleeves tilt forward to ease loading and minimize operator fatigue. The external construction of the high pressure breathing air system shall use formed fabricated steel structures and panels without visible welds, burrs, and grinding marks. The enclosure shall be installed in a compartment selected by the procuring activity.

2.7.2 Air hose reels. Two air hose reels shall be provided, one ceiling mounted in a compartment on each side, at the rear of the truck. Each hose reel shall be equipped with 150 feet of 0.50 inch inside diameter hoseline; a 3/8 inch National Pipe Taper (NPT) fitting and female style quick disconnect shall be connected to the end of each hoseline. Hoselines shall be equipped with rubber ball stops to prevent hose pull through on roller guides during rewinding operations. A four-way roller guide shall be provided for each hose reel to prevent hose chafing and kinking. Each hose reel shall have an electric rewind motor and provisions for manual rewind in the event of motor failure; the manual rewind handle shall be securely stored near the hose reel. A pressure protected air supply from the chassis air system shall be connected to each hose reel. The air supply lines shall be routed with minimum bends and located or guarded from damage from the carried equipment.

2.8 Winch. A winch with at least 12,000 pound-pull 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 25 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.

2.9 Trailer towing package. The vehicle shall be equipped with a square sleeve type receiver used to tow trailers equipped with a ball tow hitch and other ancillary firefighting equipment. The tow hitch and receiver shall be rated at the maximum inherent towing capability of the vehicle such that safety and reliability of the vehicle are not degraded. The trailer hitch shall comply with 26.8.1 and 26.8.2 of NFPA 1901. The maximum towing capacity and tongue weight capacity of the vehicle shall be clearly and visibly posted both near the tow hitch receiver and inside the cab of the vehicle. The manufacturer shall describe any hazards, risks, maximum suggested speed limits or restrictions, and special use requirements during the solicitation process. This information shall also be listed near the tow hitch receiver, inside of the cab of the vehicle, as well as in the operator's manual. A brake controller shall be provided for use with a trailer which has an electric braking system. Gladhands in accordance with SAE J318 shall be provided for use with a trailer which has an air braking system.

2.10 Safety chain attachment points. The vehicle shall be equipped with two safety chain attachment points, one located on each side of the receiver sleeve, symmetrical about the receiver sleeve. The vertical centerline of the safety chain attachment points shall be located at a parallel distance of not greater than 6 inches to the left and right of the truck centerline. Safety chains shall comply with 26.8.3 of NFPA 1901 and shall have the ability for standard safety chain hooks to be attached. The inside radius of the safety chain hook is between 1 inch and 3 inches.

2.11 Workmanship. The vehicle, including all parts and accessories, shall be fabricated in a thoroughly workmanlike manner. 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. Wire ties may be used for bundling vehicle wiring, but not for support of wire bundles. Support must be provided by insulated metal clamps. The vehicle shall be thoroughly cleaned of all foreign matter.

2.12 Human factors engineering. All system operations, servicing, and maintenance functions shall be configured to be accomplished by a range of personnel from a 5th percentile female to a 95th percentile male.

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 Product conformance. The products provided shall meet the salient characteristics of this CID, 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 Government reserves the right to require proof of such conformance.

4.2 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 manufacturer to prove that their product complies with the referenced commerciality requirements and each salient characteristic of this CID. The manufacturer 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 response to each paragraph shall clearly state “Fully Comply” or “Bid with Exception” in addition to other data the contractor wishes to submit. 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 manufacturer shall provide two copies of their commercial descriptive catalogs with their offer as supporting reference to the itemized technical proposal. The manufacturer shall identify all modifications made to their commercial model in order to comply with the requirements herein.

4.3 Inspection requirements.

4.3.1 General inspection requirements. Apparatus used in conjunction with the inspections specified herein shall be laboratory precision type, calibrated at proper intervals to ensure laboratory accuracy.

4.3.2 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, air, or lubricant under any condition.

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.

i. Overheating of the engine, transmission, or any other vehicle component.

j. Evidence of corrosion.

4.3.3 Detailed inspection requirements.

4.3.3.1 Examination of product. Each vehicle shall be examined to verify compliance with the salient characteristics herein. A contractor 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. Each production vehicle shall be inspected to a reduced version of the checklist that has been approved by the procuring activity.

4.3.3.2 Road tests. The following tests shall be performed in accordance with 4.15 and 4.17 of NFPA 1901.

4.3.3.2.1 Maximum speed and acceleration test. The vehicle shall be tested to demonstrate compliance with 2.1.3.2 and 2.1.3.3. For the first production unit, a time-distance recorder shall be used to record data for this test.

4.3.3.2.2 Gradeability test. The first production vehicle shall be tested to demonstrate compliance with 2.1.3.4.

4.3.3.2.3 Service brake system test. The vehicle shall be tested in accordance with 4.17.8 of NFPA 1901. For the first production unit, a time-distance recorder shall be used to record data for this test.

4.3.3.2.4 Turning diameter test. The fully loaded first production vehicle shall be tested in accordance with SAE J695 to demonstrate compliance with 2.1.5.

4.3.3.2.5 Roadability test. The fully loaded first production vehicle shall be driven over 10 miles of paved roads; the 4x4 version shall also be driven over ten miles of off-road terrains. All loads shall be removed and all structure and surfaces shall be visibly inspected for failure or permanent deformation.

4.3.3.3 Low voltage electrical system performance tests. The vehicle shall be tested in accordance with 13.14 of NFPA 1901.

4.3.3.4 Cab interior sound level test. The cab interior sound levels of the first production vehicle shall be measured in accordance with 49 CFR 393.94(c), "Vehicular interior noise levels test procedure," except that the test shall be performed with the vehicle traveling at a steady speed of 45 mph on a level, hard, smooth surface road.

4.3.3.5 Cascade air system test. If equipped with a cascade air system (see 6.2), each vehicle shall be tested in accordance with 24.2 of NFPA 1901.

4.3.3.6 Line voltage electrical system testing. The vehicle shall be tested in accordance with 13.14 of NFPA 1901.

5. PACKAGING.

5.1 Preservation, packing, and marking shall be as specified in the contract or order.

6. NOTES.

6.1 Source of documents.

6.1.1 Department of Defense and Federal documents may be obtained at https://assist.daps.dla.mil/online 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 at 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.

6.1.5 FAR and DFARS may be obtained from the Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Electronic copies of the FAR may be obtained from http://www.arnet.gov/far Electronic copies of the DFARS may be obtained from http://www.acq.osd.mil/dpap/dars/dfars/index.htm .

6.1.6 Occupational Safety and Health Association (OSHA) copies may be obtained online at http://www.osha.gov/ or from OSHA, 200 Constitution Ave., Washington, D.C. 20210.

6.1.7 Environmental Protection Agency documents may be obtained at http://www.epa.gov/ or from USEPA Ariel Rios Building (AR), 1200 Pennsylvania Avenue N.W., Washington, DC 20004.

6.1.8 National Electrical Manufacturers Association (NEMA) standards may be obtained from National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1752, Rosslyn, Virginia 22209. Electronic copies of NEMA standards may be obtained from http://www.nema.org/stds/ .

6.1.9 American Society of Mechanical Engineers (ASME) standards may be obtained from Three Park Avenue, New York, NY 10016-5990. Electronic copies may be obtained from http://www.asme.org

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

a. Chassis configuration required, 4x2 or 4x4 (see 2).

b. Altitude for which vehicle operation is to be designed, if greater than 2,000 feet above sea level (see 2.1.1.1).

c. If a winterization system is required (see 2.1.1.2).

d. Finish color required (Desert Sand in place of Candy Apple Red) (see 2.1.8.2).

e. If driver activated automatic type tire chains are required for the 4x2 version (see 2.2.6).

g. Emergency warning light color required (amber or blue in place of red) (see 2.3.4.2) (NOTE: Applies to USAFE ONLY).

h. If a cascade air system is required (see 2.7.1).

i. Electrical shoreline voltage, 220 volts instead of 110 volts (see 2.6.2). (NOTE: Applies to USAFE only).

j. If regular diesel is required in lieu of ultra low sulfur diesel (see 2.2.2).

6.3 Key words.

Chemical
Command
Control
Environment
Research

Custodian:
Air Force - 84

Reviewer:
DLA-IS

Preparing activity:
Air Force - 84

Agent:
Air Force – 99

Project 4210-2010-010

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 https://assist.daps.dla.mil .