

OUTBY MACHINE CHECKLIST

§ 75.1909 Nonpermissible diesel-powered equipment;
design and performance requirements.

§ 75.1910 Nonpermissible diesel-powered equipment;
electrical system design and performance
requirements.

Machine: _____

Model No.: _____

Serial No. _____

Owner: _____

Condition: _____

Date of Inspection: _____

Location: _____

Investigators: _____

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| 1909 | Nonpermissible diesel-powered equipment; design and performance requirements. | | | |
| (a) | Nonpermissible diesel-powered equipment, except for the special category of equipment under Sec. 75.1908(d), must be equipped with the following features: | | | |
| (a)(1) | An engine approved under subpart E of part 7 of this title | Approval No. _____ | | |
| (a)(1) cont. | equipped with an air filter sized in accordance with the engine manufacturer's recommendations, | Air filter model no.: _____ CFM rating: _____ | | |
| (a)(1) cont. | an air filter service indicator set in accordance with the engine manufacturer's recommendations; | _____ "Hg | | |
| (a)(2) | At least one portable multipurpose dry chemical type (ABC) fire extinguisher listed or approved by a nationally recognized independent testing laboratory with a 10A:60B:C or higher rating. | Date of last inspection- UL, FM tag- | | |
| (a)(2) cont. | The fire extinguisher must be located within easy reach of the equipment operator and protected from damage; | | | |
| (a)(3) | A fuel system specifically designed for diesel fuel meeting the following requirements: | OEM or aftermarket? | | |
| (a)(3) | A fuel tank and fuel lines that do not | | | |

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| (i) | leak; | | | |
| (a)(3) (ii) | A fuel tank that is substantially constructed and protected against damage by collision; | UL 395 OEM? metal? min-1/16", typ. 1/8" within machine frame, skid plate | | |
| (a)(3) (iii) | A vent opening that maintains atmospheric pressure in the fuel tank, and that is designed to prevent fuel from splashing out of the vent opening; | OEM or aftermarket? | | |
| (a)(3) (iv) | A self-closing filler cap on the fuel tank; | Flap in filler nozzle? | | |
| (a)(3) (v) | The fuel tank, filler and vent must be located so that leaks or spillage during refueling will not contact hot surfaces; | | | |
| (a)(3) (vi) | Fuel line piping must be either steel-wire reinforced; synthetic elastomer-covered hose suitable for use with diesel fuel that has been tested and has been determined to be fire-resistant by the manufacturer; or metal; | SAE 1527 Type A, SAE 1942 UL 1114 Type A1 | | |
| (a)(3) (vii) | Fuel line piping must be clamped; | | | |

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| (a)(3) (viii) | Primary fuel lines must be located so that fuel line leaks do not contact hot surfaces; | | | |
| (a)(3) (ix) | The fuel lines must be separated from electrical wiring and protected from damage in ordinary use; | | | |
| (a)(3) (x) | A manual shutoff valve must be installed in the fuel system as close as practicable to the tank; | | | |
| (a)(3) (xi) | A water separator and fuel filter(s) must be provided. | | | |
| (a)(4) | A sensor to monitor the temperature and provide a visual warning of an overheated cylinder head on air-cooled engines; | | | |
| (a)(5) | Guarding to protect fuel, hydraulic, and electric lines when such lines pass near rotating parts or in the event of shaft failure; | | | |
| (a)(6) | Hydraulic tanks, fillers, vents, and lines located to prevent spillage or leaks from contacting hot surfaces; | | | |
| (a)(7) | Reflectors or warning lights mounted on the equipment which can be readily seen in all directions; | | | |
| (a)(8) | A means to direct exhaust gas away from the equipment operator, persons on board the machine, and combustible machine components; | | | |

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| (a)(9) | A means to prevent unintentional free and uncontrolled descent of personnel-elevating work platforms; | | | |
| (a)(10) | A means to prevent the spray from ruptured hydraulic or lubricating oil lines from being ignited by contact with engine exhaust system component surfaces. | | | |
| (b) | Self-propelled nonpermissible diesel-powered equipment must have the following features in addition to those in paragraph (a): | | | |
| (b)(1) | A means to ensure that no stored hydraulic energy that will cause machine articulation is available after the engine is shut down; | | | |
| (b)(2) | A neutral start feature which ensures that engine cranking torque will not be transmitted through the powertrain and cause machine movement on vehicles utilizing fluid power transmissions; | | | |
| (b)(3) | For machines with steering wheels, brake pedals, and accelerator pedals, controls which are of automobile orientation; | | | |
| (b)(4) | An audible warning device conveniently located near the equipment operator; | | | |
| (b)(5) | Lights provided and maintained on both ends of the equipment. | | | |
| (b)(5) | Equipment normally operated in both | | | |

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| cont. | directions must be equipped with headlights for both directions; | | | |
| (b)(6) | Service brakes that act on each wheel of the vehicle and that are designed such that failure of any single component, except the brake actuation pedal or other similar actuation device, must not result in a complete loss of service braking capability; | | | |
| (b)(7) | Service brakes that safely bring the fully loaded vehicle to a complete stop on the maximum grade on which it is operated; | Vehicle grade rating- | | |
| (b)(8) | No device that traps a column of fluid to hold the brake in the applied position shall be installed in any brake system, unless the trapped column of fluid is released when the equipment operator is no longer in contact with the brake activation device. | | | |
| (c) | Self-propelled nonpermissible heavy-duty diesel-powered equipment under Sec. 75.1908(a), except rail-mounted equipment, shall be provided with a supplemental braking system that: | | | |
| (c)(1) | Engages automatically within 5 seconds of the shutdown of the engine; | | | |
| (c)(2) | Safely brings the equipment when fully loaded to a complete stop on the maximum grade on which it is operated; | Vehicle grade rating- | | |
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| (c)(3) | Holds the equipment stationary, despite any contraction of brake parts, exhaustion of any nonmechanical source of energy, or leakage; | | | |
| (c)(4) | Releases only by a manual control that does not operate any other equipment function; | | | |
| (c)(5) | Has a means in the equipment operator's compartment to apply the brakes manually without shutting down the engine, and a means to release and reengage the brakes without the engine operating; | | | |
| (c)(6) | Has a means to ensure that the supplemental braking system is released before the equipment can be trammed, and is designed to ensure the brake is fully released at all times while the equipment is trammed. | | | |
| (d) | Self-propelled nonpermissible light-duty diesel-powered equipment under Sec. 75.1908(b), except rail-mounted equipment, must be provided with a parking brake that holds the fully loaded equipment stationary on the maximum grade on which it is operated despite any contraction of the brake parts, exhaustion of any nonmechanical source of energy, or leakage. | | | |
| (e) | The supplemental and park brake systems required by paragraphs (c) and (d) must be applied when the equipment operator | | | |

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| | is not at the controls of the equipment, except during movement of disabled equipment. | | | |
| (f) | Self-propelled personnel-elevating work platforms must be provided with a means to ensure that the parking braking system is released before the equipment can be trammed, and must be designed to ensure the brake is fully released at all times while the equipment is trammed. | | | |
| (g) | Any nonpermissible equipment that discharges its exhaust directly into a return air course must be provided with a power package approved under subpart F of part 7 of this title. | | | |
| (h) | Self-propelled nonpermissible heavy-duty diesel-powered equipment meeting the requirements of Sec. 75.1908(a) must be provided with an automatic fire suppression system meeting the requirements of Sec. 75.1911. | See attached §75.1911 Checklist | | |
| (i) | Self-propelled nonpermissible light-duty diesel-powered equipment meeting the requirements of Sec. 75.1908(b) must be provided with an automatic or manual fire suppression system meeting the requirements of Sec. 75.1911. | See attached §75.1911 Checklist | | |
| (j) | Nonpermissible equipment that is not self-propelled must have the following features in addition to those listed in | | | |

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| | paragraph (a) : | | | |
| (j)(1) | A means to prevent inadvertent movement of the equipment when parked; | | | |
| (j)(2) | Safety chains or other suitable secondary connections on equipment that is being towed; | | | |
| (j)(3) | An automatic fire suppression system meeting the requirements of Sec. 75.1911. | See attached §75.1911 Checklist | | |
| 1910 | Nonpermissible diesel-powered equipment; electrical system design and performance requirements. | | | |
| 1910 cont. | Electrical circuits and components associated with or connected to electrical systems on nonpermissible diesel-powered equipment utilizing storage batteries and integral charging systems, except for the special category of equipment under Sec. 75.1908(d), must conform to the following requirements: | | | |
| (a) | Overload and short circuit protection must be provided for electric circuits and components in accordance with Secs. 75.518 and 75.518-1 of this part; | Attach wiring schematics- | | |
| (b) | Each electric conductor from the battery to the starting motor must be protected against short circuit by fuses or other circuit-interrupting devices placed as near as practicable to the battery terminals; | Fuse rating: _____ Starter motor kW: _____ | | |

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| (c) | Each branch circuit conductor connected to the main circuit between the battery and charging generator must be protected against short circuit by fuses or other automatic circuit-interrupting devices; | Attach wiring schematics- | | |
| (d) | The electrical system shall be equipped with a circuit-interrupting device by means of which all power conductors can be deenergized. | | | |
| (d) cont. | The device must be located as close as practicable to the battery terminals and be designed to operate within its electrical rating without damage. | Distance from battery: _____ Switch rating: _____ | | |
| (d) cont. | The device shall not automatically reset after being actuated. | | | |
| (d) cont. | All magnetic circuit-interrupting devices must be mounted in a manner to preclude their closing by force of gravity; | | | |
| (e) | Each motor and charging generator must be protected by an automatic overcurrent device. One protective device will be acceptable when two motors of the same rating operate simultaneously and perform virtually the same duty; | Attach wiring schematics- | | |
| (f) | Each ungrounded conductor must have insulation compatible with the impressed voltage. | Wire designation: _____ | | |

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| (f) cont. | Insulation materials must be resistant to deterioration from engine heat and oil. | Wire designation: _____ | | |
| (f) cont. | Electric conductors must meet the applicable requirements of Secs. 75.513 and 75.513-1, except electric conductors for starting motors, which must only meet the requirements of Sec. 75.513; | Wire designation: _____ NEC, ICEA, or SAE standard: _____ | | |
| (g) | All wiring must have adequate mechanical protection to prevent damage to the cable that might result in short circuits; | | | |
| (h) | Sharp edges and corners must be removed at all points where there is a possibility of damaging wires, cables, or conduits by cutting or abrasion. | | | |
| (h) cont. | The insulation of the cables within a battery box must be protected against abrasion; | | | |
| (i) | When insulated wires other than cables pass through metal frames, the holes must be substantially bushed with insulated bushings. | | | |
| (i) cont. | Cables must enter metal frames of motors, splice boxes, and electric components only through proper fittings. | | | |
| (i) cont. | All electrical connections and splices must be mechanically and electrically efficient, and suitable connectors | | | |

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| | shall be used. | | | |
| (i) cont. | All electrical connectors or splices in insulated wire must be reinsulated at least to the same degree of protection as the remainder of the wire; | | | |
| (j) | The battery must be secured to prevent movement, and must be protected from external damage by position. | | | |
| (j) cont. | Batteries that are not protected from external damage by position must be enclosed in a battery box. | | | |
| (j) cont. | Flame-resistant insulation treated to resist chemical reaction to electrolyte must be provided on battery connections to prevent battery terminals from contacting conducting surfaces; | Mfg's spec.:_____ | | |
| (k) | A battery box, including the cover, must be constructed of steel with a minimum thickness of $\frac{1}{8}$ inch, or of a material other than steel that provides equivalent strength; | | | |
| (l) | Battery-box covers must be lined with a flame-resistant insulating material permanently attached to the underside of the cover, unless equivalent protection is provided. | Mfg.'s spec._____ | | |
| (l) cont. | Battery-box covers must be provided with a means for securing them in closed position. At least $\frac{1}{2}$ inch of air space must be provided between the underside of the cover and the top of | | | |

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| | the battery, including terminals; | | | |
| (m) | Battery boxes must be provided with ventilation openings to prevent the accumulation of flammable or toxic gases or vapors within the battery box. | | | |
| (m) cont. | The size and locations of openings for ventilation must prevent direct access to battery terminals; | | | |
| (n) | The battery must be insulated from the battery-box walls and supported on insulating materials. | | | |
| (n) cont. | Insulating materials that may be subject to chemical reaction with electrolyte must be treated to resist such action; | Mfg.'s spec. _____ | | |
| (o) | Drainage holes must be provided in the bottom of each battery box. | | | |

OUTBY MACHINE CHECKLIST

§ 75.1911 Fire suppression systems for diesel-powered equipment and fuel transportation units.

Machine: _____

Model No.: _____

Serial No. _____

Owner: _____

Condition: _____

Date of Inspection: _____

Location: _____

Investigators: _____

Warning: Determine "...the hazards inherent to the operation of the fire suppression systems and, where appropriate, the safeguards available for each system."

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| 1911 | Fire suppression systems for diesel-powered equipment and fuel transportation units. | | | |
| (a) | The fire suppression system required by Secs. 75.1907 and 75.1909 shall be a multipurpose dry chemical type (ABC) fire suppression system listed or approved by a nationally recognized independent testing laboratory and appropriate for installation on diesel-powered equipment and fuel transportation units. | UL-_____ FM-_____ | | |
| (a)(1) | The system shall be installed in accordance with the manufacturer's specifications and the limitations of the listing or approval. | No. of tanks\qty.:_____ No. of nozzles:_____ Drawing No.:_____ | | |
| (a)(2) | The system shall be installed in a protected location or guarded to minimize physical damage from routine vehicle operations. | | | |
| (a)(3) | Suppressant agent distribution tubing or piping shall be secured and protected against damage, including pinching, crimping, stretching, abrasion, and corrosion. | | | |
| | Discharge nozzles shall be positioned | | | |

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| (a)(4) | and aimed for maximum fire suppression effectiveness. | | | |
| (a)(4) cont. | Nozzles shall also be protected against the entrance of foreign materials such as mud, coal dust, or rock dust. | | | |
| (b) | <p>The fire suppression system shall provide fire suppression and, if automatic, fire detection for the engine.....</p> <p>including the starter,.....</p> <p>transmission,.....</p> <p>hydraulic pumps and tanks,.....</p> <p>fuel tanks,.....</p> <p>exposed brake units,.....</p> <p>air compressors.....</p> <p>and battery areas.....</p> <p>on diesel-powered equipment and electric panels or controls.....</p> <p>used on fuel transportation units and other areas as necessary.....</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> | | | |
| (c) | If automatic, the fire suppression system shall include audible and visual alarms to warn of fires or system faults. | | | |
| (d) | The fire suppression system shall provide for automatic engine shutdown. | | | |

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| | If the fire suppression system is automatic, engine shutdown and discharge of suppressant agent may be delayed for a maximum of 15 seconds after the fire is detected by the system. | Delay time: _____ | | |
| (e) | The fire suppression system shall be operable by at least two manual actuators. One actuator shall be located on each side of the equipment. If the equipment is provided with an operator's compartment, one of the manual actuators shall be located in the compartment within reach of the operator. | | | |
| (f) | The fire suppression system shall remain operative in the event of engine shutdown, equipment electrical system failure, or failure of any other equipment system. | | | |
| (g) | The electrical components of each fire suppression system installed on equipment used where permissible electric equipment is required shall be permissible or intrinsically safe and such components shall be maintained in permissible or intrinsically safe condition. | IS-_____ | | |
| (h) | Electrically operated detection and actuation circuits shall be monitored and provided with status indicators showing power and circuit continuity. | | | |
| | If the system is not electrically | | | |

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| (h) cont. | operated, a means shall be provided to indicate the functional readiness status of the detection system. | | | |
| (i) | Each fire suppression system shall be tested and maintained in accordance with the manufacturer's recommended inspection and maintenance program and as required by the nationally recognized independent testing laboratory listing or approval, and be visually inspected at least once each week by a person trained to make such inspections. | NRITL\Mfg's test\maintenance scedule- | | |
| (j) | <i>Recordkeeping</i> Persons performing inspections and tests of fire suppression systems under paragraph (i) shall record when a fire suppression system does not meet the installation or maintenance requirements of this section. | Note defects\repairs- | | |
| (j)(1) | The record shall include the equipment on which the fire suppression system did not meet the installation or maintenance requirements of this section, the defect found, and the corrective action taken. | | | |
| (j)(2) | Records are to be kept manually in a secure manner not susceptible to alteration or recorded electronically in a secured computer system that is not susceptible to alteration. | | | |
| (j)(3) | Records shall be maintained at a surface location at the mine for one | | | |

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| | year and made available for inspection by an authorized representative of the Secretary and miners' representatives. | | | |
| (k) | All miners normally assigned to the active workings of the mine shall be instructed about the hazards inherent to the operation of the fire suppression systems and, where appropriate, the safeguards available for each system. | | | |
| (l) | For purposes of Sec. 75.380(f), a fire suppression system installed on diesel-powered equipment and meeting the requirements of this section is equivalent to a fire suppression system meeting the requirements of Secs. 75.1107-3 through 75.1107-16. | | | |