§ 7.103(a)(7). If a wet exhaust conditioner is used, it must be filled to the high or normal operating water level during this test.

(9) The starting mechanism shall be tested to ensure that engagement is not possible while the engine is running. Operate the engine and attempt to engage the starting mechanism.

(10) Where the lack of engine oil pressure must be overridden in order to start the engine, test the override to ensure that it does not override any of the safety shutdown sensors specified in § 7.98(i). After each safety shutdown sensor test specified in paragraphs (a)(2) through (a)(5) of this section, immediately override the engine oil pressure and attempt to restart the engine.

(b) *Acceptable performance.* Tests of the safety system controls shall result in the following:

(1) The coolant system temperature shutdown sensor shall automatically activate the safety shutdown system and stop the engine before the water temperature in the cooling jackets exceeds manufacturer's specifications or 212 °F (100 °C), whichever is lower.

(2) The temperature sensor in the exhaust gas stream of a system using a dry exhaust conditioner shall automatically activate the safety shutdown system and stop the engine before the cooled exhaust gas exceeds 302 °F (150 °C).

(3) The temperature sensor in the exhaust gas stream of a system using a wet exhaust conditioner shall automatically activate the safety shutdown system and stop the engine before the cooled exhaust gas exceeds 185 °F (85 °C).

(4) The low water sensor for systems using a wet exhaust conditioner shall automatically activate the safety shutdown system and stop the engine at or above the minimum allowable low water level and prevent restarting of the engine.

(5) The emergency intake air shutoff device shall operate immediately when activated and stop the engine within 15 seconds.

(6) The total intake air inlet restriction and the total exhaust backpressure shall not exceed the engine manufacturer's specifications.

(7) It shall not be possible to engage the starting mechanism while the engine is running, unless the starting mechanism is constructed of nonsparking material.

(8) The engine oil pressure override shall not override any of the shutdown sensors.

§ 7.104 Internal static pressure test.

(a) *Test procedures.* (1) Isolate and seal each segment of the intake system or exhaust system to allow pressurization.

(2) Internally pressurize each segment of the intake system or exhaust system to four times the maximum pressure observed in each segment during the tests of § 7.100, or 150 psig ±5 psig, whichever is less. Maintain the pressure for a minimum of 10 seconds.

(3) Following the pressure hold, the pressure shall be removed and the pressurizing agent removed from the intake system or exhaust system.

(b) *Acceptable performance.* (1) The intake system or exhaust system, during pressurization, shall not exhibit—

(i) Leakage through welds and gasketed joints; or

(ii) Leakage other than along joints meeting the explosion-proof requirements of § 7.98(q).

(2) Following removal of the pressurizing agent, the intake system or exhaust system shall not exhibit any—

(i) Changes in fastening torque;

(ii) Visible cracks in welds;

(iii) Permanent deformation affecting the length or gap of any flame-arresting paths;

(iv) Stretched or bent fastenings;

(v) Damaged threads of parts affecting the explosion-proof integrity of the intake system or exhaust system; or

(vi) Permanent distortion of any planar surface of the diesel power package exceeding 0.04-inches/linear foot.

§ 7.105 Approval marking.

Each approved diesel power package shall be identified by a legible and permanent approval plate inscribed with the assigned MSHA approval number and securely attached to the diesel power package in a manner that does not impair any explosion-proof characteristics. The grade limitation of a wet

exhaust conditioner used as an exhaust flame arrester shall be included on the approval marking.

§ 7.106 Post-approval product audit.

Upon request by MSHA, but not more than once a year except for cause, the approval-holder shall make an approved diesel power package available for audit at no cost to MSHA.

§ 7.107 New technology.

MSHA may approve a diesel power package that incorporates technology for which the requirements of this subpart are not applicable if MSHA determines that the diesel power package is as safe as those which meet the requirements of this subpart.

§ 7.108 Power package checklist.

Each diesel power package bearing an MSHA approval plate shall be accompanied by a power package checklist. The power package checklist shall consist of a list of specific features that must be checked and tests that must be performed to determine if a previously approved diesel power package is in approved condition. Test procedures shall be specified in sufficient detail to allow evaluation to be made without reference to other documents. Illustrations shall be used to fully identify the approved configuration of the diesel power package.

Subpart J—Electric Motor Assemblies

SOURCE: 57 FR 61193, Dec. 23, 1992, unless otherwise noted.

§ 7.301 Purpose and effective date.

This subpart establishes the specific requirements for MSHA approval of certain explosion-proof electric motor assemblies intended for use in approved equipment in underground mines. Applications for approval or extensions of approval submitted after February 22, 1996 shall meet the requirements of this part. Those motors that incorporate features not specifically addressed in this subpart will continue to be evaluated under part 18 of this chapter.

§ 7.302 Definitions.

The following definitions apply in this subpart:

Afterburning. The combustion of any flammable mixture that is drawn into an enclosure after an internal explosion in the enclosure. This condition is determined through detection of secondary pressure peaks occurring subsequent to the initial explosion.

Cylindrical joint. A joint comprised of two contiguous, concentric, cylindrical surfaces.

Explosion-proof enclosure. A metallic enclosure used as a winding compartment, conduit box, or a combination of both that complies with the applicable requirements of § 7.304 of this part and is constructed so that it will withstand the explosion tests of § 7.306 of this part.

Fastening. A bolt, screw, or stud used to secure adjoining parts to prevent the escape of flame from an explosion-proof enclosure.

Flame-arresting path. Two or more adjoining or adjacent surfaces between which the escape of flame is prevented.

Internal free volume (of an empty enclosure). The volume remaining after deducting the volume of any part that is essential in maintaining the explosion-proof integrity of the enclosure or necessary for operation of the motor. Essential parts include the parts that constitute the flame-arresting path and those necessary to secure parts that constitute a flame-arresting path.

Motor assembly. The winding compartment including a conduit box when specified. A motor assembly is comprised of one or more explosion-proof enclosures.

Plane joint. A joint comprised of two adjoining surfaces in parallel planes.

Step (rabbet) joint. A joint comprised of two adjoining surfaces with a change or changes in direction between its inner and outer edges. A step joint may be composed of a cylindrical portion and a plane portion or of two or more plane portions.

Stuffing box. An entrance with a recess filled with packing material for cables extending through a wall of an explosion-proof enclosure.

Threaded joint. A joint consisting of a male- and a female-threaded member,