

**§ 57.6310**

no lower than 100 °F may be used at ambient air temperatures below 45 °F.

(b) Waste oil, including crankcase oil, shall not be used to prepare ammonium nitrate-fuel oil.

**§ 57.6310 Misfire waiting period.**

When a misfire is suspected, persons shall not enter the blast area—

(a) For 30 minutes if safety fuse and blasting caps are used; or

(b) For 15 minutes if any other type detonators are used.

**§ 57.6311 Handling of misfires.**

(a) Faces and muck piles shall be examined for misfires after each blasting operation.

(b) Only work necessary to remove a misfire and protect the safety of miners engaged in the removal shall be permitted in the affected area until the misfire is disposed of in a safe manner.

(c) When a misfire cannot be disposed of safely, each approach to the area affected by the misfire shall be posted with a warning sign at a conspicuous location to prohibit entry, and the condition shall be reported immediately to mine management.

(d) Misfires occurring during the shift shall be reported to mine management not later than the end of the shift.

**§ 57.6312 Secondary blasting.**

Secondary blasts fired at the same time in the same work area shall be initiated from one source.

ELECTRIC BLASTING—SURFACE AND UNDERGROUND

**§ 57.6400 Compatibility of electric detonators.**

All electric detonators to be fired in a round shall be from the same manufacturer and shall have similar electrical firing characteristics.

**§ 57.6401 Shunting.**

Except during testing—

(a) Electric detonators shall be kept shunted until connected to the blasting line or wired into a blasting round;

(b) Wired rounds shall be kept shunted until connected to the blasting line; and

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(c) Blasting lines shall be kept shunted until immediately before blasting.

**§ 57.6402 Deenergized circuits near detonators.**

Electrical distribution circuits within 50 feet of electric detonators at the blast site shall be deenergized. Such circuits need not be deenergized between 25 to 50 feet of the electric detonators if stray current tests, conducted as frequently as necessary, indicate a maximum stray current of less than 0.05 ampere through a 1-ohm resistor as measured at the blast site.

**§ 57.6403 Branch circuits.**

(a) If electric blasting includes the use of branch circuits, each branch shall be equipped with a safety switch or equivalent method to isolate the circuits to be used.

(b) At least one safety switch or equivalent method of protection shall be located outside the blast area and shall be in the open position until persons are withdrawn.

**§ 57.6404 Separation of blasting circuits from power source.**

(a) Switches used to connect the power source to a blasting circuit shall be locked in the open position except when closed to fire the blast.

(b) Lead wires shall not be connected to the blasting switch until the shot is ready to be fired.

**§ 57.6405 Firing devices.**

(a) Power sources shall be capable of delivering sufficient current to energize all electric detonators to be fired with the type of circuits used. Storage or dry cell batteries are not permitted as power sources.

(b) Blasting machines shall be tested, repaired, and maintained in accordance with manufacturer's instructions.

(c) Only the blaster shall have the key or other control to an electrical firing device.

**§ 57.6406 Duration of current flow.**

If any part of a blast is connected in parallel and is to be initiated from powerlines or lighting circuits, the time of current flow shall be limited to a maximum of 25 milliseconds. This can be accomplished by incorporating