

(3) All access routes to the blast area shall be guarded or barricaded to prevent the passage of persons or vehicles.

(g) Work shall not be resumed in the blast area until a post-blast examination addressing potential blast-related hazards has been conducted by a person with the ability and experience to perform the examination.

**§ 57.6307 Drill stem loading.**

Explosive material shall not be loaded into blastholes with drill stem equipment or other devices that could be extracted while containing explosive material. The use of loading hose, collar sleeves, or collar pipes is permitted.

**§ 57.6308 Initiation systems.**

Initiation systems shall be used in accordance with the manufacturer's instructions.

**§ 57.6309 Fuel oil requirements for ANFO.**

(a) Liquid hydrocarbon fuels with flash points lower than that of No. 2 diesel oil (125 °F) shall not be used to prepare ammonium nitrate-fuel oil, except that diesel fuels with flash points 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 con-

dition 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

(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.