§ 77.1434 Retirement criteria.

Unless damage or deterioration is removed by cutoff, wire ropes shall be removed from service when any of the following conditions occurs:

(a) The number of broken wires within a rope lay length, excluding filler wires, exceeds either—
   (1) Five percent of the total number of wires; or
   (2) Fifteen percent of the total number of wires within any strand;

(b) On a regular lay rope, more than one broken wire in the valley between strands in one rope lay length;

(c) A loss of more than one-third of the original diameter of the outer wires;

(d) Rope deterioration from corrosion;

(e) Distortion of the rope structure;

(f) Heat damage from any source;

(g) Diameter reduction due to wear that exceeds six percent of the baseline diameter measurement; or

(h) Loss of more than ten percent of rope strength as determined by non-destructive testing.

§ 77.1436 Drum end attachment.

(a) For drum end attachment, wire rope shall be attached—
   (1) Securely by clips after making one full turn around the drum spoke;
   (2) Securely by clips after making one full turn around the shaft, if the drum is fixed to the shaft; or
   (3) By properly assembled anchor bolts, clamps, or wedges, provided that the attachment is a design feature of the hoist drum. Design feature means either the manufacturer’s original design or a design approved by a registered professional engineer.

(b) A minimum of three full turns of wire rope shall be on the drum when the rope is extended to its maximum working length.

§ 77.1437 End attachment retermination.

Damaged or deteriorated wire rope shall be removed by cutoff and the rope reterminated where there is—

(a) More than one broken wire at an attachment;

(b) Improper installation of an attachment;

(c) Slippage at an attachment; or

(d) Evidence of deterioration from corrosion at an attachment.

§ 77.1438 End attachment replacement.

Wire rope attachments shall be replaced when cracked, deformed, or excessively worn.

Subpart P—Auger Mining

§ 77.1500 Auger mining; planning.

Auger mining shall be planned and conducted by the operator to insure against any hazard to underground workings located at or near such auger operations and all auger holes shall be located so as to prevent:
§ 77.1501 Auger mining; inspections.

(a) The disruption of the ventilation system of any active underground mine;
(b) Inundation hazards from surface water entering any active underground mine;
(c) Damage to the roof and ribs of active underground workings; and
(d) Intersection of auger holes with underground mine workings known to contain dangerous quantities of impounded water.

§ 77.1502 Auger holes; restriction against entering.

No person shall be permitted to enter an auger hole except with the approval of the MSHA Coal Mine Safety and Health District Manager of the district in which the mine is located and under such conditions as may be prescribed by such managers.

§ 77.1503 Augering equipment; overhead protection.

(a) Auger machines which are exposed to highwall hazards, together with all those parts of any coal elevating conveyors where persons are required to work during augering operations, shall be covered with heavy gage screen which does not obstruct the view of the highwall and is strong enough to prevent injuries to workmen from falling material.
(b) No work shall be done under any overhang and, when a crew is engaged in connecting or disconnecting auger sections under a highwall, at least one person shall be assigned to observe the highwall for possible movement.

§ 77.1504 Auger equipment; operation.

(a) Persons shall be kept clear of the auger train while it is in motion and shall not be permitted to pass under or over an auger train, except where adequate crossing facilities are provided.
(b) Persons shall be kept clear of auger sections being swung into position.
(c) No person, including the auger machine operator, shall, where practicable, be stationed in direct line with a borehole during augering operations.
(d) Operator of auger equipment shall not leave the controls of such equipment while the auger is in operation.
(e) Adequate illumination shall be provided for work areas after dark.

§ 77.1505 Auger holes; blocking.

Auger holes shall be blocked with highwall spoil or other suitable material before they are abandoned.