LCB File No. R125-08

PROPOSED REGULATION OF THE ADMINISTRATOR OF THE DIVISION OF INDUSTRIAL RELATIONS OF THE DEPARTMENT OF BUSINESS AND INDUSTRY

EXPLANATION – Matter in *italics* is new; matter in brackets ~~[omitted material]~~ is material to be omitted.

AUTHORITY: NRS 512.131

A REGULATION relating to mine safety and training; adopting regulations defining secondary power supply source; revising NAC 512.158 *et seq*. regarding a second or emergency personnel hoisting device for the main shaft and requiring a secondary power supply source for primary hoists; revising NAC 512.178 regarding Mercury Producing Areas; adopting regulations regarding Ground Support Plans; adopting regulations regarding Surface Mine Rescue Equipment; adopting regulations regarding air sampling standards; adopting regulations regarding hazard communications; and adopting regulations regarding respiratory protection.

Section 1. Chapter 512 of NAC is hereby amended by adding thereto the provisions set forth as sections 3 to 14, inclusive of this regulation.

Section 2. As used in this regulation, unless the context otherwise requires, the words and terms in sections 3 to section 12, inclusive have meanings ascribed to them in section 13 to section 18, inclusive, of this regulation.

Section 3. ***"Hardware and Materials" means associated slings, chokers, anchor straps, pulleys, edge rollers, edge protection, descenders, ascenders, brake bars, carabiners, rigging plates, swivels, beam clamps, tripods, litters, individual rescue harnesses, fall protection harnesses and devices, manufactured load releasing hitches and manufactured mechanical advantage assemblies, devices or systems.***

Section 4. ***"Instructor and Team Member Records of Training" means records identifying instructors and their records providing proof of instructor training specifying low and high angle rescue training using rope, hardware and materials designed and manufactured for rescue use and application.***

Section 5. ***"Mercury producing areas" means any area including, but is not limited to, mill refineries, mill strip circuits, mill maintenance areas, roaster facilities, autoclave pumphouses, and/or any other areas where mercury is generated and/or produced.***

Section 6. ***"Mine Safety and Training Section" (MSATS) is a section of the Division of Industrial Relations.***

Section 7. ***"Primary Ground Support" means ground support that is designed, engineered, installed, and maintained to provide maximum stabilization to control the ground in places where persons work or travel in performing their assigned tasks, including the excavation and extraction process.***

Section 8. ***"Qualified medical laboratory" means a medical laboratory approved by the State Board of Health, pursuant to the provisions of NRS Chapter 652.***

Section 9. ***"Rescue Rope" means rope, webbing and prussic cord, of multiple diameters supplied by rescue rope manufacturers, designed and manufactured exclusively for high and low angle rope rescue and training applications with tensile strength ratings specified by the manufacturer***.

Section 10. ***"Rescue Training Logs" means written documentation reporting the month, day and year of training or instruction of: instructors and team members specifying classroom or practical exercises and number of hours duration of such training along with records or logs of individual instructor completions of surface mine rescue/low and high angle rescue training.***

Section 11. ***"Secondary Ground Support" means any additional rock fixture, tensioned or non-tensioned, wood timber sets, steel sets, arches or spilling, shotcrete with wire mesh, rock bolt baring plates and wire mesh, that supplements the primary ground support.***

Section 12. ***"Secondary power supply source" means a power supply source in addition to, and separate from, the primary power supply source,***

(a) either constructed and installed, or

(b) designed for emergency installation and use in the event of the primary power source failure.

Section 13. ***Ground Support Plan***

1. An operator of an underground mine shall provide MSATS with a written ground support plan.

2. The ground support plan shall:

(a) be prepared by the engineering staff employed and/or contracted at the specific mine site represented.

(b) if using the appropriate rock fixtures:

(i) For rock bolts and accessories addressed in ASTM F432–95, "Standard Specification for Roof and Rock Bolts and Accessories," the mine operator shall:

(A) Obtain a manufacturer's certification that the material was manufactured and tested in accordance with the specifications of ASTM F432–95; and

(B) Make this certification available to an authorized representative of the Mine Safety and Training Section and to the representative of miners.

(ii) Fixtures and accessories not addressed in ASTM F432–95 may be used for ground support provided they:

(A) Have been successful in supporting the ground in an area with similar strata, opening dimensions and ground stresses in any mine; or

(B) Have been tested and shown to be effective in supporting ground in an area of the affected mine which has similar strata, opening dimensions, and ground stresses as the area where the fixtures are expected to be used. During the test process, access to the test area shall be limited to persons necessary to conduct the test.

(iii) Bearing plates shall be used with fixtures when necessary for effective ground support.

(iv) The diameter of finishing bits shall be within a tolerance of plus or minus 0.030 inch of the manufacturer's recommended hole diameter for the anchor used. When separate finishing bits are used, they shall be distinguishable from other bits.

(v) Damaged or deteriorated cartridges of grouting material shall not be used.

(vi) When rock bolts tensioned by torquing are used as a means of ground support,

(A) Selected tension level shall be:

(I) At least 50 percent of either the yield point of the bolt or anchorage capacity of the rock, whichever is less; and

(II) No greater than the yield point of the bolt or anchorage capacity of the rock.

(B) The torque of the first bolt, every tenth bolt, and the last bolt installed in each work area during the shift shall be accurately determined immediately after installation. If the torque of any fixture tested does not fall within the installation torque range, corrective action shall be taken.

(vii) When grouted fixtures can be tested by applying torque, the first fixture installed in each work place shall be tested to withstand 150 foot-pounds of torque. Should it rotate in the hole, a second fixture shall be tested in the same manner. If the second fixture also turns, corrective action shall be taken.

(viii) When other tensioned and nontensioned fixtures are used, test methods shall be established and used to verify their effectiveness.

(ix) The mine operator shall certify that tests were conducted and make the certification available to an authorized representative of the Mine Safety and Training Section.

(c) If using ground support: Ground support shall be used where ground conditions, or mining experience in similar ground conditions in the mine, indicate that it is necessary. When ground support is necessary, the support system shall be designed, installed, and maintained to control the ground in places where persons work or travel in performing their assigned tasks. Damaged, loosened, or dislodged timber use for ground support which creates a hazard to persons shall be repaired or replaced prior to any work or travel in the affected area.

(d) Specify the method of primary and secondary ground support measures to be used during underground excavation for development, production or exploration of ore bodies.

(e) Provide engineering plans, maps or drawings of proposed height and width dimensions of mining excavations, including notations of:

(i) geologic strata,

(ii) faults,

(iii) water encountered, and

(iv) underground workings in proximity whether horizontal or vertical from the proposed working area.

3. The ground support plan shall be used to train miners assigned to perform underground mine excavation duties.

4. A written record shall be kept recording the training time expended and the instructor assigned for each training.

Section 14. *Surface Mine Rescue Equipment*

1. Surface and underground mines that train with and use rescue rope, or hardware and materials used with rescue rope applications shall maintain associated purchase and history records or logs of the rescue rope, hardware and materials.

2. Instructor and mine rescue team members shall record and have available written records of rescue training and/or instruction provided at the mine or elsewhere, detailing the

hours and topics of training. The records shall be available at the mine safety office for inspection by representatives of MSATS upon request.

Section 15. ***Respirable Silica***

The employer shall ensure that no employee is exposed to Crystaline Silica (such as cristobalite, quartz, or tridymite) as respirable dust at, or in excess of 0.05 mg/m3 as an eight (8)-hour time-weighted average (TWA).

Section 16. NAC 512.151 is hereby amended to read as follows:

NAC 512.151 Federal regulations incorporated by reference. The provisions of ***29 C.F.R. Part 1910 Section 134: Respiratory Protection; 29 C.F.R. Part 1910 Section 1000 Table Z-1: Air Contaminants; 30 C.F.R. Part 47: Hazard Communication;*** 30 C.F.R. Part ~~[55 to 57, inclusive, as those regulations exist on October 22, 1982,]~~ ***56: Safety and Health Standards Surface Metal and Nonmetal Mines; 30 C.F.R. Part 57: Safety and Health Standards Underground Metal and Nonmetal Mines***; ***and 30 C.F.R. Part 62: Occupational Noise Exposure*** are hereby incorporated by reference. A copy of the regulations may be obtained from the Department of Business and Industry, Division of Industrial Relations, Mine Safety and Training Section, 400 W. King Street, #210, Carson City, Nevada, free of charge.

Section 17. NAC 512.158 is hereby amended to read as follows:

NAC 512.158 Ladders and Ladderways. (NRS 512.131)

1. The distance between the top of one rung and the top of the next rung on ladders must be 12 inches, and the distance between the centers of the ladder rungs must not exceed 12 inches.

2. All main shafts ~~[or]~~ ***and*** raises equipped with ***personnel*** hoisting machinery must have one compartment partitioned off and set aside as a ladderway~~[.]~~; ***or***

(a) be equipped with a second or emergency personnel hoisting device in the main shaft that is supplied by a secondary power supply source supplying the primary personnel hoisting device; or

(b) be supplemented with a personnel hoisting device in another shaft with a secondary power supply source than that supplying the main shaft power and connected with no less than two underground passageways to the main shaft or ventilation shaft to produce a means of evacuation of underground miners in the event of an emergency; or

(c) be connected by a drift or decline to the surface not requiring a personnel hoist as a means of movement.

3. These provisions do not replace the requirements of 30 C.F.R. 7.11050(a),(b): Escapeways and Refuges.

4. A secondary power supply source must be made available to the primary shaft personnel hoist within 8 hours of the failure of the primary power supply source.

5. A written plan to supply secondary power to the primary personnel hoisting devices must be developed by the operator.

6. Pursuant to NRS 512.160(1), all proposed modifications, changes or engineering updates to the initial plan must be submitted to MSATS before being implemented.

7. Pursuant to NRS 512.170(1)-(5), the plan and construction are subject to inspection by MSATS before or upon completion.

~~[3.]~~ ***8.*** Any ladderway which adjoins any chute compartment must be separated from the chute by a tight partition of sufficient strength and size to hold rock or other material from running into the ladderway.

~~[4.]~~ ***9.*** When work is being carried on immediately above any chute ladderway, the ladderway must be protected by a solid bulkhead ~~[,]~~ for the protection of employees using the manway ~~[,]~~ against falling rock or material. Entrance to the stope or other working place must be provided at the side of the ladderway immediately below the bulkhead.

Section 18. NAC 512.178 is hereby amended to read as follows:

NAC 512.178 Mercury ~~[treatment plants]~~ producing areas. (NRS 512.131) In ***all*** mercury ~~[treatment plants]~~ ***producing areas or where the health and safety of the worker may be at risk***:

1. Hoeing tables must be completely enclosed except for the frontal opening and ***be*** provided with mechanical exhaust ventilation providing a minimum hood face velocity of 100 ***cubic*** feet per minute ***of ventilation*** continuously during each shift.

2. Bottling operations must be as automatic as possible to reduce unnecessary exposure ***to workers***. A pan containing a layer of water must be placed under each mercury flask during the filling ~~[of the mercury flask]~~ to catch any spilled mercury.

3. A polysulfide mercury depressant must be applied at least once a month to surface areas where mercury may accumulate and immediately after all mercury spills.

4. At each ~~[mill for refining mercury]~~ ***mercury producing area***, the operator shall provide nonabsorbent, smooth and impenetrable floors and sidewalls to a height of at least 6 inches under kilns, cooling towers, hoeing tables, retorts, bottling operations and in any other area where mercury may be spilled or otherwise accumulate on floors.

5. General dilution ventilation is required in all areas where other methods are not adequate to maintain the mercury in air concentrations below the ~~[recommended]~~ ***current*** threshold limit value ~~[established]~~ ***recommended*** by the American Conference of Governmental Industrial Hygienists.

6. While performing operations where exposure to mercury vapors in air concentrations may exceed the recommended limit, workers shall wear devices ~~[recommended by the Chief]~~ for respiratory protection ***that are approved by the Mine Safety and Health Administration or National Institute for Occupational Safety and Health (NIOSH)***

7. "No Smoking" signs must be posted in mercury ***and other*** refining areas ***where mercury vapors may be present***, and workers ~~[are]~~ ***shall be*** prohibited from smoking or eating except in designated areas.

8. A shower and change room, ***along with adequate locker space for storage of off-duty clothing***, must be provided ~~[along with adequate locker space for storage of off-duty clothing]~~ ***for workers in mercury producing areas***.

9. ***Mine operators shall submit*** urine samples ~~[must be submitted]~~ monthly to a ***qualified medical*** laboratory for determination of levels of mercury. ***These samples will be taken from workers in any area where mercury-bearing ore is processed, including but not limited to any mercury producing area or where the health and safety of the worker may be at risk.*** ~~[Workers with levels above 0.3 milligrams per liter should be removed from further exposure]~~ ***Workers with a confirmed Biological Exposure Index (BEI) value of 35 ug/gCRT (creatinine) or a single test showing mercury levels above 45 ug/gCRT shall be immediately removed from further exposures*** until their levels of mercury return to normal. ***Additionally, administrative action shall be taken anytime a worker's creatinine corrected mercury level is found to be above 25 ug/gCRT.***

10. The ***mine*** operator shall provide annual physical examinations to all such workers ***described in paragraph 9*** to determine any effects of mercury vapor ***exposure.***

11. ***Training shall be required for all workers who will come into contact with mercury or who have to work in environments where mercury may be present. These workers shall be trained in the following:***

(a) health hazards of mercury;
(b) routes of entry into body;
(c) requirements for personal protective equipment;
(d) effective measures to control mercury; and
(e) appropriate response to spill and clean-up.