EFFECTIVE DATE: 08/26/2010 EXPIRATION DATE: 03/31/2012

PROGRAM POLICY LETTER NO. P10-IV-1

FROM: NEAL H. MERRIFIELD
Administrator for Metal and Nonmetal
Mine Safety and Health

JOHN P. FAINI
Acting Director of Technical Support

SUBJECT: Elevated truck scales at metal and nonmetal mines (30 C.F.R. § 56.9300)

Scope

This Program Policy Letter (PPL) applies to surface metal and nonmetal mine operators, contractors, equipment manufacturers, miners, miners' representatives, and Metal and Nonmetal Mine Safety and Health enforcement personnel.

Purpose

The purpose of this PPL is to clarify that elevated truck scales at metal and nonmetal mines require guardrails under 30 C.F.R. § 56.9300. In addition, this PPL provides guidance on design parameters for guardrails.

Policy

Elevated truck scales are considered elevated roadways if a drop-off exists of sufficient grade or depth that could cause a truck to overturn or endanger persons in the truck. Consequently, under 30 C.F.R. § 56.9300, elevated scales need to be equipped with either berms or guardrails up to mid-axle height of the largest vehicle driving over the scale to restrain the vehicle from driving off the elevated surface.

Guidance on guardrails and design parameters for guardrails.

Curb, Rub Rail, or Guardrail

All elevated scales should be equipped with a curb, rub rail, berm, or guardrail, depending upon its elevation level. For scales having a driving surface elevated

16 inches[1] or less above the ground, the scale should, at a minimum, be equipped with either a substantial curb or rub rail at least 6 inches high.
If the height from the driving surface on the scale to the lowest ground surface adjacent to the scale is greater than 16 inches, either the drop-off hazard can be mitigated by raising the ground[2] to decrease the distance to less than 16 inches or equipping the scale with a guardrail capable of restraining the vehicle from driving off the scale. Any guardrail should extend to at least mid-axle height of the largest truck using the scale.

Most truck scales are provided with a rub rail to guide the vehicle. These are intended to provide a visible, audible, or tactile indication to the truck driver to identify the edge of the roadway. These rails generally are not mid-axle height and typically are not considered structurally sufficient to prevent a vehicle from driving over or through them. Conversely, a guardrail at least mid-axle height is intended to prevent the vehicle from driving through or over it.

Guardrail Design Parameters

When a vehicle impacts a guardrail system[3], there is a transfer of energy from the vehicle to the guardrail system. Specifically, the vehicle's kinetic energy, which is related to its mass and velocity, must be absorbed and deflected by the guardrail system. There are four parameters that should be considered in designing guardrails for a scale: the height of the rails (impact height); the speed of the vehicle while driving onto, over, or off the scale; the loaded weight of the vehicle; and the angle of impact. The mine operator should evaluate each of these variables for their operation and design accordingly. There is no "one-size-fits-all" design for guardrails on truck scales.

Guardrail Height - 30 C.F.R. § 56.9300 requires that the guardrail must be at least mid-axle height on the largest vehicle using the scale.

Background

Two Administrative Law Judge opinions affirm MSHA's position that elevated truck scales fall within the guardrail or berm requirements of § 56.9300 (*Secretary of Labor v. APAC-Mississippi, Inc.,* 26 F.M.S.H.R.C. 811 (2004) and *Secretary of Labor*

[1] If a truck wheel goes over a 6-inch rub rail or curb and has a 16-inch or less drop-off distance to the ground, the truck would not be expected to overturn. A truck's typical 20-inch+ mid-axle height would create greater stability in the event a truck drove off the side of the scale.

[2] Given that the underside of a scale must remain accessible, the ground could be raised using several techniques. For example, a retaining wall can be constructed adjacent to the scale to support an earthen slope at a gentle angle. Other means of reducing the drop off include placement of materials, such as concrete slab or blocks, adjacent to the scale to form an acceptable slope.

[3] Guard rail systems typically consist of a horizontal rail or rails, vertical posts, and connections to the scale frame or ground. Alternatively, a system could consist of an above deck integral steel girder, concrete barrier, or parapet wall and connections to the scale frame or ground.

v. Carder, Inc., 27 F.M.S.H.R.C. 839 (2005)). This policy letter clarifies the Agency's application of 30 C.F.R. § 56.9300 to elevated scales.

Authority

The Federal Mine Safety and Health Act of 1977, as amended, 30 U.S.C. § 801 et seq.; 30 C.F.R. § 56.9300.

Internet Availability

This program policy letter may be viewed on the World Wide Web by accessing the MSHA home page (http://www.msha.gov) and by choosing "Compliance Info" and "Program Policy Letters."

Issuing Office and Contact Person

Metal and Nonmetal Mine Safety and Health
Safety and Health Division
Marvin Lichtenfels, CSP, ARM (202) 693-9606
E-mail: lichtenfels.marvin@dol.gov

Technical Support, Pittsburgh Safety and Health Technology Center
Tery Taylor, (412) 386-6914
E-mail: taylor.terence@dol.gov

Distribution

MSHA Program Policy Holders
Underground and Surface Mine Operators
Underground and Surface Independent Contractors
Special Interest Groups
Miners' Representatives