



October 28, 2019

Mine Safety and Health Administration
Office of Standards, Regulations, and Variances
201 12th Street South
Suite 4E401
Arlington, VA 22202-5452
Electronic Submission: zzMSHA-comments@dol.gov

Dear Ms. McConnell:

Re: Docket No. MSHA-2018-0015, “Escapeways and Refuges in Underground Metal and Nonmetal Mines”

The National Mining Association (NMA) offers the following comments to the Mine Safety and Health Administration (MSHA) concerning MSHA’s proposed Program Policy Letter (PPL) on “Escapeways and Refuges in Underground Metal and Nonmetal Mines,” published in the Federal Register, Vol. 84, No. 145, on July 29, 2019. As explained further below, NMA does not believe that the additional guidance is necessary to clarify the existing standard regarding placement of refuges required by §57.11050(a). In fact, the proposed PPL as currently written will create more confusion for the regulated community and the agency. The only clarification that NMA believes would be helpful is promoting a common understanding of “working place” versus “lowest level” for the purposes of determining location of escapeways at underground metal and nonmetal (MNM) mines.

Introduction and Background

The National Mining Association is the national trade association whose members produce most of the nation’s coal, metals and minerals. NMA’s membership also includes the manufacturers of mining machinery and equipment. NMA has a long history of engagement in efforts to improve safety and health protections for miners. We have worked and continue to work with MSHA, the National Institute of Occupational Safety and Health (NIOSH), equipment manufacturers and others to examine new technologies and techniques to protect miners’ safety and health. The ability of miners to escape from an underground mine in an emergency to the surface, or to safely shelter in a refuge until rescue, is of paramount importance.

The proposed PPL is intended to provide guidance on locating refuge shelters near miners working in underground MNM mines. Refuge shelters are necessary while a secondary

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escapeway is being developed, and miners must have access to a refuge they can promptly and reliably enter and wait for rescue if they cannot escape.

Summary of Plain Language in §57.11050

The regulatory language codified at 30 CFR 57.11050 has been in effect since 1977 and well understood by the industry. Subparagraph (a) of the standard requires every mine to have at least two separate, properly maintained escapeways from the *lowest levels [emphasis added]* to the surface and positioned so that damage to one does not lessen the effectiveness of others. While a second opening to the surface is being developed, a method of refuge must be provided. A second escapeway is recommended, but not required, during exploration and development of the ore body (vein). In addition, the language requires a method of refuge to be provided for every miner who cannot reach the surface from his working place through at least two separate escapeways within one hour using normal exit methods. As prescribed, the refuges must be located so the employee can reach one within 30 minutes after leaving the workplace.

Summary of the Proposed Policy

The proposed PPL, however, goes beyond the plain language of §57.11050 by giving the example that a refuge located 1500 feet from miners walking on a level surface, or within a 10-minute walk while carrying an injured miner in any configuration, would provide the protection the standard requires. The proposal also states that when developing escape and evacuation plans, mine operators should call the district manager to determine the appropriate refuge locations given mine-specific factors.

Factors MSHA Must Consider if the Agency Moves Forward with a Revised Policy

1. Realistic Cost Assumptions

MSHA asserts the PPL's "guidance [on placement of refuges] would not be economically significant as there would be no new costs." However, an agreement the NMA has reviewed between the Secretary of Labor, MSHA and a MNM company to settle enforcement actions issued for violations of §57.11050 that proves the opposite is true.¹ The 2016 agreement required installation of additional refuges within three to four years

Ultimately, the agreement required the operator to purchase and install at least thirty additional refuges by October 31, 2019, with additional refuges purchased, if necessary, by December 31, 2020, to comply with the terms of the agreement. The refuges were strategically placed at various locations among six underground mines subject to the settlement agreement.

¹ Federal Mine Safety and Review Commission, Office of Administrative Law Judges, Docket Nos.: CENT 2016-392, CENT 2016-393, CENT 2016-394, CENT 2016-395, CENT 2016-396, CENT 2016-0279-RM, CENT 2016-0280-RM, CENT 2016-281-RM, CENT 2016-0292-RM and CENT 2016-0293-RM, Settlement Agreement between parties Mine Safety and Health Administration and The Doe Run Company, Judge David P. Simonton, page 3, item 6, November 11, 2016.

The average cost of a new refuge ranges between \$80,000 and \$150,000², with an average of \$80,000, which is not economically insignificant.

2. Adherence to the Distance a Miner Can Travel in 30 Minutes

The plain language of the existing standard requires refuges to be located so that a miner can reach one within 30 minutes from the working place in the event of an emergency. In contrast, the proposed PPL provides an example that envisions a miner to be able to reach the refuge within a 10-minute walk in any configuration while carrying an injured miner. To avoid confusion within the regulated community (miners and mine operators, the public) and inside the agency (its inspectorate) MSHA should provide an example that comports with the standard. For example, based on existing MSHA data, the PPL could provide an example positing that a miner traveling at normal speed can exit an underground MNM mine emergency and walk 5,700 feet on level mine floor in 30 minutes.³ Or, the agency could reference NIOSH data⁴ as in Table 1⁵ that illustrates the distance miners can travel either by crawling, duck-walking, walking with head bent or walking erect in various heights of coal. The distances are those which MSHA uses to determine the location of self-contained self-rescuer devices (SCSR).

Most underground MNM mines today allow miners to walk erect during travel. Consequently, miners can travel the maximum distance while escaping a mine emergency on level ground. Given that some underground MNM mines are multi-directional and multi-angled, passages can be elevated inclines on grades, determining where to locate refuges must be based on mine-specific factors and conditions.

² Figure provided by engineering support, Draeger, October 16, 2019. Excludes maintenance and training.

³ Title 30 CFR §75.1714(c) stipulates the distance between caches of self-contained self-rescuers (SCSR) in underground coal mines in the event miners need to don SCSR during emergency escape. Specifically, §75.1714-4(c)(2) requires SCSR storage locations to be spaced in escapeways at 30-minute travel distances determined by choosing one of two alternative, one of which is determined by applying the distances found in Table 1.

⁴ Trackmeras, Jack D., *et al.*, "Facilitating the Use of Built-in-place Refuge Alternatives in Mines", RI 9698, Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health Research, Office of Mine Safety and Health Research, Pittsburgh, PA, April 2015. The research publication was in response to the MINER Act mandate for refuge alternatives in underground coal mines. The project studied no metal/nonmetal mines. However, the distances described for refuge placement were conservative based on miners' wearing self-contained self-rescuers (SCSR) and the distance they could travel in discrete time frames to SCSR storage locations in airways with dense smoke and with no lifeline. The research and analysis were not intended for and should not be used to locate mobile refuge alternatives in any underground mine. It should be noted also that MSHA established the values in Table 1 as realistic travel distances to SCSRs in emergency situations, and the Office of Mine Safety and Health Research (OMSHR) concurred that these travel distances are realistic. Because these distances are acceptable for SCSR storage locations, OMSHR states that *[the distances]* should also be acceptable travel distances to build-in-place refuge alternatives (RA) if those RA are based on *[passage]* height *[shown in the Table 1]*.

⁵ *Id.*, p 18.

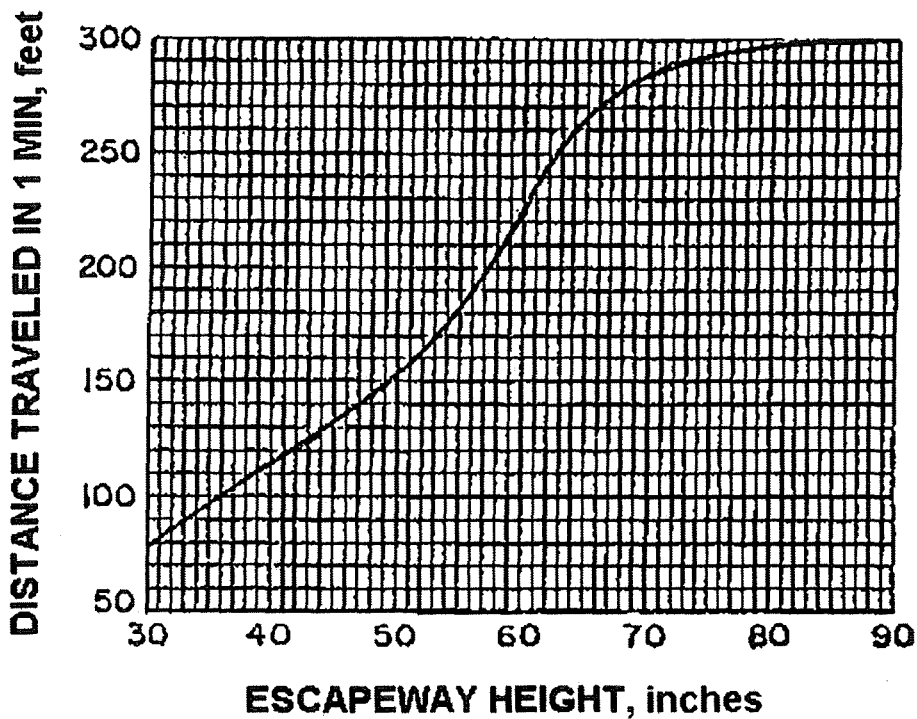
Table 1

Average entry height	Maximum distance between SCSR storage locations (in ft.)
<40 in. (Crawl)	2,200
>40-<50 in. (Duck Walk)	3,300
>50-<65 in. (Walk Head Bent)	4,400
>65 in. (Walk Erect)	5,700

In addition, MSHA's "Escapeway Conversion Chart"⁶ in Table 2 shows how far a miner can be expected to travel at different heights in one minute while wearing a SCSR. Given that underground MNM miners are not hindered by a low passage height as they escape an underground emergency, they can travel the maximum distance. For example, the table indicates a miner can expect to travel approximately 3,000 feet in 10 minutes if the passageway is 7 ½ high.

Table 2

MSHA PROGRAM POLICY MANUAL VOLUME V - PART 75



⁶ Program Policy Manual, Volume V, Part 75, §75.1714-2 Self-Rescue Devices; Use and Location Requirements.

3. To Provide Actual Clarity, MSHA Should Address the Difference Between “Working Place” and “Lowest Level”

Additional clarification is necessary to distinguish “working place” and “lowest level” of the mine. Each refers to a location inside an underground mine, and occasionally the two are used interchangeably. In defining the point from which §57.11050 requires escapeways to originate, there is potential for stakeholders, policy makers and the public to conflate the terms. Each definition, however, is specific to a location where different work is performed. According to MSHA’s definitions, *working place* means any place in or about a mine where work is being performed.⁷ Similarly, the most commonly used dictionary of mining-related terms defines *working place* as the place in a mine at which coal or ore is being actually mined.⁸ Working places in MNM mines follow the ore vein, which leads to a multi-directional, multi-angled and multi-elevation configuration, as opposed to a horizontal configuration, and these working places originate from a “level”⁹ in a mine. As such, a *level* is defined more specifically than a working place and covers a larger contiguous area.

Level means a main underground roadway or passage driven along the level course to afford access to the stopes or workings and to provide ventilation and haulage-ways for the removal of coal or ore. Mines are customarily worked from shafts through horizontal passages or drifts called levels. These are commonly spaced at regular intervals in depth and are either numbered from the surface in regular order or designated by their actual elevation below the top of the shaft.

Considering the context of the proposed PPL as related to underground MNM mining, the definition for working place in the dictionary is instructive in the current discussion because ore is actually mined in the working place in the mine, but the level is where functions, including material haulage and [*main fan*] ventilation, occur through horizontal passages that are spaced at regular depth intervals and carry a designation. In §57.11050(a), the term *lowest level* refers to the horizontal plane to which the ventilation shaft is connected, or where main haulage ways are located.¹⁰ Therefore the lowest level is the point from which two separate escapeways are necessary for miners to reach the surface in an emergency event.

4. A *de facto* Rulemaking

The proposed PPL amounts to a *de facto* rulemaking through policy and guidance because of significant changes the proposal requires MNM mine operators to

⁷ Title 30 CFR §57.2 Definitions

⁸ Thrush, Paul W., and the Staff of the Bureau of Mines, A Dictionary of Mining, Mineral, and Related Terms, U. S. Bureau of Mines, U.S. Department of the Interior, 1968, p 1244.

⁹ *Id.*, p 638.

¹⁰ Although the definition from the BOM specifically mentions ventilation and haulage, there are additional activities that may occur on the *level* horizontal plane, such as rock crushing and material separation.

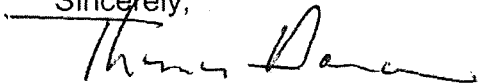
address, including the introduction of a perceived "10-minute rule" which deviates significantly from the 30 minutes referenced in the plain language of §57.11050. To adopt a policy that departs from one of the central requirements of the standard can be construed to mean that MSHA is creating a new requirement with which MNM mine operators and miners must comply.

Conclusion

The current policy interpretation for §57.11050 found in MSHA's metal and nonmetal policy guidance¹¹ should remain in place without change. The NMA does not believe the proposed PPL is necessary if MSHA adheres to the plain language of the standard, especially as it relates to positioning refuges so that a miner "can reach one of them within 30 minutes from the time he leaves his workplace."¹² Disagreements between mine operators and MSHA about the facts surrounding a violation of §57.11050 should continue to be decided through the administrative review process currently in place, including conferences, contests and additional formal review, if necessary.

In determining the distance a miner can travel in 30 minutes, MSHA should take into account the guidance used in other mining regulations, specifically the "Escapeway Conversion Chart" and/or the maximum distance between SCSR storage locations based on passage height.¹³ To the extent MSHA moves forward with the proposed PPL, the agency must remove the examples that reference "1500 feet from miners on a relatively level surface" and "reachable within a 10-minute walk" because they can create the perception among miners, mine operators, the broader public and MSHA's inspectorate that there is a new benchmark for compliance with the standard. The current 30 minute standard provides protection for miners, especially because as an added protection in safely reaching refuges from working places, miners working in underground MNM mines wear self-rescuers that can provide a supply of breathable air for at least 30 minutes (many such devices are rated for longer periods of time) by filtering out noxious gases from the atmosphere or providing oxygen to the miner.

Sincerely,



Thomas Harman
Senior Director

¹¹ Program Policy Manual, Volume IV, Metal and Nonmetal Mines, Subpart J Travelways and Escapeways, §57.11050, pp 40 - 41

¹² 30 CFR §57.11050(b)

¹³ NMA agrees that the location of a refuge is dependent on mine-specific factors and conditions, and MNM district managers should consider Tables 1 and 2 herein, whether miners will travel an incline or on level ground, when working with operators in placing refuges. NMA is not suggesting that placing refuges 9,000 feet from the working place is a safe location; rather, MSHA's chart indicates a miner can travel that distance in relatively high passages in 30 minutes.

From: Harman, Thomas <tharman@nma.org>
Sent: Monday, October 28, 2019 10:25 AM
To: zzMSHA-Standards - Comments to Fed Reg Group
Cc: Harman, Thomas
Subject: NMA Comment Docket No. MSHA-2018-0015 Escapeways and Refuges
Attachments: NMA.PPL.Escapeways.Refuges.pdf

Please see attached comment on the subject docket from National Mining Association.

Best regards,
Tom Harman



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