FEDERAL MINE SAFETY AND HEALTH REVIEW COMMISSION

OFFICE OF THE CHIEF ADMINISTRATIVE LAW JUDGE
1331 PENNSYLVANIA AVE., N.W., SUITE 520N
WASHINGTON, DC 20004-1710
TELEPHONE: 202-434-9900 / FAX: 202-434-9949

August 23, 2024

CARGILL INCORPORATED, Contestant v. SECRETARY OF LABOR, MINE SAFETY AND HEALTH ADMINISTRATION (MSHA), Respondent	CONTEST PROCEEDING Docket No. LAKE 2022-0285 Order No. 9669536; 08/05/20222 Mine: Cargill Deicing Technology- Cleveland Mine Mine ID: 33-01994
SECRETARY OF LABOR, MINE SAFETY AND HEALTH ADMINISTRATION (MSHA), Petitioner v. CARGILL DEICING TECHNOLOGY, Respondent	CIVIL PENALTY PROCEEDING Docket No. LAKE 2023-0013 A.C. No. 33-01994-564077 Mine: Cargill Deicing Technology- Cleveland Mine

DECISION AND ORDER

Before: Judge Sullivan

These two cases, involving a single citation, are before me upon a notice of contest and subsequent petition for assessment of civil penalty under sections 105(a) and (d) of the Federal Mine Safety and Health Act of 1977, 30 U.S.C. § 801 et seq. ("Mine Act"). The Secretary of Labor is alleging that Respondent in the case, Cargill,[1] violated an underground metal and nonmetal mine escape route regulation when it permitted an excessive level of nitrogen dioxide ("NO_2") in the designated secondary escapeway of its Cleveland Mine. Ex. S-1, at 1-2. The standard allegedly violated provides in pertinent part that "[e]scapeway routes shall be— (a) Inspected at regular intervals and maintained in safe, travelable condition . . . ." 30 C.F.R. § 57.11051(a) (2022). For the reasons discussed below, the citation is vacated, and the contest and civil penalty proceedings are dismissed.

[1] The Respondent in the civil penalty proceeding is Cargill Deicing Technology, operator of the Cargill Deicing Technology-Cleveland Mine. The Contestant in the contest proceeding is Cargill Incorporated, controller of the same mine. These corporate entities are jointly represented and, with the assent of the parties, will be collectively considered as "Cargill" in this decision.

I. INTRODUCTION

The citation is based on NO_2 measurements taken on the morning of July 28, 2022, in the Cleveland Mine's return air course as part of an inspection conducted by Marty Morris, an experienced inspector with the Mine Safety and Health Administration ("MSHA"). At the time, the return also served as part of the mine's secondary escapeway. In the citation Mr. Morris issued on August 5, 2022, No. 9669536, he marked the condition as reasonably likely to cause an injury that could be expected to be permanently disabling, thus designating the alleged violation as significant and substantial under the Mine Act. He also marked Cargill's negligence as moderate. Tr. 24-26, 47-48, 52-53, 56.; Ex. S-1, at 1-2.

By the time the citation was issued the condition had abated, as the specific cited NO_2 had dissipated and exited the mine. It was recognized, however, that the condition would be a recurring one, given the continual blasting at the mine that was producing the NO_2. Tr. 170-71, 198-99. Consequently, the citation was not terminated until four days later, after Cargill had made changes to its deployment of miners on the third shift in the mine, and to its ventilation and blasting practices aimed to reduce the concentration of NO_2 in the secondary escapeway. Tr. 261-63, 719-21; Ex. S-1, at 3. To return to normal production levels, Cargill soon thereafter began work on a designated secondary escapeway that would run parallel to the primary escapeway in intake air. Tr. 725, 796, 860-61.

Cargill filed a notice of contest with the Commission on September 2, 2022, and an unopposed motion for expedited consideration five days later. I was assigned the contest case on September 30, 2022.

On October 5, 2022, MSHA proposed a penalty of $700, which Cargill contested. On October 28, 2022, the Secretary filed her Petition for Assessment of Penalty. Ex. S-2. On November 1, 2022, I was assigned the penalty proceeding, and on November 9, 2022, I ordered consolidation of the two dockets.

Eventually the parties agreed to a regularly scheduled hearing, which was held from February 28 through March 2, 2023, in Cleveland, OH. Both parties submitted well-argued post-hearing briefs.

II. FINDINGS OF FACT

A. Background

The Cleveland Mine is a large underground salt mine, developed starting in 1958, that has been driven by various mine operators and extends from a shaft entry in Cleveland, OH, under the waters of Lake Erie, to a point approximately six miles north. Tr. 104-05, Tr. 872; Ex. R-3, at 2. Cargill acquired the mine from Akzo Nobel Salt and the salt that is mined is used to produce road salt products. Tr. 858, Ex. R-3, at 2.

At the Cleveland Mine, miners work one of three shifts: morning, afternoon, and night; the latter of which is largely a maintenance shift. They often use trucks or utility task vehicles

("UTV's") to traverse the long, wide underground passageways. Tr. 703, 1139; Ex. S-7 (MSHA ventilation survey report), at 1.[2]

Cargill, using an explosive mixture of ammonium nitrate and fuel oil ("ANFO"), blasts sections of the mine's face to loosen the salt from its dense formations, leaving salt pillars in place to support the mine's roof. Tr. 36-37, 1131. Crews use heavy machinery to collect the loosened salt and feed it onto a conveyor belt. The belt carries salt to an underground mill that crushes the salt to size before sending it to the surface. Tr. 80, 281.

NO_2, a reddish-brown gas, is a common byproduct of both ANFO detonation and diesel-burning heavy machinery. Tr. 30, 36-37, 334, 1006. As a respiratory irritant, NO_2 can be harmful to human health at certain concentrations, so MSHA regulates miner exposure to NO_2 under the agency's various rules governing harmful airborne contaminants. *See, e.g.*, 30 C.F.R. § 57.5001 et seq. (2022) (underground metal and nonmetal mines). If NO_2 exceeds 5 parts per million ("ppm"), MSHA generally requires that miners be withdrawn from the affected area. 30 C.F.R. § 57.5001(c). Miners, however, may work for reasonable periods of time in elevated concentrations under certain conditions. 30 C.FR. § 57.5005.

Blasting at the face creates the greatest accumulations of NO_2 in the mine. Cargill typically conducts its blasting in the late evening, around 9:00 p.m. or 10:00 p.m., between its second and third shifts. When blasting occurs, the detonation creates a cloud (or "front" or "slug") of gas. It is common, and even expected, that NO_2 levels in such a front would quickly exceed 5 ppm after blasting. Tr. 77, 966-67, 1044.

Aware of the NO_2 generated by its blasting, Cargill has attempted to address and dilute the concentration of the gas—and other hazardous mine gases—with its ventilation system. Cargill uses mechanical means to draw roughly 440,000 cubic feet per minute of fresh air into the mine, which is channeled to the mining units. The fresh air is split so that it can reach each of the four units, to ventilate the fumes generated by blasting and machinery Tr. 1014, 1024-25, 1149; Ex. S-7, at 3; Ex. R-3, at 5.

The fumes are carried outby in the return airway along the production belt line. Tr. 41; Ex. S-3 (mine map). This is true for the front of NO_2 that is created at the faces during blasting; intake air hits the face and takes it into the return airway to be vented south. Tr. 49, 1075, 1080-81; Ex. S-7, at 3.

[2] Mining under Lake Erie poses challenges, including with respect to mine ventilation. Water can enter the mine, bringing with it a risk of creating the hazardous mine gas hydrogen sulfide. In 2017, an inundation of water into the mine's western workings caused the liberation of high levels of hydrogen sulfide. Tr. 369-70; Ex. S-4 (mine map). Cargill pumped water out of the mine as a short-term solution and implemented ventilation controls, such as running hazardous air through a scrubber before routing it out of the mine via the return airstream. MSHA personnel visited the mine "once to twice a week" during this period to monitor gas levels. Tr. 118-20. Ultimately, Cargill stemmed the inundation of water by erecting nine massive concrete bulk heads measuring 75 feet wide, 20 feet thick, and 45 feet high. Tr. 834-35.

Cargill can control the return airflow to dilute the concentration of fumes as they travel down the return airway before exiting the mine through the exhaust shaft. Tr. 45, 841. The faster that gases are flushed through the return, the longer it takes for them to dilute. Tr. 200, 424, 920, 1061. It generally takes around eight hours to move an NO_2 front out of the mine. Tr. 158, 832-36, 912-13, 1054. Cargill has operated the Cleveland Mine with this ventilation system for approximately two decades. Tr. 833-34.

The Cleveland Mine has two escapeways, as required by regulation. *See* 30 C.F.R. § 57.11050(a). The primary escapeway runs along the fresh air intake. Both escape routes are designed for vehicular exit in the event of an emergency. Tr. 59-61, 64.

At the time of the inspection, the secondary escapeway ran along the return airway, and was separated spatially from the primary intake so that damage to one escape route would not compromise the other, as required by section 57.11050(a). Tr. 39-41, 56-57; Ex. S-3, at 3. At hearing, Inspector Morris explained the many reasons that may necessitate a mine evacuation from an underground metal-nonmetal mine, such as the Cleveland Mine, including through a designated secondary escapeway. Tr. 36.

B. Miner Concerns About Elevated NO_2 Levels

At least one Cargill miner had concerns about elevated NO_2 levels before the issuance of the present citation. Christopher Jedlicka, a maintenance mechanic who predominantly worked on the third shift, testified that miners would often travel through the return on their assignments. Tr. 296-97. He stated he had encountered high levels of NO_2 on "[e]asily 50 plus" occasions while working underground—in the mining units, at the mill, and in the return air of the secondary escapeway. Tr. 269, 271, 274-75.

Jedlicka experienced throat irritation and respiratory issues that alerted him to the high NO_2 levels. Tr. 271. According to Jedlicka, there were also "[a] few times" when a supervisor withdrew him and other miners from work near the belt line because the supervisor's handheld monitor sensed NO_2 levels of 12 or 13 ppm. Tr. 332-33. Then, on June 10, 2022, a miner alerted Jedlicka that the previous night he observed the stationary sensor at the "D3" drive register a reading of NO_2 at 33 ppm. Jedlicka had personally seen it register a reading as high as 20 ppm. Tr. 272-73, 320.

Jedlicka testified that he notified MSHA personnel about the elevated NO_2 levels. He spoke first with Carl Graham about his concern regarding raised NO_2 levels. Tr. 336. According to Jedlicka, after the 33-ppm reading in June 2022, he contacted Inspector Morris with renewed concern. Tr. 317.

Steven Horne, Cargill's mining excellence director, testified that he heard other complaints from miners regarding elevated NO_2 levels near the mill in this same time frame. According to Horne, none of the complaining miners noted NO_2 measurements above 5 ppm. Tr. 889-90.

C. July 2022 Inspection and the Cited Condition

MSHA conducted its regular quarterly inspection of the Cleveland Mine in July 2022. Typical quarterly inspections of the large underground mine can last up to three weeks and involve multiple MSHA inspectors. Tr. 102-03. One of the inspectors present during the July 2022 inspection was Mr. Morris. He had previously performed roughly 20 regular inspections of the Cleveland Mine and thus was familiar with Cargill's operations. Tr. 94. During this inspection, Morris became aware of miner complaints regarding high levels of NO_2 during the third shift near the mill, which is in return air, as well as near the shop. Tr. 124-25, 134-38, 716.

Consequently, in lieu of conducting his normal day shift inspection, Morris went underground on the third shift, with the approximately 20 miners working underground the night of July 27-28, 2022. He was accompanied by Cargill's construction safety specialist, Jason Wood. Tr. 31, 62, 77, 142, 691, 740.

While MSHA inspectors at the Cleveland Mine were normally also accompanied by a representative of the union there, the International Brotherhood of Teamsters, no such representative was available that night. Tr. 79-80, 129; Ex. R-3, at 2. Instead, part of the inspection included Christopher Jedlicka, who had begun accompanying Morris on inspections a few days earlier. Tr. 129-31, 142. Earlier in the year he had been designated as a miner's representative. Tr. 312-13.

Inspector Morris's inspection included the belt line in the return, and thus the mine's secondary escapeway. He had never previously inspected the secondary escapeway on the third shift. Tr. 76-77.

To get there, Morris and the men traveled north to near the "dinner hole," which is south of units 41 and 42, where blasting had occurred earlier in the evening. Tr. 42, 44-45, 48-51, 55; Ex. S-3, at 2, Ex S-3MA at 2 (annotated mine map), Ex. S-6 (July-Sept. 2022 blasting report). Morris testified that, as he passed through a doorway to the return airway near the dinner hole, he heard the alarms from each of the gas monitors that he and Wood carried. Tr. 35; Ex S-3MA at 3. Morris's handheld monitor read 10.3 ppm NO_2, and Wood's read 8.2 ppm of NO_2. Tr. 47-48.

Morris and the men traveled south in the intake to take additional readings in the return, following the exhaust path. Tr. 57. In the return across from the belt crew "conex," Morris's monitor registered roughly 6 ppm NO_2, and Wood's monitor registered roughly 5 ppm NO_2. Tr. 51-53, 56-57; Ex. S-3MA at 4. The nearby stationary sensor at the D3 drive registered a reading of 9.39 ppm around that same time. Tr. 61-64; Ex. S-5MA.

The men then continued traveling south to take additional readings, to locate a point where NO_2 was below 5 ppm, to where it would be safe to withdraw miners. Tr. 54-56. That location was determined to be near the 8 West door. Tr. 160; Ex. S-3MA at 6.

Morris testified that three miners were working north of where the elevated NO_2 was discovered. One supervisor was setting charges at the faces, and two members of the belt line crew were working in fresh air to the north of the NO_2 front. Morris also stated that, as they

moved south, he and Wood intercepted a fourth miner, who was preparing to work on the belt line in the secondary escapeway, and asked the miner to leave the area. Tr. 65-67.[3]

According to Morris, these four miners would have been exposed to the NO_2 if an emergency required use of the secondary escapeway, though he stated that it was "not likely at all" that such a need would have arisen that night. Tr. 65-66, 89, 203; Ex. S-3, at 2. Ultimately, the miners were withdrawn that night to an area of the mine outby where the NO_2 exceeding 5 ppm was measured. Tr. 160.

D. Other Observations of NO_2 at the Cleveland Mine

At hearing, the Secretary introduced additional evidence of high NO_2 levels in the secondary escapeway. A printout of NO_2 data taken from the stationary D3 sensor near the belt crew conex reveals the NO_2 concentrations routinely exceed 5 ppm at that point in the secondary escapeway. Ex. S-5a. Sometimes readings exceed 15 ppm, and there is even a reading from June 10, 2022, where the NO_2 concentration was measured at 29.8 ppm. Ex. S-5a at 038. On cross examination, Jason Wood testified that it was "likely" that miners would have been underground at the time of these readings, and that he "would assume" that miners would have been working north of (i.e., inby) the D3 sensor when the highest measurements were made. Tr. 780-81.

The Secretary also introduced evidence of high NO_2 gathered from a post-citation air quality investigation conducted by MSHA at the Cleveland Mine. Bradley Wurl, a general engineer with MSHA's ventilation division, directed the investigation into the typical levels of NO_2 in the mine's secondary escapeway after blasting. Tr. 395. Wurl and his team installed sensors at various points in the secondary escapeway that continually measured the NO_2 levels present after ANFO charges were set off in the mining unit. Tr. 397; Ex. S-7, at 5. Cargill suspended post-blasting production activities during the investigation. *Id*. at 2.

The investigation spanned two nights. On the first night, Cargill set off explosives at 9:00 p.m. in six rooms of Unit 41. Investigators measured a peak concentration of 24.6 ppm NO_2 at 12:27 a.m. at the Unit 41 belt entry to the secondary. NO_2 levels at this sensor stayed above 5 ppm for roughly five hours. Another sensor located near the exhaust entry at the 35B crosscut peaked at 18.6 ppm NO_2 at 12:53 a.m. and stayed above 5ppm for roughly five hours. The sensor at 35B is located just north of Morris's initial readings near the dinner hole. *Id*. at 5.

On the second night, Cargill set off explosives in eight rooms in Unit 42 and three rooms in Unit 41 at 8:45 p.m. One room in each unit misfired, and Cargill shot one additional room in Unit 41 and Unit 42 at 10:45 p.m. and 11:45 p.m., respectively. Investigators measured a peak concentration of 26.5 ppm NO_2 at 10:11 p.m. near the Unit 42 belt entry. NO_2 levels at that location exceeded 5 ppm for roughly six hours. NO_2 concentrations peaked at 14.9 ppm at 11:24 p.m. near the 35A exhaust entry and stayed above 5 ppm for roughly five hours. *Id*. at 5-6.

[3] Wood does not recall seeing this miner. Tr. 718.

E. Health-Related Impacts of NO_2

The Secretary also offered testimony and evidence regarding the health impacts of NO_2. Dr. Michelle Schaper, MSHA toxicologist, submitted a report and testified about the expected physiological effects of inhaling NO_2. Ex. S-8. First, Dr. Schaper described the "sensory-type irritation"—e.g., burning of the eyes, nose, and throat or constriction of the airways—that can be triggered within minutes of exposure to NO_2. Tr. 498. Next, she described the "pulmonary-type irritation"—including fluid buildup in the lungs and pulmonary edema—that can materialize within 18 to 24 hours after exposure. Tr. 500. Pulmonary edema can cause "permanent damage" to the lungs. Tr. 502. Dr. Schaper testified that one would "start to see" both types of irritation with NO_2 concentrations over 5 ppm and that the effects would "escalate with higher concentrations." Tr. 499.

The Secretary elicited testimony regarding the "time limit value" ("TLV") for NO_2. Dr. Schaper testified that the current TLV for NO_2 is 0.2 ppm, which is "considerably lower" than the 5 ppm that MSHA follows pursuant to 30 C.F.R. § 57.5001's incorporation of 1973 TLV's. Tr. 511. She further testified that if a miner was exposed to one minute of an 8.2 ppm NO_2 environment, "it would be very hard to meet the current TLV." Tr. 515. On cross-examination, Dr. Schaper confirmed that the updated TLV is not a "consensus standard[]" and that the TLV represents the level of exposure a worker "could be exposed to . . . over the course of an entire career, repeatedly, and not suffer ill effects." Tr. 523-24.

The parties also introduced evidence regarding concentrations of NO_2 that are "immediately dangerous to life or health" ("IDLH"). The National Institute of Occupational Safety and Health ("NIOSH") determines an IDLH value for a chemical by taking the lowest-observed level of adverse effect upon chemical exposure and reducing that level by a safety factor to account for the variability of human physiology. Ex. R-3, at 13. The MSHA Health Inspection Procedures Handbook lists the IDLH value for NO_2 as 20 ppm, based on NIOSH's 1995 IDLH value. Ex. R-2, at 158. NIOSH updated its IDLH value for NO_2 to 13 ppm in 2017. Ex. R-3, at ii. Dr. Schaper relied on the updated value of 13 ppm when making her expert findings. Ex. S-8, at 7. On cross-examination, she acknowledged that the IDLH value is not the line above which adverse effects are expected. Tr. 541. Rather, she recognized that the IDLH value is a threshold set "to protect workers from those conditions that are going to be dangerous." Tr. 542.

F. Safety Measures Implemented at the Cleveland Mine

Several Cargill supervisors testified about the measures taken by the company to protect its miners against harmful mine gases. Cargill was aware that gases generated during mining, like NO_2, would leave the mine via the return airway, and thus the secondary escapeway. Accordingly, Cargill had rules in place about accessing the return. Jason Wood testified that Cargill miners were required to have a supervisor test the air before entering the return. Tr. 688-89. If a miner was uncertain as to whether the air had been recently tested, Wood said that the miner was to call his supervisor to "ask for an air check." Tr. 689. Wood testified that supervisors "constantly monitor" the air in the secondary and would "evacuate the area" if NO_2

levels exceeded 5 ppm. Tr. 689-90. All supervisors were equipped with an MX4 handheld gas monitor, according to Wood. Tr. 686, 688; Ex. R-5 (list of handheld monitors).

Multiple individuals referenced the placard system designed to warn miners about the air quality in the return airway. Jason Wood testified that, upon measuring high NO_2, supervisors would post "huge" placards on sawhorses at certain entry points to the secondary prohibiting entry. Tr. 709-10. George Campbell, maintenance general foreman, also testified about posting signage when there were high levels of NO_2 in the secondary "so that nobody would travel the returns." Tr. 958-59, 978-79. MSHA Inspector Morris confirmed the placard policy in his testimony. He said that green signs indicate clean air and red signs indicate the presence of high NO_2. Tr. 122-23. Christopher Jedlicka, however, testified that Cargill's placarding policy was not strictly followed or enforced. "It's not uncommon to have [a placard] not flipped or have a green when it is smokey" in the secondary, according to Jedlicka. Tr. 288.

Jason Wood further testified about the emergency training that Cargill miners receive. Wood said that Cargill trains its miners to evacuate the mine using the primary escapeway, which is in fresh intake air. In the event of a fire or an obstruction in the primary, Wood testified that miners are trained to utilize the secondary escapeway only to the extent necessary. Miners are alerted to the location of the fire over the Femco intercom system and are trained to cross back from the secondary to the primary at the earliest nonaffected juncture. Tr. 738-40.

Cargill also introduced testimony about the personal protective equipment ("PPE") available to miners in the case of an emergency. All miners at the Cleveland Mine are issued and required to carry when underground W65 "self-rescuer" respirators ("W65's"), which protect miners from inhaling carbon monoxide ("CO") in the event of a fire. Tr. 75-76, 379-80, 684, 925, 966.

Jason Wood testified that, to supplement the W65's, Cargill maintains several underground caches of Ocenco EBA 6.5 "self-contained self-rescuers" ("Ocencos"). Ocencos provide a limited amount of fresh oxygen to the miner and therefore protect the miner against all airborne contaminants—including NO_2—but they are only meant to be used during an emergency escape. Tr. 684, 764, 925-26, 966. Unlike the W65's, the Ocencos have goggles for eye protection. Tr. 210-11. According to Steven Horne, Cargill was motivated by the Sago, WV mine disaster 15 years earlier to begin stocking Ocencos at all its mines to protect escaping miners from mine gasses in addition to CO. Tr. 844-48.

Wood testified that, around the date of inspection, Cargill stored 88 Ocencos underground, to be used in the event of an emergency. According to Wood, Cargill trained its miners regarding the use and location of the Ocencos. Tr. 685. He further testified that, if a miner neglected to grab an Ocenco during an evacuation drill, management would instruct the miner to utilize the Ocenco in future evacuations. Tr. 758. Inspector Morris was familiar with the Ocencos and their intended use from his previous inspections. Tr. 110-11.

Ms. Christina Stalnaker, an experienced MSHA industrial hygienist, took issue with the degree of protection that the Ocencos afford from NO_2 in the Cleveland Mine's secondary escapeway. Tr. 593, 597-98; Ex. S-9. In her opinion, PPE, such as an Ocenco, is much less

preferable as a method of protecting miners compared to adopting and using controls to reduce the level of NO_2. Ms. Stalnaker also criticized Cargill's expectation that its miners would find and properly don the devices while attempting to evacuate the mine. Tr. 608, 610-11; Ex. S-9, at 4-5.

G. Post-Citation Secondary Escapeway Changes

Cargill, shortly after receiving the citation, altered its blasting schedule and positioning of its third-shift miners, so that miners would not work in locations north that could necessitate them using the secondary escapeway after blasting resulted in NO_2 levels exceeding 5 ppm in the return. Tr.720-22, 796. During this interim period, blasting only occurred once on one unit at the end of the second shift. Consequently, the activities that could take place underground during the third shift were reduced. Tr. 721-23, 857-59, 919-20; Ex. R-6, at 5.

These changes also reduced the amount of road salt the Cleveland Mine could produce for the upcoming winter season. Tr. 858-59. Cargill evaluated other abatement options, but most would have required months to implement, significant resources, and modifications to the mine's ventilation system and emergency action plan. Tr. 723-724, 859-861, 869-76, 915-16.

To return to normal production levels, Cargill's management, after weighing several options, approved the relocation of the secondary escapeway to an intake air course that would run parallel and next to the primary escapeway. Tr. 860-61, 875-76. Upon completion of the project around three months later, the return airway no longer served as the secondary escapeway, though miners are trained to use it as a third escape option in the event both others are unavailable. Tr. 731, 861.[4]

III. FURTHER FINDINGS OF FACT AND CONCLUSIONS OF LAW

At issue in this case is whether a violation of section 57.11051(a)'s requirement that "[e]scape routes shall be . . . maintained in safe, travelable condition" has been established by the Secretary. "In an enforcement action before the Commission, the Secretary bears the burden of proving any alleged violation." *Wyoming Fuel Co.*, 14 FMSHRC 1282, 1294 (Aug. 1992) (citing *Jim Walter Res., Inc.*, 9 FMSRHC 903, 907 (May 1987)). To prevail, the Secretary must prove the cited violation by a "preponderance of the evidence," which simply requires the trier of fact "to believe that the existence of a fact is more probable than its nonexistence." *RAG Cumberland Res. Corp.*, 22 FMSHRC 1066, 1070 (Sept. 2000); *Garden Creek Pocahontas Co.*, 11 FMSHRC 2148, 2152 (Nov. 1989).

The citation describing the alleged violation of section 57.11051(a) reads as follows:

> The designated secondary escapeway along the D5 beltline from the entry door adjacent to the dinner hole to the 8 West door was not properly maintained in a safe

[4] A new secondary required construction activities over the course of two-and-one half months, new training protocols, development of brattice, curtain, and belt lines, at a cost of approximately $750,000 for materials and labor. Tr. 725, 862-64.

> travelable condition. The secondary escapeway is located in return air and production belt lines from the working faces. The post-blast gas readings along the route indicated Nitrogen dioxide (NO[2]) levels up to 8.2 ppm along the route. Miners normally work in the area that is affected at this time, throughout the shift along the beltline performing maintenance and travel through the area while using the designated escapeway for access to and from work areas as well as escape during emergency situations and evacuation drills. Continued exposure to elevated levels of NO[2] gas would likely lead to injury from Inhalation, skin and/or eye contact resulting in burning, respiratory system damage, and tachycardia. At the time of the high gas readings there were no miners working in the areas with the elevations of NO[2]. There were 4 miners working in the mine that would be affected by using the secondary escape during an emergency situation that had elevated NO[2] gas above 6.1 ppm. Miners were removed from the portions of the mine where the gases would prevent them from working and relocated to an area closer to the mill where the gases were measured and found to be at a compliant range. The operator has two supervisors making ventilation adjustments and are taking continued air reading to assure the gases were being ventilated out of the mine. the termination time has been set to allow time for the adjustments and the venting of gases to occur.

Ex. S-1, at 1-2.

At hearing, the inspector clarified the condition and conduct that was being charged, thus reducing the citation's potential scope. He explained that the passage stating "[m]iners normally work in the area that is affected at this time, throughout the shift along the beltline performing maintenance and travel through the area while using the designated escapeway for access to and from work areas" was included merely as background. The passage refers to the fact that miners' normal work or travel *could* take them into the area of the mine cited. Tr. 189-92.

On the night of the inspection, however, no miners were observed in the area. The Secretary does not allege that any miner was actually exposed to the NO_2 that Inspector Morris found that night, as the citation goes on to explain that: "[a]t the time of the high gas readings there were no miners working in the areas with the elevations of NO[2]." Tr. 64, 222; Ex. S-1, at 1; *see also* S. Br. at 2.[5]

What the Secretary *is* alleging is that Cargill violated section 57.11051(a) on the night of the inspection when it permitted miners to work in *other* areas of the mine. Specifically, such areas where, should there have been a need for those miners to evacuate the mine in an emergency using the secondary escapeway, it would have been unsafe for them to have done so because of the levels of NO_2 the inspector measured in the escapeway that night. S. Br. at 21-23.

[5] It also became clear at the hearing that, contrary to the citation, Cargill did *not* conduct mine evacuation drills using the secondary escapeway during the times that excessive levels of NO_2 were present. Tr. 193-94, 717. Consequently, that part of the citation is also not being pursued by the Secretary.

Cargill was cited for the presence of NO_2 measuring as high as 8.2 ppm in the secondary escapeway on the night of the inspection. Cargill does not dispute that the Secretary has adequately demonstrated the presence that night in the mine's designated secondary escapeway of NO_2 at least at a level of 8.2 ppm. Tr. 47-48, 700-01.

Nor does Cargill dispute that the Secretary established that miners were working inby where that level of NO_2 was measured. Inspector Morris testified credibly on this point. Tr. 65-66, 704-05. Thus, should those miners have had to evacuate the mine in an emergency that necessitated using that part of the secondary escapeway at that time, they would have been exposed to at least that level of NO_2.

The primary remaining issue in the case is the overriding one: the circumstances in which the presence of NO_2 in an escapeway violates section 57.11051(a)'s requirement that the escapeway "be maintained in safe, travelable condition." The Secretary's theory that the levels of NO_2 found by Inspector Morris establish a violation of section 57.11051(a) relies almost entirely upon another underground metal-nonmetal regulation, 30 C.F.R. § 57.5001. It mandates the withdrawal of miners from any area of a mine where there is an airborne contaminant governed by section 57.5001(c) at a level that exceeds the limit set by the regulation for that contaminant. In the case of NO_2, the Secretary maintains that limit is 5 ppm. S. Br. at 23 & n.33. The Secretary also relies upon Dr. Schaper's testimony to contend that miners forced to evacuate through an atmosphere containing levels greater than 5 ppm NO_2 "would have their travel impeded and/or would suffer negative health effects." *Id*. at 21, 23.

While an express exception to the withdrawal requirement of section 57.5001 is found in 30 C.F.R. § 57.5005, the Secretary argues that exception is inapplicable here. She does so based on her interpretation of section 57.5005 and what she considers to be the limited protection provided by the Ocenco respiratory protection devices that Cargill expects its miners to use when they encounter excessive NO_2 in the mine, including while exiting it through the secondary escapeway. *Id*. at 24-29.

Cargill responds that it would be unlikely for a miner to encounter NO_2 over 5 ppm while escaping via the return airway, and in the event a miner does, any encounter would be short. C. Br. at 13. Cargill relies on Mr. Horne and Mr. Hartsog's testimony that after blasting, the front of NO_2 moves much slower than an escaping miner would, and the concentration dilutes as the front travels along the return. *Id.* So, behind and ahead of the front, the concentration likely will not exceed 5ppm. *Id.* Cargill also points to the findings of the American Industrial Hygiene Association's ("AIHA") that a short encounter with 5ppm of NO_2 poses no safety risk, especially when a miner wears an Ocenco SCSR. *Id.* at 14. Cargill further argues that the secondary escapeway is travelable as it is still passable, by providing miners with a functional means to escape relatively unimpeded. *Id.* at 12-13. Alternatively, Cargill contends that the Secretary's "fleeting-risk theory" interpretation of 30 C.F.R. § 57.11051(a) is erroneous, because it contravenes the regulation's text and purpose, departs from previous agency positions, and provides no fair warning to mine operators of prohibited or required conduct. *Id.* at 17, 19-20, 24-26.

A. Interpreting sections 57.11051(a), 57.5001, and 57.5005

1. Parties' Arguments

To establish that the respirable atmosphere of Cargill's secondary escapeway that night rendered it unsafe or untravellable in violation of section 57.11051(a), the Secretary primarily points to the regulation designed to govern miner exposure limits for airborne contaminants in underground metal-nonmetal mines, 30 C.F.R. § 57.5001. That standard provides in pertinent part that:

> Except as permitted by [section] 57.5005—
>
> (a) . . . the exposure to airborne contaminants shall not exceed, on the basis of a time weighted average, the threshold limit values adopted by the American Conference of Governmental Industrial Hygienists [ACGIH], as set forth and explained in the 1973 edition of [ACGIH]'s publication, entitled "TLV's Threshold Limit Values for Chemical Substances in Workroom Air Adopted by ACGIH for 1973," pages 1 through 54 , which are hereby incorporated by reference and made a part hereof. . . . . Excursions above the listed thresholds shall not be of a great magnitude than is characterized as permissible by the Conference.
>
> . . . .[6]
>
> (c) Employees shall be withdrawn from areas where there is present an airborne contaminant given a "C" designation by the Conference and the concentration exceeds the threshold limit value listed for that contaminant.

30 C.F.R. § 57.5001(a) & (c) (2022).[7] As will be explained in further detail later herein, this standard is routinely read to require that miners be immediately withdrawn from any area of a mine where there is NO_2 at a level exceeding 5 ppm. The Secretary argues that, therefore, an escapeway that includes such a prohibitive level of NO_2 is not being safely maintained as required by section 57.11051(a). S. Br. at 23 & n.34.

As for the referenced exception to section 57.5001, section 57.5005 provides in part pertinent for present purposes that:

> Control of employee exposure to harmful airborne contaminants shall be, insofar as feasible, by prevention of contamination, removal by exhaust ventilation, or by dilution with uncontaminated air. However, where accepted engineering

[6] Section 57.5001(b) treats asbestos separately as an airborne contaminant for exposure limit purposes. *See* 73 Fed. Reg. 11,284, 11293-96, 11,304 (Feb. 29, 2008).

[7] Earlier this year, section 57.5001 was amended to reflect that it will eventually reference MSHA's new respirable crystalline silica regulations. *See* 89 Fed. Reg. 28,218, 28,470 (Apr. 18, 2024).

> control measures have not been developed or when necessary by the nature of work involved (for example, while establishing controls or occasional entry into hazardous atmospheres to perform maintenance or investigation), employees may work for reasonable periods of time in concentrations of airborne contaminants exceeding permissible levels if they are protected by appropriate respiratory protective equipment.

30 C.F.R. § 57.5005 (2022).[8]

Cargill maintains that, should miners have to exit through a segment of the secondary escapeway containing a level of NO_2 in violation of section 57.5001, those miners could protect themselves by using their Ocencos. Tr. 893-94. Cargill contends that such reliance would be consistent with the terms of section 57.5005, so even if section 57.5001 was relevant to determining a section 57.11051(a) violation (which Cargill does not concede), the section 57.5005 exception to section 57.5001 renders consideration of section 57.5001 moot in this instance. C. Br. at 14-15. The Secretary, however, disagrees that section 57.5005 can be interpreted to recognize Cargill's anticipated reliance on its Ocenco SCSR's as compliant with the regulation. S. Br. at 24-29.

As for the application of these two other standards in this case, no miners were working or otherwise present in or even near the area in which the cited level of NO_2 was discovered during the inspection, so Cargill was not cited with violating section 57.5001. Nevertheless, the Secretary requests that, in deciding whether Cargill was in violation of the "safe, travelable condition" clause of section 57.11051(a) on the night of the inspection, I look to what she argues is the applicable contaminant exposure limit, as derived from section 57.5001, and apply it to the hypothetical circumstance of the miners inby that night having to exit the mine in an emergency via the secondary escapeway. She also requests I find that, in such a scenario, the requirements of the 57.5005 exception to that section 57.5001 contaminant limit would not have been met by Cargill.

While I appreciate that section 57.5001, and thus section 57.5005, are at least arguably relevant to the circumstances here, such an interpretative approach is not easy to accommodate under Commission cases applying those standards. The Commission has previously only addressed the regulations in the fact-specific context in which it was uncontested that miners were within a mine area where there was allegedly a contaminant present at excessive levels. *See Tamasco, Inc.*, 7 FMSHRC 2006, 2010 (Dec. 1985) ("It is clear from the language of the Secretary's standard that section 57.5[00]5 establishes an exception to the general mandate of section 57.5[00]1 which requires that airborne contaminants not exceed their TLV, and that the application of section 57.5[00]5 is conditioned specifically on a determination that miners are exposed to excessive levels of airborne contaminants in violation of section 57.5[00]1."); *see also Climax Molybdenum Co.*, 2 FMSHRC 2748, 2751 (Oct. 1980) (both parties took the position that "without a violation of section 57.5[001], the issue of whether the engineering

[8] Further provisions that discuss "appropriate respiratory protective equipment" will be set forth later herein.

control requirements of section 57.5[005] are met does not arise."), *aff'd on other grounds*, 703 F.2d 447 (10th Cir. 1983).[9]

Nevertheless, because the Secretary relies upon interpretations of sections 57.5001 and 57.5005 as key components to establishing that section 57.11051(a) was violated by Cargill here, I will include in my analysis the parties' arguments on the application of the two standards to the *potential* that Cargill miners would use the secondary escapeway at a time when NO_2 exceeded 5 ppm.

2. Rules of Regulatory Interpretation

The same considerations that govern a court's evaluation of Secretarial interpretations of MSHA regulations govern the Commission's review at the administrative level. *Martin v. OSHRC,* 499 U.S. 144, 154-55 (1991); S. Rep. No. 95-181, at 49 (1977), *reprinted* in Senate Subcomm. on Labor, Comm. on Human Res., *Legislative History of the Federal Mine Safety and Health Act of 1977*, at 637 (1978) ("*Legis. Hist.*"). The Commission, citing the most recent Supreme Court precedent on such interpretations, *Kisor v. Wilkie*, 588 U.S. 558, 574-82, 139 S. Ct. 2400, 2415-19 (2019), has summarized its approach to Secretarial interpretations of Mine Act standards as follows:

> Where the language of a regulatory provision is clear, the terms of that provision must be enforced as they are written unless the regulator clearly intended the words to have a different meaning or unless such a meaning would lead to absurd results. *See Dynamic Energy, Inc.*, 32 FMSHRC 1168, 1171 (Sept. 2010) (citations omitted). In the event that the language is ambiguous, deference to the Secretary's interpretation may be appropriate if the interpretation is reasonable, authoritative, within the Secretary's expertise, and reflects fair and considered judgment. However, questions of deference do not arise unless the regulation is determined to be genuinely ambiguous after all the traditional tools of construction are exhausted.

Richmond Sand & Stone, LLC, 41 FMSHRC 402, 403-04 (Aug. 2019); *see also GMS Mine Repair v. FMSHRC*, 72 F.4th 1314, 1320 (D.C. Cir. 2023) (applying *Kisor* to conclude that MSHA penalty regulations were ambiguous), *cert. denied* 144 S. Ct. 1095 (2024); *Cactus Canyon Quarries, Inc. v. FMSHRC*, 64 F.4th 662, 665 (5th Cir. 2023) (applying *Kisor* to affirm Commission Judge's decision that regulation had a plain meaning as applied).

The United States Court of Appeals for the District of Columbia Circuit—ironically in a case involving an interpretation of closely related 30 C.F.R. § 57.11050—stressed the importance of the Secretary forthrightly stating a position on whether she considers the

[9] Similarly, MSHA's guidance with respect to the two standards is limited to situations in which they are being applied to actual, concrete circumstances. *See* MSHA IV Program Policy Manual 32 (Release IV-21 Feb. 2003) (directing MSHA inspectors to "[i]ssue one []57.57.5001(a)/.5005 citation for each miner whose exposure to airborne contaminant(s) exceeds the contaminant's enforcement level.").

regulatory language governing a case to be clear, or whether she instead views it as ambiguous with respect to the question at hand. *See Akzo Nobel Salt v. FMSHRC*, 213 F.3d 1301, 1303-05 (D.C. Cir. 2000) (holding the phrase "properly maintained" in section 57.11050(a) to be ambiguous with respect to the issue of the point at which a planned outage of one of two hoists would constitute a violation of the two-escapeway requirement of that standard). Here, however, the Secretary's post-hearing brief does not directly state whether she views the key terms of any of the regulations at issue—sections 57.11051(a), 57.5001, and 57.5005—to be clear or ambiguous as applied in this case.

Given the absence of a Secretarial statement that there is a plain meaning application of the three regulations in this instance, it is not unreasonable to assume she views them to be ambiguous as applied to the facts of this case. However, in *Kisor*, the Supreme Court explained at length the circumstances under which deference to an agency's interpretation of a regulation is appropriate, an issue the Court previously addressed in *Auer v. Robbins*, 519 U.S. 452 (1997). In *Auer*, the Court held that an agency's interpretation of its own regulation is "controlling unless plainly erroneous or inconsistent with the regulation." *Id.* at 461.[10]

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[10] In an earlier decision in a pending case, the D.C. Circuit cited with approval its holding in *Akzo Nobel* in concluding that the Secretary's interpretation of the jurisdictional language of the Mine Act was deficient because it was based upon a plain meaning interpretation of statutory language that the court found to instead be ambiguous. *See Sec'y of Labor v. KC Transport, Inc.*, 77 F.4th 1022, 1029 (D.C. Cir. 2023). That decision was subsequently vacated by the Supreme Court and remanded to the D.C. Circuit for further consideration in light of the Court's recent decision in *Loper Bright Enterprises v. Raimondo*, 603 U. S. ___, ___, 144 S. Ct. 2244, 2257-73 (2024). *See* ___ S. Ct. ____, 2024 WL 3259666 (Mem) (July 2, 2024).

In *Loper Bright*, the Court overruled its decision in *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984), regarding the level of deference to be accorded to an agency interpretation of a statute it is charged with administering. In *Kisor*, the Court stated that agency regulatory interpretations receive no greater deference than agency statutory interpretations. 588 U.S. at 576. Consequently, it is quite conceivable that *Loper Bright* will eventually lead to *Auer* also being overruled.

Because I find that the Secretary's interpretations at issue here do not meet the requirements for *Auer* deference, any subsequent demise of *Auer* should not impact this decision. I also note that the Court's ruling in *Loper Bright* was based on its reading of the judicial review provision that governed that case, section 706 of the Administrative Procedure Act ("APA"), 5 U.S.C. § 706. 144 S. Ct. at 2257-73. Section 507 of the Mine Act provides that "[e]xcept as otherwise provided in this Act, the provisions of sections 551-559 and sections 701-706 of title 5 of the United States Code shall not apply to the making of any order, notice, or decision made pursuant to this Act, or to any proceeding for the review thereof." 30 U.S.C. § 956.

The Mine Act does not provide that section 706 of the APA is applicable to Mine Act proceedings; instead, it includes its own judicial review provision, section 106(a)(1). *See* 30 U.S.C. § 816(a)(1). In enacting section 106, Congress stated that it expected that "weight" would be given by the Commission and the courts to the Secretary's interpretation of the Mine Act and

GMS helpfully summarized the preconditions that must be met under *Kisor* before it is appropriate to accord *Auer* deference to an agency regulatory interpretation:

> First, courts must determine whether the regulation is "genuinely ambiguous" by "exhaust[ing] all the 'traditional tools' of construction." These traditional tools include the "text, structure, history, and purpose of [the] regulation." Second, even if a regulation is genuinely ambiguous, "the agency's reading must fall 'within the bounds of reasonable interpretation.'" To this end, the work that courts do reviewing the text, structure, history, and purpose form the "outer bounds" of what is reasonable. Lastly, courts must take a third step and identify the existence of "important markers for ... [when] deference is ... appropriate." What should persuade a court is the "character and context" of the agency interpretation—namely, the authoritativeness of the position asserted, implication of the agency's substantive expertise, and whether the interpretation reflects the agency's "fair and considered judgment."

74 F.4th at 1420 (citations omitted and alterations in original). Consequently, in addressing the interpretation issue here, I will attempt to follow as best as possible the steps laid out in *Kisor*, not only in interpreting section 57.11051(a), but also sections 57.5001 and 57.5005 to the extent the Secretary relies on those regulations.

3. Whether the Regulations are Ambiguous in this Instance

Applying the first step of *Kisor*, a determination of whether there is genuine ambiguity with respect to the application of section 57.11051(a) in this case, begins with examining the text of section 57.11051(a). *See id.* at 1420. As noted, the key phrase is "maintained in safe, travelable condition."[11]

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its regulations. *See* S. Rep. No. 95-181, at 49, *Legis. Hist.* at 637 ("Since the Secretary of Labor is charged with responsibility for implementing this Act, it is the intention of the Committee, consistent with generally accepted precedent, that the Secretary's interpretations of the law and regulations shall be given weight by both the Commission and the courts.").

[11] As background, what is now section 57.11051(a) was first promulgated in 1969 as a mandatory standard to take effect the following year at 30 C.F.R. § 57.11-51(a), by the Secretary of the Interior after notice-and-comment rulemaking conducted pursuant to section 6 of the Federal Metal and Nonmetallic Mine Safety Act ("Metal-NonMetal Act"). *See* 34 Fed. Reg. 12,517, 12,522 (July 31, 1969). While Mine Act section 306(a) repealed that earlier legislation, section 301(b)(1) of the Federal Mine Safety and Health Amendments Act of 1977 provided for the continued effectiveness, under the enforcement authority of the Secretary of Labor and MSHA, of the mandatory metal and nonmetal mine health and safety standards issued by the Secretary of the Interior, until such time that new or revised standards were issued. 30 U.S.C. § 961(b)(1). Other than its recodification as section 57.11051(a) (*see* 50 Fed. Reg. 4048, 4052, 4084 (Jan. 29, 1985)), the original section 57.11-51(a) has not been revised or amended. Also, as with section 57.11-51(a) having been originally placed within former section 57.11 entitled "Travelways and escapeways," so section 57.11051(a) resides in "Subpart J—Travelways and Escapeways" of Part 57.

Neither "safe" nor "travelable" are defined in 30 C.F.R. Part 57. *See* 30 C.F.R. § 57.2 (setting forth definitions of numerous other terms found in Part 57, including "safety can," "safety fuse," and "safety switch"). Given this absence, the first aid in construing the terms is their ordinary meanings, which are best found in dictionary definitions from before or around the time the standard employing the terms was adopted. *See Peabody Twentymile Mining, LLC v. Sec'y of Labor*, 931 F.3d 992, 997 (10th Cir. 2019); *see also Sumpter v. Sec'y of Labor*, 763 F.3d 1292, 1296 (11th Cir. 2014) (relying upon definitions of terms used in Mine Act from dictionaries published prior to its passage).

Around the time that section 57.11051(a) was adopted, "safe" was defined to mean "free from damage, danger, or injury; secure" (Webster's New World Dictionary of the English Language 1253 (2d College Ed.) (1972)), or "secure from liability, to harm, injury, danger, or risk: a safe place." The Random House Dictionary of the English Language 1259 (1973). As for "travel," it was defined to mean to go to from one place or point to another. Webster's at 1513; Random House at 1508.

None of these definitions establish, by themselves, that an escapeway with a respirable atmosphere containing greater than 5 ppm of NO_2 is neither safe nor travelable. Nor do the definitions foreclose considering an escapeway with such a respirable atmosphere to be safe or travelable. Thus, an examination of the text does not establish a clear meaning of "safe, travelable condition", which makes it difficult to conclude that section 57.11051(a) is unambiguous in this instance. *Cf. GMS*, 72 F.4th at 1322 (concluding standard was "genuinely ambiguous" because "[w]hile [its] structure, history, and purpose favor the Secretary's reading, the text lacks useful detail.").

Moving on to whether the purpose or history of section 57.11-51(a)/57.11051(a) points to a clear meaning of the standard, the 1969 preamble to its original adoption is entirely silent regarding what "safe, travelable condition" was intended to mean, not only with respect to the respirable atmosphere of a designated escape route, but also any other aspect of it as well. The preamble to former section 57.11-51 and the other underground metal-nonmetal regulations adopted at that time only states that the standards were ones "developed in conjunction with the Underground Mines Advisory Committee" and "about which there were no comments or objections." 34 Fed. Reg. at 12,517.[12]

Equivalent underground coal mine escapeway standards shed greater light on what is meant by requiring an escapeway to be kept in "safe, travelable condition." An escapeway

[12] Section 6 of the Metal-NonMetal Act permitted the Secretary of the Interior, in promulgating health and safety regulations, to rely upon the advice of committees that the Secretary had established pursuant to section 7 of the legislation. Those proposed regulations on which comments were received were finalized approximately six months later. They included section 57.11-51's companion standard, section 57.11-50 (later revised and recodified as section 57.11050), which mandated that underground metal and nonmetal mines "have two separate properly maintained escapeways to the surface which are so positioned that damage to one shall not lessen the effectiveness of the other, or a method of refuge shall be provided when only one opening to the surface is possible." *See* 38 Fed. Reg. 3670, 3675 (Feb. 25, 1970).

standard for underground coal mines was first established by the Federal Coal Mine Health and Safety Act of 1969 ("Coal Act"). Section 317(f)(1) of the Coal Act, which took effect in 1970 around the effective date of the first sets of Part 57 escapeway regulations, provided in pertinent part that:

> [A]t least two separate and distinct *travelable* passageways which are *maintained* to insure passage at all times of any person, including disabled persons, and which are to be designated as escapeways, at least one of which is ventilated with intake air, shall be provided from each working section continuous to the surface escape drift opening, or continuous to the escape shaft or slope facilities to the surface, as appropriate, *and shall be maintained in safe condition* and properly marked.

30 U.S.C. 877(f)(1) (1970) (emphases added). The statutory provision was later carried over to the Mine Act without change, and it was again limited to coal mines. *See* Mine Act Title III—Interim Mandatory Standards for Underground Coal Mine; 30 U.S.C. 861(a) ("[t]he provisions of section 302 through 318 of this title shall be interim mandatory safety standards applicable to all underground coal mines . . . ."). [13]

The statutory provision would be included verbatim in MSHA's underground coal regulations until 1992. Before that, in 1988, MSHA began the first in what would be a series of rulemakings over approximately twenty years in which the coal mine escapeway regulations would be amended. *See* 30 C.F.R. § 75.380 et seq.; 53 Fed. Reg. 2382, 2407-09 (Jan. 27, 1988)

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[13] The reasoning behind section 317(f)(1)'s requirement that two separate escapeways be provided and maintained in travelable condition in underground coal mines was explained in the Coal Act's legislative history by way of examples of mine disasters occurring in both coal and metal/nonmetal mines:

> Mine fires, extensive collapse of roof, or similar occur[r]ences may completely block the regular travelway between the working section and the surface, thus cutting off escape in an emergency unless an alternate route is provided to the surface. As recently as March 1968, 21 men at a salt mine lost their lives because a second escapeway was not provided. And in 1960, 18 men died in a coal mine fire because a travelable second escapeway was not provided.

S. Rep. No. 91-411, at 83, *reprinted in* Legislative History of the Federal Coal Mine Health and Safety Act of 1969, at 209 (1975).

The first mine disaster cited occurred as the result of a fire at Cargill's Belle Isle Salt Mine, where a second escapeway was planned but not yet developed. U.S. Dep't of Interior, Bureau of Mines, Final Report on Major Mine-Fire Disaster, Belle Isle Salt Mine, Cargill, Inc., St. Mary Parish, LA 3 (undated). The second was at a coal mine, where ground conditions in the designated alternate escapeway prevented its use. U.S. Dep't of Interior, Bureau of Mine, Final Report on Major Mine Fire Disaster, No. 22 Mine, Island Creek Coal Co., Pine Creek, Logan Cty., WV 6 (undated).

(proposed rules on safety standards for underground coal mine ventilation). In the preamble to one of those later rulemakings, MSHA explained that:

> [w]hen a fire, explosion or other emergency necessitates an immediate evacuation of a mine, the designated route for miners to leave the mine is the escapeway. The escapeway should be appropriately located and designed to be free of obstructions and hazards to assure safe passage from the hazardous underground environment.

61 Fed. Reg. 9764, 9810 (Mar. 11, 1996).[14]

That series of rulemakings resulted in escapeway regulations for coal mines much more extensive than those for underground metal and nonmetal mines. S*ee Consol Pennsylvania Coal Co.*, 44 FMSHRC 691, 695 (Dec. 2022) ("[t]he Commission has noted that '[s]ection 75.380 contains extensive requirements as to the location and physical attributes of escapeways'") (quoting *Am. Coal Co.*, 29 FMSHRC 941, 948 (Dec. 2007)).[15] Nevertheless, the stated purpose of section 75.380—to provide underground coal miners with escapeways that are "free of obstructions and hazards to assure [their] safe passage from the hazardous underground environment"—would seem to explain the intent behind section 57.10151(a)'s requirement that an escapeway in an underground metal or nonmetal mine be "maintained in safe, travelable condition."

This purpose has been looked to in countless instances in which the Commission and its Judges have decided cases involving citations alleging violations of MSHA escapeway regulations. As far as I can tell, however, all those cases involved physical impediments to

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[14] The Commission had recognized as much even prior to that, when, in considering whether an underground coal mine escapeway was being maintained consistent with the requirements of section 317(f)(1) of the Mine Act, it looked to whether an area of the mine at issue could serve its intended "general function[]" as an escapeway that was "passable." *See Utah Power & Light Co.*, 11 FMSHRC 1926, 1930 (Oct. 1989).

[15] For instance, MSHA's coal mine escapeway regulations, unlike its regulations governing metal and nonmetal mine escapeways, include specific separate standards for primary and alternate escapeways. *See* 30 C.F.R. §§ 75.380(f), (g) (bituminous and lignite mines), 75.381(e), (f) (anthracite mines). Moreover, MSHA moved its underground coal escapeway standards to within its ventilation regulations, including those that address the periodic submission to and approval by MSHA of ventilation plans and maps. *See* 30 C.F.R. Part 75 Subpart D—Ventilation; §§ 75.370-.372.

In contrast, after recodification of the Part 57 regulations, escapeway standards were separated out from the underground metal and nonmetal mine ventilation regulations. Presently Part 57 Subpart D addresses air quality and contaminant matters, ventilation is regulated under Subpart G, and escapeway standards appear in Subpart J, which does not include separate regulations for primary and secondary escapeways. As for underground metal and nonmetal ventilation plans, they need only be submitted to MSHA upon the District Manager's written request. *See* 30 C.F.R. § 57.8520.

miners' use of a dedicated escapeway—such as ground conditions or obstructions inherent or otherwise present in the escapeway—that negatively impacted its travelability. This is the case not only in metal and nonmetal mines,[16] but coal mines as well.[17] The issue here, of whether the respirable atmosphere of the cited escapeway could render it unsafe or negatively impact its travelability, thus appears to be one of first impression.

As noted, the Secretary relies upon the Part 57 regulation that governs the exposure limits for airborne contaminants, 30 C.F.R. § 57.5001, to argue that the respirable atmosphere of Cargill's secondary escapeway rendered the escapeway unsafe under section 57.11051(a). To do so, she relies upon the source referenced in section 57.5001(a), "TLV's Threshold Limit Values for Chemical Substances in Workroom Air Adopted by ACGIH for 1973, pages 1 through 54" (hereinafter "1973 TLV Booklet"). It defines threshold limit values as the "airborne concentrations of substances . . . under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect." 1973 TLV Booklet at 1. It further states that these values generally "should not be used as fine lines between safe and dangerous conditions." *Id*. For most substances, fluctuations above the TLV are permissible if the time-weighted average over the course of a workday remains at or below the TLV. *Id*.

However, as section 57.5001(c) indicates, contaminants bearing the "C" designation are treated separately, because they are recognized to be "predominantly fast acting" and are "best controlled by a ceiling 'C' limit that should not be exceeded." *Id*. at 4; *see also* Proposed Rules, Air Quality, Chemical Substances, and Respiratory Protection Standards, 54 FR 35,760, 35,761 (Aug. 29, 1989) ("1989 Proposed Rules") ("Other substances are so hazardous that they require a ceiling limit that must not be exceeded at any time, even for an instant."). The 1973 TLV Booklet views the "C" limit as the "maximal allowable concentration" for a designated contaminant and notes that all measurements "should fluctuate below the listed value." 1973 TLV Booklet at 52-53.

As the Secretary points out (S. Br. at 23 & n.33), according to the 1973 TLV Booklet, the TLV for NO_2 is 5 ppm. Moreover, the 1973 ACHIH Booklet gives NO_2 a "C" designation.

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[16] *See, e.g., Original Sixteen to One Mine Inc.*, 40 FMSHRC 843 (June 2018) (ALJ); *Original Sixteen to One Mine Inc.*, 39 FMSHRC 590 (Mar. 2017) (ALJ); *Original Sixteen to One Mine Inc.*, 38 FMSHRC 1472 (June 2016) (ALJ); *Original Sixteen to One Mine Inc.*, 27 FMSHRC 600 (Aug. 2005) (ALJ); *Original Sixteen to One Mine Inc.*, 23 FMSHRC 1158 (Oct. 2001) (ALJ).

[17] The much more developed underground coal mine escapeway standards have resulted in many Commission cases applying those standards, some of which involved standards that have no equivalent in 30 C.F.R. Part 57, Subpart J. *See, e.g., Canyon Fuel Co. v. Sec'y of Labor*, 894 F.3d 1279 (10th Cir. 2018) (requirements of 30 C.F.R. § 75.380(d)(5))*; Consol*, 44 FMSHRC at 695-97 (lifeline requirements of 30 C.F.R. § 75.380(d)(7)(iv)); *see also American Coal Co.*, 29 FMSHRC 941, 946-52 (Dec. 2007) (requirement that escapeways be provided from "each working section").

1973 TLV Booklet at 24.[18] Accordingly, it appears that, absent the application of the section 57.5005 exception to section 57.5001 (to be discussed below), section 57.5001(c) requires that, whenever NO_2 exceeding 5 ppm is discovered in an area of a mine, miners are to be immediately withdrawn.

I stress again that, in this instance, no violation of section 57.5001 was alleged, because there were no miners working or otherwise present in or even near the area in which the cited level of NO_2 was discovered. Rather, the Secretary looks to section 57.5001 to give meaning to the section 57.11051(a) requirement that an escapeway be "maintained in safe, travelable condition" with respect to its respirable atmosphere.

A regulation's structure is one of the "traditional tools" of construction employed to determine its clear meaning. Yet here, the Secretary has passed on taking the position that section 57.5001's incorporation by reference of the 1973 ACGIH TLV for NO_2 provides a clear, unambiguous meaning regarding the level of NO_2 that would violate the requirement of section 57.11051(a) that an escapeway be in a "safe, travelable condition."

That is likely because, by its express terms, section 57.5001 only addresses contaminants in areas in which miners "work." ("'TLV's Threshold Limit Values for Chemical Substances *in Workroom Air* . . . .'" (emphasis added). The equivalent provision in MSHA's underground coal mine regulations likewise refers to a year-earlier version of the 1973 TLV Booklet. *See* 30 C.F.R. § 75.322 ("Concentrations of noxious or poisonous gases, other than carbon dioxide, shall not exceed the [TLV] as specified and applied by the [ACGIH] in 'Threshold Limit Values for Substance in Workroom Air' (1972).").

The focus on "work" can be seen to an even greater extent throughout the exception to section 57.5001, section 57.5005. It states in pertinent part that, "[h]owever, . . . when necessary *by the nature of work involved* (for example, *while establishing controls* or occasional entry into hazardous atmospheres *to perform maintenance or investigation*), employees may *work* for reasonable periods of time in concentrations of airborne contaminants exceeding permissible levels if they are protected by appropriate respiratory protective equipment." 30 C.F.R. § 57.5005 (emphases added).

Moreover, the "hierarchy of control" measures that section 57.5005 anticipates will be taken before even "necessary . . . work" is permissible — "by prevention of contamination, removal by exhaust ventilation, or by dilution with uncontaminated air" — all seem to contemplate a gradualness of planning in the work process that is simply not present in any emergency mine evacuation. *Id.* Indeed, when viewed in the overall context of MSHA's

[18] The "C" designation for NO_2 predates 1973. An earlier version of section 57.5001(a) expressly used NO_2 as the example for the "C" designation exception, stating that "[t]his paragraph (a) does not apply to airborne contaminants given a "C" designation by the [ACGIH]—for example, nitrogen dioxide." *See* 35 Fed. Reg. 18,590, 18,591 (Dec. 8, 1970) (promulgating section 57.5001's precursor, 30 C.F.R. § 57.5-1, and using the TLV's "adopted by the [ACGIH] as set forth and explained in the *most recent edition* of [its] publication entitled 'Threshold Limit Values of Airborne Contaminants.'") (emphasis added).

regulations, miners, when using an area of a mine as an escapeway, are not generally considered to be at "work" in the escapeway. Inspector Morris recognized as much. Tr. 231.

Rather, when using an escape route governed by the terms of section 57.11051(a), miners have ceased working in the mine and are out of necessity "traveling," and for a very specific purpose: to escape the underground mine environment entirely. *See* MSHA IV Program Policy Manual 40 (Release IV-22 Apr. 2003) (in metal and nonmetal underground mines, "[a] 'properly maintained' escapeway is an escapeway that is functional, providing the miners with a safe means of egress to the surface during a mine evacuation."). As the inspector explained, a mine evacuation constitutes a withdrawal from the entire mine. Tr. 224.

The lack of a plain fit of the terms of section 57.5001 to escapeways can be further seen in the different contexts that sections 57.5001 and 57.11051(a) anticipate. As the inspector explained, the terms of section 57.5001(c) require that miners be "withdrawn from areas where" the applicable exposure limit for a contaminant with a "C" designation has been exceeded, and that is what Cargill ordered the morning of July 28. Tr. 30, 54, 224. From such terms, it can be reasonably inferred that it is expected that there will be an area of the mine in which the airborne contaminant is not present at an excessive level, to which miners can safely move. *Cf.* 30 U.S.C. § 817(a) (authorizing MSHA to order miners to withdraw from *an area of a mine* in which an imminent danger exists for as long as such danger persists in that area) (emphasis added). And that had been the experience at the Cleveland Mine prior to the citation. Tr. 332-33.

In contrast, an escapeway is only being used because the entire mine has already been deemed too hazardous for miners to remain anywhere underground. And use of a secondary escapeway means that the primary escapeway has also been deemed too dangerous to use.

In these circumstances, it is understandable that the Secretary is not taking the position that section 57.11051(a) is unambiguous with respect to the levels of NO_2 present in an escapeway that would render it unsafe or untravellable. Considering the foregoing application of the traditional tools of regulatory construction, as well as others,[19] I conclude that the requirement that an escapeway be "maintained in safe, travelable condition" is "genuinely

[19] The regulatory history of section 57.5001, from the standard's earliest incarnation to its present one, is entirely silent on the scope of its coverage, or any other relevant subject. *See Inland Steel Mining Co.*, 20 FMSHRC 445, 447-48 (Apr. 1998) (ALJ) (concluding that no discussion accompanied the promulgation of any of the iterations of the regulation).

The 1989 Proposed Rules, while setting forth proposed updated contaminant exposure standards for both coal and metal-nonmetal underground mines, cited concern with conditions that posed a risk of "acute eye exposure that would prevent an escape from a hazardous atmosphere." Specifically, under proposed 30 C.F.R. § 58.300, entitled "Dangerous atmospheres" it would be required that:

> (a) The atmosphere shall be tested for suspected hazardous gases and vapors and oxygen deficiency prior to entrance into any of the following areas:
>
> . . . .

ambiguous" with respect to the specific levels of airborne contaminants that may be present in the escapeway, at least with respect to NO_2.

4. Whether the Secretary's Interpretation Falls Within the "Zone of Ambiguity"

Turning to *Kisor*'s second step, the application of the same tools of construction set forth above establish that the Secretary can at least look to section 57.5001 to attempt to give meaning to the section 57.11051(a) requirement that an escapeway be "maintained in safe, travelable condition." Thus, her interpretation here falls "'within the bounds of reasonable interpretation.'" Even though the text of section 57.11051(a) addresses the content of an escapeway's respirable atmosphere only in the most general of terms, at one point during the later development of the Subpart J standards, it was recognized that the respirable atmosphere of an escapeway can be hazardous to miners, both prior to and after an emergency arises. *See* 44 Fed. Reg. 31,908, 31,914 (June 1, 1979).[20] Consequently, it almost goes without saying that, at some point, one or

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> (2) Areas where there has been a liberation of contaminants in sufficient quantities that could result in acute respiratory exposure that poses an immediate threat of loss of life, immediate or delayed irreversible adverse health effects, or acute eye exposure that would prevent escape from a hazardous atmosphere (IDLH atmosphere).

54 Fed. Reg. at 35,817. However, many of the proposed rules, including updated contaminant exposure standards and proposed section 58.300, were not adopted and were eventually withdrawn by MSHA. *See* 69 Fed. Reg. 67,681, 67,691 (Nov. 19, 2004) ("Given the current circumstances, MSHA believes that a non-regulatory approach is the most appropriate manner to address the hazards addressed in the Air Quality proposed rule. MSHA will continue to assess the risks posed by the contaminants included in the Air Quality proposed rule, and will ascertain whether rulemaking for any individual contaminant is appropriate.").

[20] The subject of a mine's respirable atmosphere during conditions necessitating escape arose in a rulemaking initiated by the Department of the Interior's Mining Enforcement and Safety Administration and concluded by MSHA in 1979, soon after assuming authority over all federal mine safety regulation and enforcement. Among the additional standards to govern escapeways in underground metal and nonmetal mines, was one entitled "Respirable atmosphere for hoist operators underground." *See* 30 C.F.R. § 57.11059 (originally promulgated as section 57.11-59 prior to recodification); 44 Fed. Reg. at 31,919.

The new regulation was based on the recognition that, during an emergency mine evacuation, a hoist operator deployed underground would likely need to remain there longer than most other miners, to facilitate their exit from the mine. The standard thus required that specific individual respirable protection measures be taken to "permit the operator to complete [his] essential task." *Id*. at 31,914. In singling out the hoist operator for special respirable protection, the regulation's preamble discusses the potential respirable environment through which

more contaminants in the respirable atmosphere of a mine's escapeway can rise to a level that would prevent use of the escapeway for what Congress, MSHA, and the Commission has recognized is an escapeway's intended purpose: to enable miners to expeditiously withdraw from hazardous conditions that have suddenly arisen underground.

In addition, the regulations governing underground metal and nonmetal mines have been designed to ameliorate concerns that conditions preventing use of one of a mine's escapeways may also impact any of its other escapeways. Section 57.11051's companion regulation states that "[e]very mine shall have two or more separate, properly maintained escapeways to the surface from the lowest levels which are so positioned that damage to one shall not lessen the effectiveness of the others." 30 C.F.R. § 57.11050(a). This concern about "damage" can of course be read to include concern for damage to a mine's ventilation system that permits harmful airborne contaminants to move through the escapeway. With escapeway standards having been drafted to "lessen" the likelihood that dangerous airborne contaminants impact more than one escapeway, it is reasonable to interpret section 57.11051(a)'s requirement that escapeways be "maintained in safe, travelable condition" to include protection from airborne contaminants, such as NO_2 at excessive levels.

Moreover, given the structure of Part 57, extending section 57.5001's requirement that miners be withdrawn from areas with NO_2 concentrations exceeding 5 ppm to prohibit use of such areas as escapeways also falls within "the 'outer bounds' of what is [a] reasonable" interpretation of section 57.11051(a). *See GMS*, 74 F.4th at 1420 (quoting *Kisor*, 588 U.S at 575-76). Section 57.5001 and its concern for miner "exposure" is part of Subpart D, which governs "[a]ir [q]uality, [r]adiation, [p]hysical [a]gents, and [d]iesel [p]articulate [m]atter" in underground metal and nonmetal mines. If a regulation requires that miners be withdrawn from an area under certain conditions, it is reasonable *to at least consider* that regulation in deciding whether an area should be considered safe for a miner to pass through when those same or similar conditions are present, regardless that such entry may be necessary for escape as opposed to work or travel to and from work. It is particularly appropriate in the case of sections 57.5001(a) and (c), which include no language addressing the scope of the standard.

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evacuating miners may have to travel, and which the hoist operator could be exposed for an even longer.

> This standard is promulgated to [e]nsure that mine escape and evacuation can be accomplished quickly and efficiently without exposing those participating in escape and evacuation operations to unnecessary hazards. The ventilation system in such mines is crucial to the survival of the miners, including the underground hoist operator. However, due to the nature of the mining environment, the respirable atmosphere is capable of harmful fluctuations, particularly in emergency situations.

Id. Thus, MSHA has plainly recognized that the respirable atmosphere of an underground mine during its evacuation is a factor in how expeditiously miners can exit it.

5. Whether Deference to the Secretary's Interpretation is Appropriate Here

Having found the Secretary's interpretation to fall within the outer bounds of reasonableness in this instance, the *Kisor's* third step requires an inquiry into whether there are present "important markers for . . . [when] deference is . . . appropriate." *GMS*, 74 F.4th at 1420 (quoting *Kisor*, 139 S. Ct. at 2416). Determining whether the "character and context" of the Secretary's interpretation merits deference requires an examination of "the authoritativeness of the position asserted, implication of the agency's substantive expertise, and whether the interpretation reflects the agency's 'fair and considered judgment.'" *GMS*, 74 F.4th at 1420 (quoting *Kisor*, 139 S. Ct. at 2416-17). Here, I find that, while the record reflects that the first two markers have been established, with respect to the third it does not.

The first two of these markers are easily identifiable in this instance. The citations MSHA issues, and the regulatory interpretations the Secretary advances in support of those citations before the Commission and reviewing courts, are recognized as the Secretary's authoritative position on the matter at hand. *See Martin*, 499 U.S. at 152–53; *RAG Cumberland Res. LP v. FMSHRC,* 272 F.3d 590, 596 n.9 (D.C. Cir. 2001) (quoting *Martin* and extending its rationale to Commission proceedings); *Sec'y of Labor v. Excel Mining, LLC*, 334 F.3d 1, 6 (D.C. Cir. 2003).

Similarly, there is no question that interpreting MSHA standards, such as section 57.11051(a), and particularly ones as complex as sections 57.5001 and 57.5005, implicates the Secretary's expertise. "[R]esolving genuine regulatory ambiguities often 'entail[s] the exercise of judgment grounded in policy concerns.'" *Kisor*, 139 S. Ct. at 2413 (quoting *Thomas Jefferson Univ. v. Shalala*, 512 U.S. 504 (1994)); *see also id*. at 2448, 2449 (Kavanaugh, J., concurring) ("some cases involve regulations that employ broad and open-ended terms like 'reasonable,' 'appropriate,' 'feasible,' or 'practicable.' Those kinds of terms afford agencies broad policy discretion, and courts allow an agency to reasonably exercise its discretion to choose among the options allowed by the text of the rule.").

Courts and the Commission have held similarly with respect to the Secretary's interpretation of Mine Act standards. "[D]eveloping rules and enforcing them endows the Secretary [of Labor] with the 'historical familiarity and policymaking expertise . . . .'" *Sec'y of Labor on behalf of Wamsley v. Mutual Mining, Inc.*, 80 F.3d 110, 114 (4th Cir. 1996) (quoting *Martin*, 499 U.S. at 152); *see, e.g., Asarco, Inc.*, 19 FMSHRC 1097, 1031-36 (June 1997) (ALJ) (concluding "that MSHA's single-shift sampling enforcement strategy is consistent with the language in [30 C.F.R. § 57.5001(a)] and is a reasonable means for determining and preventing excessive exposure to airborne contaminants in underground metal and nonmetal mines consistent with the intent of the regulation."), *rev. vacated*, 20 FMSHRC 1001 (Sept. 1998).

The third of the "markers" enumerated by *Kisor* is whether the Secretary's interpretation reflects her "fair and considered judgment." When there is reason to suspect the Secretary's interpretation does not reflect her fair and considered judgment, deference is inappropriate. *Drilling & Blasting Sys., Inc.*, 36 FMSHRC 190, 194 (Feb. 2016) (citing *Christopher v. SmithKline Beechum Corp.*, 567 U.S. 142, 155 (2012)).

Here, the Secretary is interpreting the phrase "maintained in safe, travelable condition" found in section 57.11051(a) in large part by advancing interpretations of the other two standards she relies upon, sections 57.5001 and 57.5005. S. Br. at 2-3, 21-29. In connection with those interpretations, the Secretary points to record evidence she believes supports those interpretations.

The first of her interpretations is that the terms of section 57.5001 establishing the maximum level for each recognized contaminant in an underground metal-nonmetal mine apply to escapeways. Her position is that when a contaminant exceeds that level in an escapeway, as occurred in this case with NO_2, it follows that the escapeway was *not* in safe, travelable condition. S. Br. 2, 21-24.

The second Secretarial interpretation is that if a mine operator, in anticipation of the possibility of one or more airborne contaminants in an escapeway in excess of the level permitted by section 57.5001, provides miners with personal protective equipment, such as the Ocencos, the operator must demonstrate that *all* of the terms of the section 57.5005 exception to section 57.5001, including its prerequisites, are met before the Secretary will consider the escapeway safe for miners wearing such equipment. The Secretary argues that Cargill was unable to do so here with respect to its secondary escapeway when it contained levels of NO_2 exceeding 5 ppm. S. Br. at 3, 24-29.

I will address the two interpretations and supporting evidence in order.

a. Applying Section 57.5001 to Escapeways

As outlined earlier, the Secretary arrived at an exposure limit for NO_2 of 5 ppm by looking to section 57.5001's incorporation by reference of the 1973 ACGIH and its designation of NO_2 as a "C" contaminant. The Secretary also relies heavily upon the report of her expert witness, MSHA toxicologist Dr. Michelle Schaper.

As I previously concluded, taking the workplace exposure limits of section 57.5001 into account in determining whether an area of the mine is in safe condition for use as a designated escape route falls within the outer boundaries of a reasonable interpretation of section 57.11051(a). At the same time, however, there are ample indications that the regulatory interpretations the Secretary relies upon in citing Cargill in this case do *not* reflect her "fair and considered judgment."

For instance, the Secretary makes little effort to reconcile the language in sections 57.5001 and 57.5005, suggesting that the regulations were designed to apply only during such times miners are engaged in work-related activities, as opposed to when they are engaged in the very different activity of attempting to evacuate a mine due to what may be extremely hazardous conditions. The Secretary argues that, under Cargill's emergency escape protocols, miners should be viewed as engaged in "work," because, in the worst case, there can be up to an hour's worth of activities involved in their exit from the mine, including miner vehicular travel away from the safety of the shaft to pick up miners working in areas of the mine where there is not easy access to a vehicle. S. Br. at 26.

At hearing, it was established by witnesses from both parties that miners driving out the secondary escapeway would generally exit the mine in such circumstances in 15 to 30 minutes, depending on how far north or inby they were working when an evacuation order was issued. Tr. 60. The Secretary expended a great deal of time eliciting testimony regarding emergency circumstances in which some miners could take longer to exit the mine.

Most of the record evidence, however, supports the notion that the duration of miner exposure to NO_2 in the secondary would be limited. First, miners are trained to utilize the primary escapeway, with its fresh, intake air, whenever possible. Tr. 716. When access to the primary is limited by fire or other emergency, miners are trained to use the secondary only as necessary, and to cross over to the primary once the miner clears the hazard. Tr. 246-47, 347-48, 738. Via the mine's Femco intercom system, management notifies miners of the location of the fire, and the miners then know that they can reenter the fresh air of the primary once they are outby the fire. Tr. 738, 761. Miners also have ready access to radio communications to contact supervisors. Tr. 75. Accordingly, the time spent in the secondary escapeway is generally minimized.

Second, a miner's exposure to the NO_2 front would be brief because miners travel by vehicle underground. Trucks and UTVs are the primary modes of transportation in the Cleveland Mine. Tr. 703. Cargill has established a speed limit of 15 mph on mine roadways, but Inspector Morris admitted that miners are "going to fly" (i.e. exceed the posted speed limit) out of the mine in the case of an emergency. Tr. 204. Thus, it would take just 24 minutes to drive the full six miles of the mine traveling at the posted speed limit, and if the front of excessive NO_2 was only one and one-half miles in length that the inspector estimated that it was the morning of July 28, would miners have been exposed to it for no more than six minutes. Tr. 205, 745.

Third, even if events forced miners to exit the mine by foot, the duration of the exposure would still be limited. The NO_2 generated from blasting generally travels as a front of gas that slowly moves its way through the return airway. MSHA's ventilation study indicates that the NO_2 front moves at approximately 1 to 1.5 miles per hour. A person walking at a normal pace—much less the brisk pace one would take amid an emergency—would move 2 to 3 times as quickly as the NO_2 front and would eventually pass through the front to lower NO_2 concentrations.

Accordingly, I am not persuaded by the Secretary's argument for giving weight to the longer time frame for exit from the mine, as it largely relies upon a worst-case scenario chain of circumstances. I am not at all certain that is an appropriate consideration with respect to the Cleveland Mine, given the record evidence that the secondary escapeway has only been used once in the mine's history. Tr. 716.

In any event, Subpart J of Part 57 includes an extensive standard governing underground metal-nonmetal mine "[e]scape and evacuation plans." *See* 30 C.F.R. § 57.11053 ("A specific escape and evacuation plan and revisions thereof suitable to the conditions and mining system of the mine and showing assigned responsibilities of all key personnel in the event of an emergency shall be developed by the operator and set out in written form.").

Significantly, section 57.11053 mandates that the plan "be reviewed jointly by the operator and the Secretary or his authorized representative at least once every six months from the date of the last review." *Id*. No evidence was submitted that Cargill failed to comply with any part of this standard, or that its escape plan or any revision thereof had ever been rejected for any reason, including that it could require too much on the part of miners in emergency evacuation circumstances. In fact, the inspector testified that he had reviewed Cargill's mine evacuation and emergency response plan each of the twenty times he had inspected the mine, including as part of the inspection during which the instant citation was issued. Tr. 94, 98-100, 102-03.

Moreover, after I made a pre-hearing request for specific information, Cargill's response included a copy of a portion of the "Regular Inspection Information" form the inspector had completed in connection with his inspection. It showed he had reviewed, among other things, the mine's "Escape and evacuation plan" pursuant to section 57.11053, as well as "Self-rescuer maintenance" pursuant to 30 C.F.R. § 57.15030. Cargill's counsel letter dated Dec. 2, 2022, Ex. A (Underground Emergency Action Plan) & Ex. C (MSHA "Regular Inspection Form" from "Event No. 6897526").[21]

Then, at hearing it was confirmed that Inspector Morris inspected both the W65 and Ocenco self-rescue devices at the Cleveland Mine, as well as the mine's evacuation maps, which indicate, among other things, where the caches of the latter were stored throughout the mine. Tr. 68, 95-96, 98-99. His inspection also included a review of the mine's emergency response plan. Tr. 99-100.[22]

In addition, the Secretary makes no serious attempt to reconcile the textual scope of sections 57.5001 and 57.5005 with the circumstances in which miners would be exiting the mine in an emergency. The Secretary does little more than point to Cargill's largely undisputed policy of enforcing miner compliance with section 57.5001, which is to withdraw them from areas with

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[21] MSHA requires that an inspector "review the parts of the [Electronic Mine File ("]EMF[")] pertinent to the type of inspection." In this instance, that includes the "Ventilation Plan[,] . . . Emergency Response Plans[,] and Evacuation Plans[.]" MSHA Handbook No. PH19-IV/V-1, Mine Safety and Health Enforcement General Inspection Procedures Handbook (Dec. 2019), at 2-2. In addition, MSHA imposes upon inspectors visual examination requirements for self-rescue devices such as the W65's, as well a requirement that "approximately 25 percent of []SCSRs[] worn or carried by miners, stored on the section, or stored on section transportation" be inspected, as well as "a representative number, but not less than 10 percent, of SCSCRs stored in outby areas . . . ." *Id*. at 3-6.

[22] In a similar vein, the Secretary suggests that Cargill miners, during a hypothetical escape, may fail to follow their training in exiting the mine during an emergency. *See* S. Br. at 27. But, at other times during the hearing, the Secretary states that miners will follow their training in exiting the mine. *Id*. at 19, 23 & n.34, 28. Again, the underground metal-nonmetal standards include a regulation that addresses "[m]ine emergency and self-rescuer training" (30 C.F.R. § 57.18028), Cargill was not cited for violating any training standard, and the inspector confirmed that, at the time of his inspection, Cargill had complied with the training standards, including with respect to evacuation procedures. Tr. 105-07, 164, 182, 209.

NO_2 levels above 5 ppm. Tr. 75, 140, 148-49, 321-22, 892. In the case of the return airway, miners do so by exiting through the closest of the doors that are spaced 1000 feet apart. Tr. 801-03. From this, the Secretary argues that "[c]ommon sense dictates that if miners must withdraw for their safety from 5+ppm [of NO_2] under normal working cond[i]tions within approximately 1,000 feet, then it is not safe to travel through 5+ppm NO_2 for miles in an evacuation." S. Br. at 22-23.

In doing so, the Secretary fails to consider that the mine conditions prompting miners to evacuate a mine may constitute hazards, both respirable and otherwise, that are *qualitatively worse* than NO_2 above the 5-ppm threshold. For instance, Gary Hartsog described a mine fire as akin to "a dumpster fire. You don't know what's in that smoke. It can be any of a number of very nasty things besides CO." Tr. 1110-11. Jason Wood explained that mine fires can release other chemicals, depending on whether an equipment or belt fire is involved. Tr. 788.

This failure on the part of the Secretary runs counter to the 1979 preamble, in which MSHA acknowledged that "due to the nature of the mining environment, the respirable atmosphere is capable of harmful fluctuations, particularly in emergency situations." Moreover, in this case, because it concerns the prospective use of a secondary escapeway, it would involve an escape route of last resort.

As for the evidence provided by the Secretary's expert Dr. Schaper, she also in large part relies on the 5-ppm "ceiling limit" derived from section 57.5001. Her report reached three conclusions. Ex. S-8, at 7.

First, she states that "the MSHA PEL of 5 ppm . . . is a 'Ceiling Limit' which signifies that it should never have been exceeded, particularly when there was a potential for miner exposure." *Id*. (Conclusion A); Tr. 534 ("That's the law . . . . Don't go above five."), 561. I give little weight to this conclusion, because, like the Secretary's theory of violation, it wholly relies upon section 57.5001, the terms of which have not been established to be susceptible to a construction that apply them to not just actual exposure, but to also reach "potential . . . exposure" in an emergency evacuation.

Moreover, her conclusion reads as a legal conclusion. Legal conclusions are not within the province of an expert witness in a Commission proceeding. *See, e.g., Jones Brothers, Inc.*, 43 FMSHRC 98, 99 (Jan. 2021) (ALJ) (granting Secretary's motion to exclude expert witness testimony on the ground that "[e]xpert testimony that consists of legal conclusions" is not admissible under Rule 702 [of the Federal Rules of Evidence] because it "cannot properly assist the trier of fact" in "understand[ing] the evidence" or "determin[ing] a fact in issue." (quoting *Burkhart v. WMATA*, 112 F.3d 1207, 1212 (D.C. Cir. 1997), *aff'd on other grounds*, 64 F.4th 289 (6th Cir. 2023)).[23]

[23] The Commission has recognized that the Federal Rules of Evidence may serve as guidance in Commission proceedings. *See Pero v. Cyprus Plateau Mining Corp.*, 22 FMSHRC 1361, 1366 n.8 (Dec. 2000); *In re: Contests of Respirable Dust Sample Alteration Citations*, 17 FMSHRC 1819, 1843 (Nov. 1995), *aff'd sub nom. Sec'y of Labor v. Keystone Coal Mining*

The expert's report also relies upon information that MSHA had obtained of instances in which NO_2 in the secondary escapeway had exceeded 13 ppm. Ex. S-8, at 7 (Conclusion B); Tr. 505-08. None of those higher levels of NO_2, however, were included in the citation MSHA issued, because, according to the inspector, the agency requires actual observation of the violative condition being cited. Tr. 385.[24] In any event, the presence of such levels of NO_2 does not establish whether an area of a mine is rendered unsafe or untravellable for use as an escapeway at the much lower level of 5 ppm.

The expert's third conclusion is more significant. Specifically, she concluded that:

> There are serious health-related effects of inhalation exposure to NO_2, at and above its Ceiling Limit of 5 ppm. These effects involve the respiratory tract and include irritation at one or more levels of the respiratory tract. With such irritation, the escape efforts of miners could be delayed or hindered. In addition, significant exposure to NO_2 in the presence of other predisposing or aggravating factors may result in serious adverse health effects, even if a miner escapes.

Ex. S-8, at 7 (Conclusion C). Again, the conclusion, by referring to the "Ceiling Limit of 5 ppm" is derived from section 57.5001. But in this instance, it is referenced in the context of the expert providing her opinion on the impact that exposure to NO_2 measured above 5 ppm may have upon a miner seeking to escape the mine environment. Tr. 498-505. The Secretary is certainly free to, independent of the terms of section 57.5001, use relevant evidence to establish that NO_2 above 5 ppm renders an escapeway unsafe for miners to travel through.

At this point, I think it is worth addressing that MSHA has recognized in the past that it needs to update its contaminant exposure limits. In the 1989 Proposed Rules, MSHA characterized materials such as the 1973 TLV Booklet as outdated and stated that the requirements of section 101(a)(6)(A) of the Mine Act, 30 U.SC. § 811(a)(6)(A), and the Mine Act's legislative history obligates the agency to develop and adopt updated standards. 54 Fed. Reg. at 35,762 (quoting S. Rep. No. 95-181, at 21, *Legis. Hist.* at 609).

Consequently, MSHA proposed updated contaminant exposure standards for both coal and metal-nonmetal underground mines, stating:

> OSHA's recent rulemaking established a nitrogen dioxide (NO_2) [permissible exposure limit (']PEL[')] for general industry of 1 ppm as a 15-minute STEL based upon studies indicating an increased airway resistance cause by exposure to NO_2 . NIOSH also has a [Recommended Exposure Limit] of 1 ppm as a 15-minute STEL. ACGIH recommends a 3-ppm TWA and a 5-ppm STEL for NO_2. . . . . [MSHA] is continuing to review medical studies and other

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Corp., 151 F.3d 1096 (D.C. Cir. 1998); *see e.g., Jim Walter Res. Inc.*, 37 FMSHRC 1958, 1965-66 (Sept. 2015).

[24] At hearing, Cargill's Jason Wood conceded that it was likely that there were miners inby one or more times those higher readings were recorded. Tr. 780-81.

> documentation to determine whether a PEL of 1 ppm as a 15-minute STEL or a 3-ppm TWA with a 5-ppm STEL would be appropriate for mining. MSHA has included both exposure limits for comment in this rulemaking. Comments should address the health basis for either limit and the feasibility and cost of meeting the limit in mining.

Id. at 35,769.[25] For metal-nonmetal mines, new contaminant exposure limits were to be part of a proposed new 30 C.F.R. § 58.100. *Id*. at 35,807-16. As with proposed section 58.300 and many other contaminant exposure limits dating from ACGIH TLV's established in the early 1970's, an updated exposure limit for NO_2 was never adopted, not only for metal-nonmetal mines, but also for coal mines as well.

Along those same lines, in the report supporting her conclusions, Ms. Schaper details what has transpired since 1973 regarding NO_2 exposure limits. Significantly, the ACGIH long ago removed the "C" or "ceiling" designation of 5 ppm for NO_2. In its place, between 1981 and 2011 ACGIH substituted a "TLV-TWA" for NO_2 of 3 ppm. "TWA" stands for "Time Weighted Average," and is based on measuring exposure "over a conventional 8-hour workday, 40-hour workweek." Then, in 2012 the ACGIH adopted a TLV-TWA of 0.2 ppm for NO_2. Ex. S-8, at 5-6; Tr. 510-11, 513.[26]

Thus, there have been numerous changes with respect to the workplace exposure limits for NO_2 since 1973, while section 57.5001 has remained unchanged in referring to the 1973 ACGIH. This includes the organization no longer recognizing the ceiling limit with respect to NO_2 exposure, though apart from that, the changes reflect a general lowering of the workplace exposure limits for NO_2 over the past 50 years. *See* S. Br. at 15; Tr. 510.

At hearing, Ms. Schaper stressed that, with respect to adverse effects from NO_2 exposure, the level of NO_2 is a much more important consideration than the duration of the exposure. Tr. 534. In fact, she testified that it made little difference whether the miners were walking out of the mine or exiting via vehicles traveling 15 mph. Tr. 562.

Nevertheless, in her report and at hearing, Ms. Schaper applied the most recent ACGIH exposure recommendations to the circumstances presented by Cargill's secondary escapeway when it was cited by the inspector. Specifically, she applied those recommendations to a scenario in which miners had to escape by going through NO_2 at levels above 5 ppm that extended through 2/3rds of a mile in the escapeway. She concluded that "[u]nder these circumstances, it is

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[25] The reference to the ACGIH was to its 1989-90 TLV's. 54 Fed. Reg. at 35,762. According to the expert's report, the ACGIH has since lowered the TLV figure for NO_2 further. Ex. S-8, at 5-6.

[26] Between 1981and 2011, the ACGIH also recognized a "TLV-STEL" of 5 ppm for NO_2. "STEL" stands for "Short-Term Exposure Limit" and refers to a "15-minute TWA, not to be exceeded at any time during workday." Starting in 2012, ACGIH ceased publishing a STEL for NO_2. Ex. S-8, at 6.

probable that an escaping miner would exceed a 15-minute TWA or 1 ppm, let alone 0.6 ppm." Ex. S-8, at 6-7; Tr. 513-15.

I find that the weight to be accorded Dr. Schaper's conclusions should be discounted, for several reasons. First, if this latest ACGIH guidance was adopted and enforced by MSHA as the exposure limit for NO_2, instead of the presently applicable 5-ppm ceiling limit derived from section 57.5001, it is doubtful that *any* part of the Cargill mine would comply with the standard at any time while the mine was operating. MSHA's own witnesses admitted that NO_2 would be almost always present in a mine, such as the Cleveland Mine, at 1 or 2 ppm, if not more, particularly in a return airway. Tr. 134 (inspector noting that it would not be hard to get close to 5 ppm with mobile equipment operating near the returns), 264-65, 326, 353, 443 (MSHA ventilation specialist Wurl), 516, 532, 1047. In fact, the inspector had been measuring NO_2 between 2 and 4 ppm earlier throughout his inspection. Tr. 158-59.[27]

As for the 5-ppm limit on potential NO_2 exposure that MSHA seeks to enforce as the standard to be applied with respect to escapeways, during her testimony, Ms. Schaper justified it on the basis that that is the point at which adverse effects from actual NO_2 exposure may "start" to be seen, with "the first thing that will happen is[] that the gas may affect your eyes, nose and throat." Tr. 498-99. She described these as "sensory-type irritation[s]" which include tearing of the eyes. Tr. 498.

On cross-examination, however, Dr. Schaper conceded that NIOSH, in determining the IDLH value for NO_2, cited 30 ppm as the lowest concentration of NO_2 at which adverse health effects have been observed. Tr. 545. That observation was made after people were exposed to 30 ppm of NO_2 for 70 minutes. Ex. R-2, at 19. The same study reported no adverse effects when the subjects were exposed to 20 ppm NO_2 for two hours. *Id*. There is no evidence in the record beyond Dr. Schaper's testimony that exposure to 5 ppm NO_2, over the comparatively shorter period of a mine evacuation would impair a miner's escape or cause a miner serious health.

Moreover, Schaper made clear that the effects she described would only result with miners who were *not* wearing respiratory protective equipment. Tr. 563. The inspector as well testified that his concern with the NO_2 levels he cited was with respect to the potential exposure to miners *not* wearing appropriate respiratory protective equipment. Tr. 181-82, 209-10, 362.

This raises the second interpretation the Secretary relies upon here, of the section 57.5005 exception to section 57.5001, and whether it reflects fair and considered judgment on her part.

b. The Treatment of OCENCO's Under Section 57.5005

Having argued that section 57.5001 should be considered in determining whether the level of an individual contaminant, such as NO_2, present in an escapeway renders that escapeway potentially unsafe for use under section 57.11051(a), the Secretary had no choice but to take the

[27] It also would be nonsensical to look to the newer, lower recommendations to establish the safety of an area of a mine for its use as an escapeway, while the higher 5 ppm-ceiling limit would remain the standard for other uses of it.

further step of addressing the terms of the section 57.5005 exception to section 57.5001. Of course, if section 57.5001 is not a persuasive interpretive source for section 57.11051(a), section 57.5005 is immaterial. Nevertheless, I will address the Secretary's arguments on section 57.5005, as they shed more light on whether her interpretations of the regulations at issue reflect her "fair and considered judgment."

The Secretary maintains that the record evidence establishes that any hypothetical use by Cargill miners of the secondary escapeway in an emergency evacuation does not fall under the terms of the section 57.5005 exception. At the time the citation was issued, section 57.5005 provided in pertinent part:

> Control of employee exposure to harmful airborne contaminants shall be, insofar as feasible, by prevention of contamination, removal by exhaust ventilation, or by dilution with uncontaminated air. However, where accepted engineering control measures have not been developed or when necessary by the nature of work involved (for example, while establishing controls or occasional entry into hazardous atmospheres to perform maintenance or investigation), employees may work for reasonable periods of time in concentrations of airborne contaminants exceeding permissible levels if they are protected by appropriate respiratory protective equipment. Whenever respiratory protective equipment is used, its selection, fitting, maintenance, cleaning, training, supervision, and use shall meet the following minimum requirements:
>
> (a) Respirators approved by NIOSH under 42 CFR part 84 which are applicable and suitable for the purpose intended shall be furnished and miners shall use the protective equipment in accordance with training and instruction.

30 C.F.R. § 57.5005 (2022).

The Secretary, correctly, views the prefatory sentences of section 57.5005 as setting forth a "hierarchy of control" measures that a mine operator must take before it can legitimately claim that a section 57.5001 airborne contaminant exposure limit should not be enforced against it. First, the operator must try to prevent the contamination. If that is not possible, the operator must attempt to remove contaminated air by exhaust ventilation, or instead dilute the contaminant such that it no longer exceeds the exposure limit. Only if none of the foregoing measures are sufficient, may a miner don appropriate respiratory protective equipment, for a reasonable amount of time, to protect against concentrations of airborne contaminants exceeding permissible limits. S. Br. at 25; Tr. 609-10; Ex. S-9, at 4 (expert's report).

However, as discussed earlier and as can be seen, section 57.5005, even more so than section 57.5001, is couched throughout in terms of a miner's "work" in a respiratory environment recognized to be potentially harmful. The inspector agreed with the importance of the standard's emphasis on miner "work." Tr. 231.

Under the standard, each graduated step in the "hierarchy of control" measures appears to be a reasonable requirement for an operator to satisfy before permitting an *individual* miner to

perform a specific task within an area where it is expected that the miner will be exposed to one or more airborne contaminants covered by section exposure limits derived from section 57.5001. In contrast, section 57.11051(a) is concerned with *all* miners underground immediately ceasing their respective work assignments and expeditiously exiting the mine.

As with section 57.5001, the Secretary attempts to elide the import of the presence of the term "work" throughout section 57.5005 by arguing that, because there may be circumstances in which some miners may take up to an hour to exit the Cleveland Mine in an emergency, miners' exit from the mine should be viewed as the equivalent of "work." S. Br. at 26. Again, however, the bulk of the record evidence is that most if not all miners would not take nearly that long to exit the mine. The Secretary is relying on a hypothetical worst-case scenario use of a secondary escapeway that has only been used once before.

Moreover, MSHA's Part 57 underground metal and nonmetal regulations, like the corresponding parts of MSHA's regulations that address other types of mines, in large part can be read as differentiating miner "work" from their "travel." Part 57 contains multiple standards expressly applicable to areas where miners "work *or* travel" (emphasis added). *See, e.g.,* 30 C.F.R. §§ 57.2, .3200, .3360, .3430, .4363, .16015; *see also* 30 C.F.R. §§ 57.5037(a)(1), .5040 ("work, travel, or congregate"). If all "travel" by miners was necessarily considered to fall within their "work," there would be no need for so many of MSHA's health and safety standards to state its respective scope in the adjunctive form.

In addition, MSHA has continually approved the Cargill mine evacuation plan pursuant to a process designed to provide a continuous means to address any particular concern the agency may have with how escape and evacuation is effectuated at the Cleveland Mine. With respect to self-rescuer devices to be used at a mine in the event of an emergency, MSHA requires that, in each underground metal-nonmetal underground mine, "[a] 1-hour self-rescue device approved by MSHA and NIOSH under 42 CFR Part 84 shall be made available by the operator to all personnel underground. Each operator shall maintain self-rescue devices in good condition." 30 C.F.R. § 57.15030.

The record reflects that the inspection that resulted in the citation included inspection of self-rescue devices at the Cleveland Mine. While the completed inspection form indicates the inspector's approval of the devices (Cargill's counsel letter dated Dec. 2, 2022, Ex. C), the issuance of the citation implies that the approval was limited to the W65 self-rescue devices that Cargill, as required by 30 C.F.R. § 57.15031(a), provides each person who goes underground. Tr. 75-76.

As detailed at the hearing, the Ocencos—the supplementary respiratory protection device that Cargill stored at various locations underground—were viewed differently by MSHA. Cargill, which trains each of its miners to locate and take an Ocenco device when evacuating the mine, explained to the inspector that it considered the devices sufficient protection should miners encounter excessive levels of NO_2 or other harmful gases while evacuating the mine in an emergency. Tr. 702-03.

MSHA, however, eventually took the position with Cargill that such devices would *not* be considered in MSHA's evaluation of whether Cargill's designated secondary escapeway could serve in an emergency as a safe, travelable escape route under 57.11051(a). The inspector testified that MSHA district personnel declined to credit Cargill for any protection that the Ocenco devices may have provided in an emergency, because they feared that miners escaping from the Cleveland Mine would fail to take an Ocenco while exiting the mine or, if they did take one, they would not use it properly. Tr. 228-30.[28]

At hearing, the Secretary attempted to establish a legal and evidentiary basis for MSHA's position, consistent with what the Secretary views as the applicable standard, section 57.5005. The Secretary's primary witness on the issue was her expert, MSHA Industrial Hygienist Christina D. Stalnaker. Ex. S-9. According to Ms. Stalnaker, Ocencos have been approved by MSHA and NIOSH as "escape-only" respirators. Tr. 619, 627; Ex. S-9, at 7.

The parties differ on what type of respiratory protection equipment is required while evacuating a mine through a return where excessive levels of NO_2 result from the blasting, such as it does at the Cleveland Mine. Cargill submits that the Ocencos, even as escape-only respirators, are more than sufficient under the circumstances. C. Br. at 15-16. However, the Secretary again points to section 57.5005. S. Br. at 25-26; Ex. S-9, at 4-5. Specifically, the Secretary relies upon the standard's language that "[w]henever respiratory protective equipment is used, it[] . . . shall meet the following minimum requirements: (a) Respirators approved by NIOSH under 42 CFR part 84 which are applicable and suitable for the purpose intended shall be furnished and miners shall use the protective equipment in accordance with training and instruction." 30 C.F.R. § 57.5005. S. Br. at 26; Tr. 615; Ex. S-9, at 5.

According to the Secretary and her expert, approval by NIOSH of escape-only respirators, like the Ocenco, is limited to "a single function: to allow a person working in a normally safe environment sufficient time to escape from suddenly occurring respiratory hazards." Tr. 621; Ex. S-9, at 7 (quoting NIOSH Respirator Selection Logic (DHHS (NIOSH) Publication No. 2005-100)). The Secretary takes the position that, because the respiratory hazard posed by the slug of NO_2 that moves through Cargill's designated escapeway does so on an almost daily basis, it cannot qualify as "suddenly occurring." S. Br. at 26; Tr. 620-21, 629.

Also, according to the Secretary, because the elevated levels of NO_2 are a predictable and routine result of Cargill's blasting schedule, escape-only respirators are not NIOSH-approved in this instance. The Secretary, through her expert, instead considers any exit by the Cargill miners through the secondary escapeway to hold out the potential for "entry" into the NO_2 front that will often be moving through the return, and that therefore a higher quality respirator is required, per NIOSH. Tr. 615, 620, 628-29.; Ex. S-9, at 2 ("entry into a known hazardous atmosphere"), 7, 8 (Ocencos "have not been been approved as respiratory protection for miners *entering* into

[28] A sentence in a draft version of the citation stated that "[m]iners were not equipped with appropriate respiratory protection approved for NO_2 while working in and/or travelling through the affected areas." Ex. R-1, at 1; Tr. 228-29, 853. This language was not included in the final version of the citation issued to Cargil. Tr. 856; Ex. S-1.

atmospheres" that exceed NO_2 limits."). Respirators approved for "entry" purposes provide a higher level of protection than do the Ocencos. Ex. S-9, at 7.[29]

Even if section 57.5005 with its many references to miner "work" could be reasonably interpreted to apply to use of an escapeway in an emergency, the Secretary and her expert have flatly misapplied the plain language of the NIOSH definition of "escape" that they cite, turning it on its head. Contrary to the Secretary's contention (S. Br. at 26), the "suddenly occurring respiratory hazards" from which Cargill miners would be "escap[ing]" is not the NO_2 front. During the front's daily movement through the return airway, miners located underground have no need to don *any* respiratory equipment when and while it does so. That is, because the front does not impact them, absent the extremely rare circumstance of an incident prompting a need to escape through the secondary escapeway.

Rather, during those times that the front moves through the return, most miners would be conducting their assigned tasks, "in [their] normally safe environment," because the front would have no impact upon them. The only exception would be any miners working or traveling in the return airway when the front approaches. In the case of those miners, evacuation from the mine is not necessary. Instead, as the inspector and other witnesses testified, under Cargill policy and in compliance with section 57.5001, those miners merely withdraw to a safer area of the mine. Tr. 140, 164, 277, 321-22, 689-90.

Plainly, in the context of underground mines, the "suddenly occurring respiratory hazard" to which the NIOSH guidance refers is the hazard which necessitates not just such withdrawal from that area but escape from the mine entirely. Both parties spent considerable time at hearing exploring the circumstances that would necessitate evacuation of the mine through the secondary escapeway. Overwhelmingly the discussion centered on the "respiratory hazards" to miners that may result from a mine fire. In the context of miners escaping from a mine fire, they may have to "enter" into pockets of gases that exceed the recommended limits, be it the NO_2 front resulting from blasting, NO_2 from other sources in the mine, such as diesel-powered equipment, or other contaminant gases produced from mine operations or that result from a mine fire. Tr. 788, 1110-11; Ex. S-7 (identifying and measuring CO, nitric oxide (NO), and NO_2 as contaminant mine gases produced during normal mine operations); *see also* 44 Fed. Reg. at 31,914 ("due to the nature of the mining environment, the respirable atmosphere is capable of harmful fluctuations, particularly in emergency situations.").

Consequently, to the extent that it is even reasonable to look to the language of section 57.5005 in this case, Cargill's planned reliance on the Ocenco respiratory devices is consistent with NIOSH's description of the acceptable use of an escape-only respirator. That the Secretary does not recognize that further indicates that her interpretation of section 57.11051(a) in this instance does not reflect "fair and considered judgment."

[29] Cargill stored its respirators certified for miner "entry" into suspected hazardous atmospheres on the surface. These respirators were used for work in previous years in areas in which hydrogen sulfide was present. Tr. 119-20; 853-54.

c. Whether the Secretary's Interpretations are No More than a Convenient Litigating Position

Under *Kisor*, an additional indication that *Auer* deference to an agency's regulatory interpretation is not appropriate is when the interpretation offered appears to be no more than a "'convenient litigation position.'" 588 U.S. at 579 (quoting *SmithKline Beechum*, 567 U.S. at 155 (2012)). Based on the record evidence, I reach that conclusion regarding the Secretary's interpretations underlying the citation at issue here, particularly with respect to her attempt to establish and apply a 5-ppm limit on NO_2 largely derived from the section 57.5001 ceiling limit. This further supports the conclusion that her interpretations of the involved regulations do not reflect "fair and considered judgment."

There are numerous indications in the record that the Secretary may have decided to interpret the scope of section 57.5001 to include areas of a mine being used for escape purposes only *after* MSHA's inspection of Cargill's secondary escapeway revealed lower levels of NO_2 than MSHA suspected were present in the hours immediately following Cargill's blasting. Former Cargill miner Jedlicka testified regarding the high levels of NO_2 within the post-blast front of NO_2 that he and other miners had observed move through the return, and that he had shared the information with MSHA — "[i]n the 20[-] part range" and as high as 33 ppm. Tr. 270-75, 284, 332-34. He stated that miners were concerned that, in the event of an emergency, they would have to use the return as a secondary escapeway when high levels of NO_2 were moving through it. Tr. 337. It was this information that prompted the out of the ordinary inspection by Morris on the third shift. Tr. 124-25, 385.

It appears that the inspector, based on that information, expected to discover much higher levels of NO_2 than he ended up measuring during that shift. Tr. 31-32, 125-26, 145-46. During his inspection, Morris only measured NO_2 below 10 ppm. Thereafter, it took several days for Morris to finalize the basis for the citation that eventually issued—the presence of NO_2 in excess of 5 ppm in an area of the mine that may have been used as the secondary escapeway in the event of an emergency on the third shift. Tr. 31, 187-88, 227-28, 231, 237-39; Ex. S-1, at 1-2.

At hearing, Inspector Morris testified, on both cross and redirect examination, that he would not expect the 8.2 ppm of NO_2 he measured to impede a miner exiting the miner through the secondary escapeway. Tr. 353-55. He indicated that he nevertheless cited Cargill for the presence of that level of NO_2 in the secondary escapeway at the prompting of his superiors at MSHA. Tr. 229.

Additional record evidence shows that the Secretary was not necessarily concerned about NO_2 in the Cargill secondary escapeway that exceeded 5 ppm, *except* when it was present due to the post-blast NO_2 front that moved through the return air course, in which case the level of NO_2 was often much greater than 5 ppm.

Exhibit S-5a is a printout of NO_2 data for the period between September 1, 2021, and August 5, 2022, taken from Cargill's stationary "D3" sensor in the return air course, that shows each "[h]ourly reading when NO_2 was over 5" ppm at that point in what was then the mine's secondary escapeway. Tr. 61-62; Ex. S-3 (mine map), at 4, S-5a, at 001. Ex. S-5a thus pinpointed

each hour, in the almost entire year preceding the issuance of the present citation, that the level of NO_2 at the sensor location exceeded the 5-ppm limit upon which the issuance of the citation was based. There are well over 2000 hourly readings listed on Exhibit S-5a from the 241 separate calendar days on which readings of NO_2 exceeding 5 ppm were registered.

Many of the entries support what each party acknowledges: blasting would often result in high levels of NO_2 in the area of the mine that was designated as its secondary escapeway, during late night and early morning, the working hours of the third shift. There are numerous entries showing sensor readings that exceeded 15 ppm. Ex. S-5a at 003-008, 010-019, 024, 028, 030-031, 033-034, 038-041, 043-045, 047. The highest reading was 29.8 ppm, which is consistent with miner Jedlicka's testimony regarding at least one reading of 30 ppm being witnessed at the D3 sensor. Tr. 273-74; Ex. S-5a at 038.

Just as important was the length of time that NO_2 would exceed 5 ppm. MSHA's calculation, based on the nights it conducted its post-citation ventilation survey, was that post-blast, NO_2 would exceed 5 ppm for at least 5 to 6 or so consecutive hours. S. Br. at 12, Ex. S-7, at 1. That estimate may be on the low side of the time range for the post-blast NO_2 front to move through the return, given that Cargill was blasting those days in only one unit, instead of two as it had done previously. *Id*. Ex S-5a shows many days in which NO_2 gradually rose above 5 ppm, peaked, and then gradually fell back down to 5 ppm over the course of 7 to 8 hours, roughly equivalent to the shift length at the mine. The inspector confirmed this was the normal time period for the NO_2 front to move out of the mine. Tr. 158.

Post-blast NO_2 exceeding and staying higher than 5 ppm for such a length of time is generally consistent with the factual basis for the MSHA's termination of the citation. Tr. 198. Once Cargill adjusted its miners' schedules and assignments so that, post-blast, miners on the third shift would not be inby—and thus not have a potential need to use the secondary escapeway while the NO_2 front moved through it—MSHA was no longer concerned about the amount of NO_2 moving through the return after a blast. Tr. 720-21.

However, Exhibit S-5a also establishes that NO_2 at levels above 5 ppm were routinely registered by the D3 sensor for much more than 8 hours per day. Fully 46% of the 241 days in which the sensor registered readings of NO_2 above 5 ppm registered such readings for a total time of 10 or more hours a day. Nearly a third of those 241 days had NO_2 readings above 5 ppm for more than 12 total hours. In some instances, the NO_2 remained above 5 ppm consistently throughout those time periods, which may have been on occasions when Cargill blasted the face twice, a few hours apart. Tr. 66-67, 903. However, on several of the recorded days, NO_2 dropped below 5 ppm for a few hours before again climbing slightly above 5 ppm for another few hours.[30]

If, as the Secretary contends, NO_2 at any level above 5 ppm is unsafe, then the return air course was too unsafe to use as an escapeway not only during the hours the post-blast front

[30] Blasts several hours apart should be reflected on the sensor readouts as separate instances of NO_2 rising and falling, as the testimony was that the second front would never catch up to the first. Tr. 935. Yet Exhibit S-5a generally does not reflect that.

moves through it, but also at all other times levels of NO_2 therein would exceed 5 ppm. Cargill's escapeways were subject to potential use at all times of day and night while miners were underground, not just in the immediate post-blast time-period. And yet, MSHA, in issuing the citation and terminating it upon Cargill's repositioning and rescheduling of its third-shift miners underground, was concerned about NO_2 exceeding 5 ppm *only* during the post-blast period. Similarly, MSHA's post-citation ventilation survey was limited to those hours as well. Tr. 395, 463; Ex. S-7.

In my view, evidence that NO_2 could exceed 5 ppm in the Cargill return at all times of day—because of, for instance, NO_2 being produced by underground equipment running—with no sign that MSHA considered it to be violative of section 57.11051(a) if it was not resulting from blasting, indicates that the Secretary does not actually consider that *any* level of NO_2 in excess of 5 ppm renders an area of a mine unsafe for purposes of potential escapeway use. Rather, she clearly was concerned *only* with the significantly higher levels of NO_2 that directly result from blasting at the Cleveland Mine, reports of which had led to Morris's inspection during the third shift.

One indication that an agency has adopted a statutory or regulatory interpretation merely as "a convenient litigation position" is where the evidence offered in support of the interpretation demonstrates no link between the interpretation and actual administrative practice. *See Alaniz v. OPM*, 728 F.2d 1460, 1465 (Fed. Cir. 1984); *see also Church of Scientology of California v. IRS*, 792 F.2 153, 165 (D.C. Cir. 1986) (Silberman, J., concurring); *Revak* v. *Nat'l Mines Corp.*, 808 F.2d 996, 1003 (3rd Cir. 1986). That appears to be the case regarding the Secretary's use of the 5-ppm ceiling limit on NO_2, derived from section 57.5001, to interpret the "safe, travelable condition" clause of section 57.110510(a), as well as her misinterpretation of the NIOSH description of "escape-only" respirators.

Considering all the foregoing, I cannot conclude that the Secretary's interpretations of the regulations that underly the issuance of the citation to Cargill reflect her "fair and considered judgment."

6. The Secretary's Interpretations Lacks the Necessary Power to Persuade

Where deference to an agency's interpretation under *Auer* is not warranted, courts instead apply what is known as *Skidmore* deference. *See Christopher*, 567 U.S. at 159. This is "a measure of deference proportional to the 'thoroughness evident in its consideration, the validity of its reasoning, its consistency with earlier and later pronouncements, and all those factors which give it power to persuade.'" *Id.* (quoting *Skidmore v. Swift & Co.,* 323 U.S. 134, 140 (1944)).

Even giving weight to the Secretary's interpretations of her regulations, as the legislative history of the Mine Act requires, I am not persuaded by her argument that any level of NO_2 above 5 ppm renders an escapeway unsafe or untravellable under section 57.110151(a). The foregoing problems with the Secretary's interpretations of sections 57.5001 and 57.5005 are too extensive to ignore. *Cf. Samaritan Health Serv. v. Bowen*, 811 F.2d 1524, 1528 (D.C. Cir. 1987) (refusing to stretch a term "[g]iven the internal logic of the [agency]'s own regulations").

I recognize that, throughout the hearing, the Secretary elicited testimony that called into question Cargill's commitment to complying with the requirements of the section 57.5001 exposure limits, particularly with respect to NO_2 in the return airway at the Cleveland Mine. *See* S. Br. at 29. Topics addressed were instances in which miners were working in the return when they realized that NO_2 had risen to above 5 ppm (Tr. 271, 334); supervisors who examined for NO_2 and other gases in the return at the start of a shift and considered that a sufficient measure, regardless of how much later in the shift miners were scheduled to enter the return to perform assigned tasks (Tr. 293); supervisors who were not readily available to take air readings during a shift (Tr. 282, 310); supervisors and miners who appeared to ignore indications of high NO_2 in the return (278, 280); the low number and inconvenient locations of hand-held monitors available underground to measure atmospheric gases (Tr. 276); that two different handheld monitors could indicate significantly different levels of NO_2 (Tr. 303); and how unreliable Cargill's placarding system was in warning miners to not enter the return when it contained excessive contaminants. Tr. 271, 288, 770.

This information would be relevant in the context of a citation charging a systemic violation of section 57.5001. However, it is of little assistance to deciding the primary issue in this case: determining the amount and concentration of NO_2 that renders an escapeway unsafe or untravellable under section 57.11051(a).

I am similarly unpersuaded by the Secretary's critiques of Cargill's mine evacuation procedures. S. Br. at 27-29. She argues that Cargill should not rely on the Ocenco respiratory devices for escape purposes, because the devices do not provide adequate protection in the event miners need to exit the mine through dangerous gases, such as NO_2. S. Br. at 27-28. Given that NIOSH, and thus MSHA, have certified the Ocenco SCSRs as an escape device (Tr. 609), this is little more than a collateral attack by the Secretary on her own regulation.

The Secretary also maintains that if miners had to evacuate in an emergency, there is insufficient evidence that they would avail themselves of the Ocencos. S. Br. at 27-29. While I appreciate the Secretary's concern, given the testimony of miner Jedlicka (Tr. 285),[31] again there are other standards available to the Secretary. Such standards are not only much more directly applicable than section 57.11051(a) is to the Secretary's concerns, but those standards also provide MSHA ample opportunity and leeway for input into how a mine addresses the issue of emergency evacuations. *See, e.g.,* 30 C.F.R. §§ 57.11053 ("Escape and evacuation plan"), 57.15030 ("Self-rescuer maintenance"), and 57.18028 ("Mine emergency and self-rescuer training").

There is another regulation that also went largely unaddressed throughout the case, to my surprise, even though it is quite pertinent to MSHA's regulation of ventilation and escapeways in underground metal and nonmetal mines. As mentioned previously, the companion to section

[31] The Secretary also argues that even if, during escape, a miner retrieved an Ocenco from a cache, there is insufficient evidence that the miner would properly use the device. S. Br. at 27. However, her own witness, Jedlicka, testified that he was certain he could properly don an Ocenco while escaping the mine. Tr. 284.

57.11051(a) provides in pertinent part that underground metal and nonmetal mines "have two separate properly maintained escapeways to the surface which are so positioned that damage to one shall not lessen the effectiveness of the other . . . ." 30 C.F.R. § 57.11050(a).

Throughout the hearing, witnesses of both parties were questioned on whether Cargill's post-citation establishment of the mine's secondary escapeway in intake air posed less danger to miners underground than retaining it in the return air course. That is because the relocated secondary escapeway is now significantly closer to the primary escapeway, thus raising the issue of whether the two escapeways are no longer "positioned that damage to one shall not lessen the effectiveness of the other," as section 57.11050(a) requires.

The greatest concern was a mine fire impacting either of the escapeways in the redesigned Cleveland Mine. Almost all of the witnesses were posed questions from both sides on a wide variety of miner escape scenarios that could result in the case of a mine fire there.

Steven Horne testified that relocating the secondary was viewed skeptically throughout Cargill, because of the greater likelihood that a fire could contaminate both escapeways at once. Tr. 850; Ex. R-6, at 6. His greatest concern was at the bottom of the service intake air shaft, an area where equipment is susceptible to catching fire. Tr. 882-83. Gary Hartsog, Cargill's expert on mine ventilation and mine emergencies, confirmed that a fire in the primary could immediately smoke up both escapeways as the intakes would be in common, unseparated air. Tr. 1069-70, 1108-09.

According to Jason Wood, an MSHA inspector, Mr. Britton, questioned the relocating of the secondary escapeway, charactering it as "odd." Wood also relayed the opinion of several miners that the new arrangement held out the potential for each escapeway swiftly and easily contaminating the other. Tr. 726, 728.

Inspector Morris also feared that a fire in the primary would immediately compromise the secondary, finding it not to be the "optimal set up." Tr. 257. Bradley Wurl, who led MSHA's post-citation ventilation survey, conceded that there was a greater likelihood of the two escapeways sharing common issues, such as smoke from a fire, once the secondary was located to run parallel to the primary, whereas before there were no such issues. Tr. 465-67.

The Secretary did not offer any evidence on how this major ventilation change at the Cleveland Mine was approved by MSHA; according to Cargill, it was approved with no feedback from the agency. Tr. 945-46. Inspector Morris, not yet having returned to the mine by the time of the hearing, also was unfamiliar with the relocation of the secondary escapeway. Tr. 176.

In light of all of the foregoing and in the terms of *Skidmore*, with respect to the Secretary's interpretations of her standards underlying the citation in this case, I conclude that

there was insufficient thoroughness of consideration and validity of reasoning. Consequently, I am not persuaded by those interpretations and do not defer to them.[32]

Rejecting the Secretary's interpretations of sections 57.5001 and 57.5005 in their theoretical application to the facts in this case results in leaving the state of the law unresolved with respect to the level at which NO_2 renders an escapeway unsafe for its intended use, assuming respiratory protective equipment is not going to be used. However, sufficient evidence on a credible alternative source for an NO_2 exposure limit was introduced at hearing.

Cargill introduced evidence regarding the 2020 Emergency Response Planning Guidelines ("ERPG's"), published by the American Industrial Hygiene Association ("AIHA").[33] AIHA publishes its ERPG's "to provide guideline levels for once-in-a-lifetime, short-term (typically 1-hour) exposures to airborne concentrations of acutely toxic, high-priority chemicals." Ex. R-4, at 3. AIHA reports 15 ppm NO_2 as the "maximum airborne concentration below which nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects or symptoms that could impair an individual's ability to take protective action." *Id*. at 4, 28. Steven Horne testified that, based on this figure, miners would not be at risk evacuating the mine in the NO_2 environment observed by Inspector Morris. Tr. 878; Ex. R-6, at 7 n.5.

Given the short-term exposure to NO_2 anticipated in the case of a mine emergency, this value seems more pertinent than a TLV in this case. Moreover, its reasonableness is supported by evidence in the case as well as other relevant sources. For instance, MSHA's IDLH value for NO_2 is 20. Ex. R-2, at 158. MSHA considers IDLH values as limits which protect against threats of "acute eye exposure that would prevent escape from a hazardous atmosphere." MSHA IV Program Policy Manual 36 (Release IV-25 Nov. 2011).

In addition, miner Jedlicka testified to be able to smell NO_2 at around 12 ppm. Tr. 284. During an emergency evacuation, this could serve as a signal for a miner to don an Ocenco for protection before NO_2 reaches the 15-ppm concentration in an escapeway.

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[32] Even if I were to find the Secretary's interpretation of section 57.11051(a) persuasive in this case, which I do not, I would not assess a civil penalty against Cargill. The Commission recognizes that the "fair notice doctrine," which has been incorporated into administrative law, prevents validating the application of an MSHA regulation that fails to give fair warning of the conduct it prohibits or requires. *Hecla, Ltd.*, 36 FMSHRC 2116, 2115 (Aug. 2016). Here, the Secretary relies upon heretofore unknown readings or applications of sections 57.5001, 57.5005, and section 57.11051(a), few if any of which would be obvious to a person familiar with the mining industry and those regulations. *See id*. (citing *Gen. Elec. Co. v. EPA*, 53 F.3d 1324, 1330 (D.C. Cir. 1995)); *see also Kisor*, 588 U.S. at 579 (rejecting "defer[rence] to a new interpretation, whether or not introduced in litigation, that creates 'unfair surprise' to regulated parties.") (citing *Long Island Care at Home Ltd v. Coke*, 551 U.S. 158, 170 (2007)).

[33] Dr. Schaper recognized at hearing that the AIHA is "an organization worthy of professional respect." Tr. 579.

IV. ORDER

It is **ORDERED** that Citation No. 9669536 is **VACATED** and that the above-captioned cases are **DISMISSED**.

John T. Sullivan
Administrative Law Judge

Distribution:

R. Brian Hendrix, Esq., Husch Blackwell LLP, 1801 Pennsylvania Avenue, NW, Suite 1000, Washington, D.C. 20006 (brian.hendrix@huschblackwell.com)

Jonathan Hoffmeister, Esq., Office of the Solicitor, U.S. Department of Labor. 1240 East Ninth Street, Room 881, Cleveland, OH 44199 (Hoffmeister.Jonathan@dol.gov)